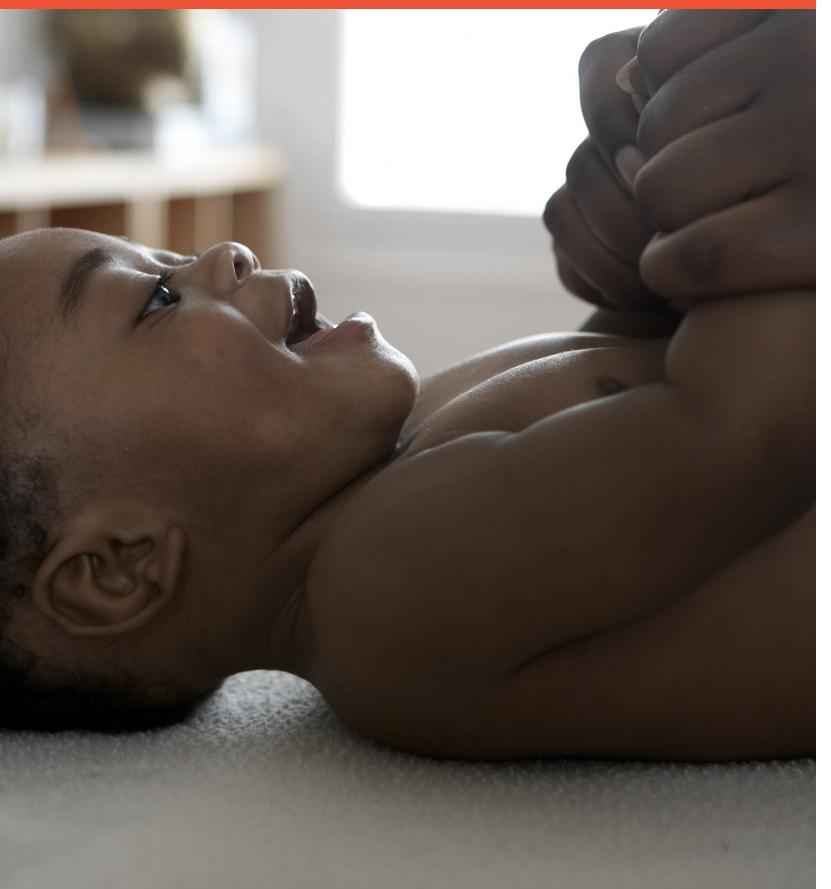


COMMUNITY HEALTH ASSESSMENT 2014





MATERNAL, INFANT and TODDLER



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Executive Summary

In the spring of 2012, the Marion County Public Health Department (MCPHD) called together a steering committee of providers, consumers and experts in the public health field to guide MCPHD in producing a countywide Community Health Assessment (CHA).

The goals of the CHA are to:

- 1) Describe the community health status of Marion County, with comparisons to its urban peers and to national standards (where applicable)
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health and the pathways between social determinants of health, ¹ intermediate outcomes and final health outcomes
- 4) Prioritize the identified issues.

The Community Health Assessment is divided into reports about specific age ranges. Each report is a product of a work group of topical experts, community-based partners and MCPHD staff. The Maternal, Infant and Toddler work group identified problems, trends and factors for the leading causes of infant and small child mortality and morbidity, comparing those findings with peer counties and national indicators.

Each identified issue represents a specific population group, risk factor(s) or an access to care problem that may require unique intervention strategies. The objective is to focus attention on issues that have large impacts on the maternal, infant and young child populations. The reports, taken together, will inform the Community Health Improvement Plan of MCPHD.

The top three issues for the maternal, infant and toddler population were identified as:

 Medicaid-covered expectant mothers often fail to get "timely and adequate" prenatal care.

Almost two-thirds (63%) of the 12,429 county births in 2012 were covered by Medicaid, and that proportion is increasing. However, Medicaid-covered expectant mothers are much more likely to fail to get "timely and adequate" prenatal care (31%) than are mothers with other coverage (11.7%).

The Medicaid population also has poorer birth outcomes, including a 14% higher rate of low birth weight (LBW) infants, a 19% greater rate of premature births and a 37% higher rate of infant mortality, than mothers with all other forms of health care coverage.

Infants of mothers who do not start prenatal care before the first trimester of pregnancy are five times more likely to die in their first year of life and three times more likely to be born with a low birth weight.³ Early access to prenatal care is key to reducing infant mortality⁴ and addressing other maternal and environmental risk factors for poor birth outcomes. HP2020 objectives aim for 77.9% of pregnant women to be seen in the first trimester of pregnancy and for 77.6% to have early and adequate prenatal care.⁵ Only 70% of Marion County mothers start in the first trimester, a percentage which has remained static since 2008.

This is an important policy issue. Without early and adequate prenatal care, infants face increased probability of poor birth outcomes and developmental problems, greatly increasing health care costs over the lifespans of infant and mother.

High premature birth rates among black mothers are a leading cause of inequity in birth outcomes.

Black births make up one-third of all births in Marion County. Of these, 13.6% are preterm, a proportion about 66% higher than that for white preterm births (9.7%). Preterm delivery (birth before 37 weeks' gestation) is a major cause of neonatal morbidity and mortality, accounting for 70% of neonatal deaths. The cost per premature infant is over \$50,000 more than that for a full-term baby.

Almost 11 percent of county births are premature births, a figure on par with the national average.⁷ Short gestation/low birth weight (LBW) is the leading cause of infant mortality⁸ in the county. Black infants are four times more likely to die of short gestation/low birth weight than all U.S. infants for this cause, with death rates of 473.2 vs. 111.3 per 100,000 population.

Prematurity is a costly long-term outcome for surviving infants, their parents and the general population. The trend of premature births among black mothers has not improved over time.

• High maternal smoking rates put babies at risk.

The county's maternal smoking rate is nearly 50% higher than the national rate (14.5% vs. 10.4%) and is a known risk factor for adverse birth outcomes.

In Marion County, maternal smoking was associated with 24.6% of all LBW births and 35.3% of LBW births among white mothers in 2012. Maternal smoking was also associated with 19.6% of all preterm births and 28% of preterm births among white mothers.

It is estimated that each LBW birth costs \$23,320, and very low birth weight (VLBW) births cost \$75,000 per case.

Maternal smoking is a particular concern for young white mothers under the age of 24, 33%-35% of whom are smokers. This demographic accounts for about 1,400 births, or over 1 in 10 (11%) of all births in the county annually.⁹

Low birth weight/premature birth increases a child's risk for negative outcomes throughout his or her lifespan. Smoking in pregnancy is a preventable risk factor for many adverse birth outcomes, including low birth weight, prematurity, congenital defects and poor fetal lung development. ¹⁰ It is estimated that every dollar spent in smoking cessation treatment saves \$3 to \$17 in future health care costs.

Pre- and postnatal smoking is a known risk factor for asthma incidence in premature, low birth weight infants and other children in the household. Smoking during pregnancy predisposes newborns to a 40% increased risk of wheezing, asthma and increased upper and lower respiratory tract infections. Several studies have indicated a higher risk for asthma incidence among premature and LBW infants.

Moderate priority status was given to the following issues:

- **High asthma hospitalization rates for ages 0-17** exceed national rates; black rates are two to three times that of white rates.
- **High Hispanic teen birth rates** continue. Although these rates are declining, as they are for all teen births, this low-income group experiences multiple barriers to care.
- **Domestic violence** is responsible for child injury/neglect and deaths.
- **Food availability** compromises low-income mother/child health. Free prenatal vitamins are available to pregnant women with a prescription, but this service is not widely known among the targeted population.

Issues that require continuing monitoring or data development:

- Relatively few black mothers initiate breastfeeding. The rate is increasing but is far below the Healthy People 2020 (HP2020) objective, which impacts multiple other outcomes.
- Rising pedestrian accident deaths contribute to the No. 1 cause of death for ages 1-4.
- **High birth rates among mothers ages 18-19** exceed those for peer counties and the nation.

A Call to Action

Medicaid Managed Care Organizations (MCOs), especially MDWise, Inc., care for two-thirds of the prenatal population and over 100,000 children in the county. They are alert to the importance of early access and enrollment in Medicaid to reducing outcome disparities among minority and low-income populations.

In light of the Affordable Care Act, health care changes and state budgetary restrictions, the work group believes this is a key time to highlight the top three priorities. The Indiana Family and Social Services Agency (IN-FSSA) and MCOs can enact policy changes more quickly than can legislative initiatives. The work group's suggested changes to the presumptive eligibility process might make a difference in early access to prenatal care. Major hospitals and health care providers to high risk populations are also at the table to help coordinate pre- and postnatal care.

Premature births reflect poor maternal prenatal health statuses, mothers' low access to care and undiagnosed health problems during pregnancy. Prematurity in black infants is a focus of MCPHD's Healthy Start, the Indiana Perinatal Network (IPN) and the March of Dimes. These strong coalitions focus on increased identification of, and coordinated care for, mothers at risk for premature birth. Coordinated prenatal care in the Wisconsin Medicaid program resulted in 21% fewer LBW births and 26% fewer premature births and might be cost-effective in Indiana.¹⁴

The Medicaid MCOs also seek to reduce adult smoking. While the county has advanced in smoke-free air policies and smoking has declined among adults, smoking rates remain stubbornly resistant in young adults and adolescents. Smoking cessation counseling is a billable item under Medicaid if the consultation lasts at least a half hour and is with an approved cessation provider, ¹⁵ but cessation may not be targeted during prenatal visits due to visit time restrictions. Prenatal care providers also may not know where to refer women for cessation care. The Indiana Tobacco Quitline's one-on-one telephone cessation support only recently became available to adolescents and is limited to five consultation sessions.

The work group believed this issue has the capacity to create "upstream changes" if a mother's smoking could be reduced or averted. The group felt that MCPHD may reap momentum from the 2012 expansion of Indianapolis' anti-smoking law, changes in the Quitline policies in 2013 to offer services to adolescents ages 13-18, and the work of very motivated coalitions in this area.

Providing at-risk populations with family planning education and options, smoking prevention and cessation assistance to youth and access to healthy choices and primary care are key strategies for reducing high rates of disparities in birth outcomes. They also promote lifetime health and well-being.

Further Initiatives:

- A successful program in helping mothers complete their prenatal care visits is MCPHD's Beds and Britches Etc., or BABE initiative. Pregnant and new mothers receive coupons during their doctor visits to use at one of five "stores" around the county.
- Indianapolis Healthy Start implemented the Wee Ones program, which allows qualifying mothers to keep their babies in prison with them after they give birth. Indianapolis is one of only six programs that allow women to keep their babies in prison.
- Indianapolis Healthy Start collaborated with six birthing hospitals to focus on safe sleep
 practice policies, which heightens awareness of SIDs death and has reduced this cause of
 infant death.
- The Women, Infants and Children Program (WIC) staffs Breastfeeding Peer Counselors in hospitals with a goal to increase breastfeeding duration rates, enhance the mother's breastfeeding experience and decrease unnecessary formula supplementation.

Next Steps

All CHA reports will form a baseline for the Community Health Improvement Plan. This report is being disseminated among the Marion County Public Health Department's programs and partners as well as to other public health organizations. It will be posted on MCPHD's and other partners' websites. The Epidemiology Department will work with partners to develop and monitor vital statistics for birth and death changes, as well as hospitalization rates and injury data, to track population health status changes.

Community Health Assessment Goals & Process

When the Marion County Public Health Department (MCPHD) convened a steering committee to guide it in the Community Health Assessment (CHA) process, members agreed to a series of person-centric (age group) reports that would be advised by work groups of steering committee members, topical experts, MCPHD staff and community-based partners.

Each work group helped identify problems, trends, causal factors and existing resources to address those factors for a defined population. They then prioritized the identified issues and planned the dissemination of the report. The work group members for the Maternal, Infant and Toddler Health Assessment are listed in Appendix 1.

The goals of the CHA are to:

- 1) Describe the community health status of Marion County, with comparisons to its urban peers and to national standards (where applicable)
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health and the pathways between social determinants of health, ¹⁶ intermediate outcomes and final health outcomes (Appendix 4 and Appendix 5)
- 4) Prioritize the identified issues.

The work group also identified where potentially important issues could not be ranked due to data limitations.

The CHA will serve as a basis for MCPHD's Community Health Improvement Plan.

Purpose of CHA

- Increase awareness of community health issues
- Describe social determinants & risk factors
- Compare Marion County to peer cities and nation
- Identify health disparities in county
- Prioritize community health needs
- Provide database for MCPHD's Community Health Improvement Plan
- Provide basis for planning programs& policies
- Engage coalitions and partners
- Improve health status of community

Marion County Demographics and Health Determinants

From 2000 to 2010, Marion County's population grew by 5% to 903,393 while the proportion of its citizens living in poverty and/or not covered by health insurance increased. Those two social determinants of health are reflected in the County Health Rankings used by MCPHD as primary indicators of health status. The Health Rankings include social determinants of health, such as education, poverty level and health care access, as well as key health indicators. This health assessment also uses five Midwestern urban counties with populations from 500,000 to 1 million for comparison to Marion County.

This report concerns the county's 68,160²⁰ children under age 5 (7.5% of the total county population) and its 14,000²¹ pregnant women (Appendix 5). While mothers in the county generally share the demographics of all women ages 15-50, they are more likely to be Hispanic (12.5% of birth mothers vs. 8.5% of the same-age female population), ages 20-34 (78% vs. 45% of the female population) and meet federal poverty guidelines. In 2010, the female county population ages 15-50 was 63% white, 27% black and 9.3% Hispanic; the remainder was some other race/ethnicity.²²

Poverty Status: Families

Between 2000 and 2010, the proportion of county residents under 100% of the federal poverty level (FPL)²³ grew to 18.8% overall, including 27.7% of working-age (18-64) adults.²⁴ Median family income was \$39,393 in 2010 compared to \$44,616 for Indiana.²⁵ The median family income was also less than the "economic self-sufficiency" income²⁶ for Marion County's one-and two-adult headed families.

County family households meeting poverty standards included 26.2% of black and 35.7% of Hispanic families compared to 14.3% of white families, a disparity characteristic of many urban areas.²⁷ Unemployment also followed ethnic lines: The county's unemployment rate ranged from 5.6% to 10% over the period 2005 to 2012, but the rate was much higher for blacks and Hispanics. Between 2007 and 2011, county recipients of food stamps (SNAP) grew by 50%, from 115,700 to over 175,000.²⁸

Over one-third (34.4%) of women ages 15-50 who gave birth during 2009-2010 met the 100% federal poverty guidelines compared to 1 in 5 of all women in the county.²⁹ In 2010, nearly half (45%) of county children were in single-parent households, compared to 32% in the state and 20% nationally.³⁰

Poverty Status: Children

One-third (36%) of the nearly 66,000 children under age 4 in the county met federal poverty levels vs. 20% nationally. ³¹ Child poverty in Marion County has doubled since 2000. ³² Some 63% of schoolchildren received free or reduced lunch in the county in 2011 (91,546 children), up from 55.7% in 2007. ³³ Achievement test scores negatively trend with a school's percentage of population in poverty. For example, the United Way of Central Indiana finds an inverse association between percentage of students qualifying for free/reduced lunches and performance on district-level ISTEP state standardized test scores. ³⁴

High School Graduation Rates

The percentage of Marion County adults over age 25 with a high school diploma or equivalent (78.6% in 2010) and the percentage of ninth graders graduating high school (81%) are at the low end of a range that includes our peer urban counties, which varies between 81% and 84% for both measures, and the state. The graduation rate for ninth graders has increased from 67.8% in 2006. Among women having children in 2010, one-fourth (24.7%) had less than a high school education, similar to 22% among all women ages 15-50 (Appendix 6).

Uninsured Population

The percent of county residents under age 65 without health insurance $(18\%)^{35}$ exceeded the national level (15.5%) but is within the range of our peer counties (14%-18%). Some 115,000 county children ages 0-19 were covered by Medicaid (Hoosier Healthwise) in 2008, up from 74,500 in 2000. Over 1 in 10 (11.8%) children under the age of 19 and under 200% FPL were uninsured in the county in 2009.³⁶

Health Indicators for Perinatal and Infant Populations: County Health Rankings

In this section, we address major causes of mortality (death) and morbidity (hospitalization) for the age group 0-4. The County Health Rankings include several relevant indicators: years of potential life lost under age 75 (YPLL);³⁷ infant mortality rate (IMR),³⁸ which is a major contributor to YPLL; and low birth weight (LBW) rates. IMR is a frequently used statistic that reflects not only the health and economic status of mothers but also their access to appropriate primary health care, and it is specific to the population covered in this chapter.³⁹

Infant Mortality Rates

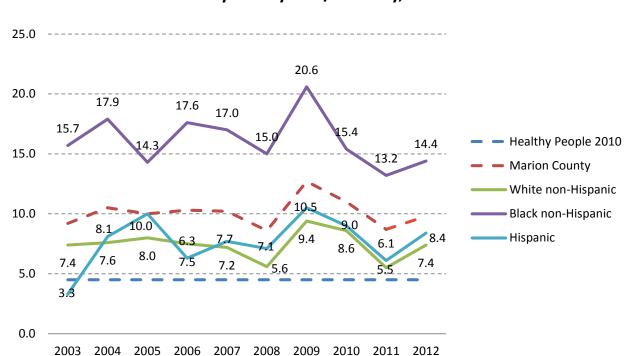
Marion County's infant mortality rate of 10.3 deaths per 1,000 births (2008-2012) is 56% higher than the national rate (rate ratio: 1.56), 50% higher than the HP2020 objective, and has increased by 13% when comparing 1998-2002 aggregated rates to those for 2008-2012 (Appendix 3a). The county's leading cause of IMR, short gestation/low birth weight, is also twice the U.S. rate (RR 2.3)(Table 1). While IMRs have declined in recent years, the nearly 2-to-1 disparity between black and white IMR has persisted (Figure 1).⁴⁰

Table 1: Leading Causes of Infant Deaths (Ages 0-1): Marion County 2008-2012 and U.S. 2008

Rank	Marion County rate per 100,000 (2008-2012) ⁴¹ (number of deaths)	U.S. (2008) ⁴² rate per 100,000	Marion County to U.S. rate ratio
1	Short gestation/LBW 258 (163)	Short gestation/LBW 111.3	2.3
2	Congenital malformations 180 (114)	Congenital malformations 132.8	1.35
3	Maternal complications of pregnancy 73 (46)	Maternal complications of pregnancy 41.5	1.76
4	Accidents 65 (41)	Accidents 30.6	2.1
5	SIDS 43 (27)	SIDS 53.9	0.79
Total	1,031 (652)	659.3	1.56
IMR	10.3 per 1,000 ⁴³	6.6 per 1,000	HP2020 6 per 1,000

Source: DR 1442, Department of Epidemiology

Figure 1: Marion County Infant Mortality Rates (IMR) by Race



Infant mortality rate by race/ethnicity, 2003-2012

Source: DR1705, Department of Epidemiology

Mortality Rates, Ages 1 to 4

The Marion County mortality rate for 1- to 4-year-olds is similar to that of the nation and is the lowest mortality rate among all age groups. The rate per 100,000 population is also similar to the HP2020 objectives (Table 2).

Accidents, the leading cause of death for this age group, are about 30% lower than the national rate (RR: 0.71). The county, however, is nearly 80% higher than the nation in the second leading cause: homicide (RR: 1.79).

Table 2: Leading Mortality Causes: Marion County, Ages 1-4, 2005-2009

Rank	Marion County rate per 100,000 (number of deaths)	U.S. rate per 100,000 2010	Marion County to U.S. rate ratio
1	Accidents 6 (18)	Accidents 8.4	.71
2	Homicide 4 (12)	Homicide 2.3	1.79
3	Congenital malformations 4 (12)	Congenital malformations 3.0	
4	Cancer 3 <i>(8</i>)	Cancer 2.1	
5	Heart disease 1 (3)	Heart disease 1.0	1.0
Total	26 (<i>75</i>)	26.5	HP2020 objective 25.7 per 100,000

DR1442, Department of Epidemiology and Deaths: Preliminary Data for 2010, Murphy, SL, Xu, J, and Kochanek, KD, 2012, National Vital Statistics Reports, Vol. 60, No. 4 Table 7

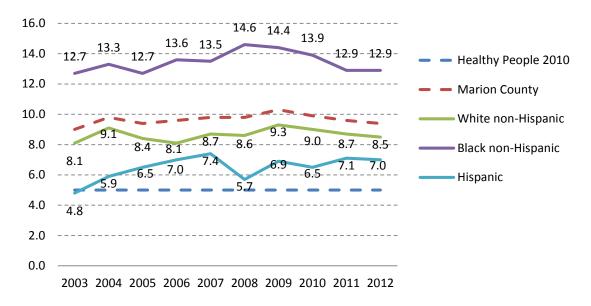
Low Birth Weight (LBW) Rates

Low birth weight⁴⁴ is a strong predictor of death in the first year of life. This County Health Rankings indicator represents maternal exposures such as risky health behaviors⁴⁵ and access to care as well as an infant's likely morbidity and premature mortality risk.⁴⁶ The health consequences of LBW in the first year of life and thereafter are numerous.⁴⁷

Marion County is slightly above the national percentage for LBW births (9.4% vs. 8.2% of U.S. births), but the county is at the low-end of the range for similar urban counties. Overall, county LBW rates exceed the HP2020 objective of 7.8%.⁴⁸ White (8.5%) and black (12.9%) rates of LBW infants were higher than U.S. rates.⁴⁹ Hispanic rates were lower (7.0%).

Figure 2: Marion County Low Birth Weight Rate (Percentage), by Race

Low birth weight birth rate (%) by race/ethnicity, 2003-2012



DR1705, Department of Epidemiology

LBW is more than twice as likely in black births than among white births, although maternal smoking is most common in whites and a likely factor in those birth weights.

Morbidity Indicator: Hospitalization Rates

A total of 1,809 hospital admissions for Marion County residents age 1 and under led to a rate of 13,061 per 100,000 population in 2009, the most recent available data year. The three leading causes are shown in Table 3. The leading cause was conditions originating in the perinatal period, with 368 cases.

The number of admissions for 1- to 4-year-olds (1,881) was similar to that for infants, but ages 1-4 had only about one-third of the infant population's hospitalization rate (3,463 per 100,000).⁵⁰

Table 3: Hospitalizations of Marion County Ages 0-1, 2009

Marion County Hospital Discharges, Ages 0-1, 2009		% of lead cause	% Lead Cause Category of Total Discharges
Top 3 leading causes of discharge:	N cases	category	
Respiratory Causes	508		28.1
Acute bronchitis and bronciolitis	234	46.1	
Acute respiratory infections, except bronchitis/bronciolitis	62	12.2	
Pneumonia	93	18.3	
Other respiratory disease	51	10.0	
Asthma	47	9.3	
Influenza	21	4.1	
Conditions originating in the perinatal period	368		20.3
Other and ill-defined conditions originating in the perinatal period	85	23.1	
Other perinatal jaundice	81	22.0	
Other respiratory conditions of fetus and newborn	51	13.9	
Certain other conditions originating in the perinatal period	43	11.7	
Infections specific to the perinatal period	40	10.9	
Conditions involving the integument/temperature regulation	35	9.5	
Disorders relating to short gestation/LBW	33	9.0	
Congenital Anomalies	175		9.7
Congenital hypertrophic pyloric stenosis	49	28.0	
Other congenital anomalies	33	18.9	
Bulbus cordis anomalies/ cardiac septal closure	24	13.7	
Other congenital anomalies of digestive system		11.4	
Other congenital musculoskeletal anomalies		10.9	
Other congenital anomalies of circulatory system	16	9.1	
Congenital anomalies of respiratory system	14	8.0	
Total Discharges 2009	1,809		

Source: DR1762, 2009 Hospital Discharges, Marion County

Among 1- to 4-year-olds, the leading cause of admission is respiratory (42%), with asthma leading that category (n=341, 43% of respiratory causes). A less frequent cause, comprising 9% of all causes, is injury and poisoning (Table 4).

Table 4: Hospital Discharges, Ages 1 to 4, 2009

Admissions, ages 1-4	N	Rate per 100,000
Total	1,881	3,463.5
Leading causes:		% of all admissions
Respiratory	797	42
Asthma	341	18
Pneumonia	215	11.4
Acute bronchitis and bronchiolitis	84	4.5
Injury/poisoning	163	8.6
Burns	32	1.7
Fractures	28	1.4
Poisonings	23	1.2

DR1762, Department of Epidemiology

High Priority Issues

To identify and prioritize health issues by rank order, the work group considered the number of persons affected, severity of the health impact, amenability to improvement and the prevalence of the condition, among other criteria. The work group found that three issues had the highest priority for community action, meeting six out of 10 prioritization criteria. The criteria differ for each of the issues.

High Priority Issue A: Lack of prenatal care in Medicaid-covered expectant mothers

Nearly two-thirds (63%) of all 12,429 county births in 2012 were covered by Medicaid, as were 60% of all first births.⁵¹ These pregnant mothers were three times more likely to not get first trimester⁵² prenatal care (31%) than were mothers with other coverage (11.7%)(Table 5).

Medicaid births are considered high risk⁵³ by virtue of the low income and educational status of the mother, as well as pre-existing maternal health problems, and late and intermittent use of prenatal care. Compared to mothers with all other coverage, Medicaid mothers have a 14% higher rate of LBW infants (OR 1.14), a 19% greater rate of premature births (OR 1.19) and a 37% greater infant mortality rate (OR 1.37) (Table 5).

Table 5: Medicaid and Other Funded Births: Marion County, 2010

	% of all county births	Medicaid mothers	Mothers with all other coverage	HP2020
Medicaid births	63%			
Increase in Medicaid births, 2007-2012	61% to 63%, or .04% per year for period	I	I	_
No prenatal care, 1st trimester, 2012 ⁵⁴	23.8%	31%	11.7%	77.9
Timely/adequate prenatal care, 2012 ⁵⁵	65%	56.1%	78.6%	77.6
LBW rate, 2012 (number)	9.4%	11.1% (885)	8.7% (402)	7.8%
Premature birth rates, 2012 (number)	10.6%	12.5% (1,003)	9.5% (441)	11.4%
IMR, 2008-2012 (number)	10.3 per 1,000 live births (652)	10.5 per 1,000 (251)	6.8 per 1,000 (158)	6.0 per 1,000

DR1887, Department of Epidemiology

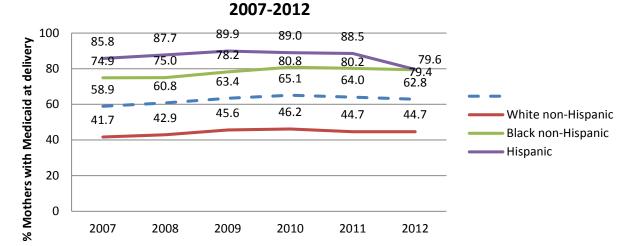
Growth in Medicaid deliveries

Medicaid pays for a majority of prenatal and delivery care in the county, and the number of pregnant women covered by the program has increased in recent years. White births covered under Medicaid grew from 42% to over 45%, black births increased from 75% to 80%, and Hispanic births hovered between 78% and 89% between 2007 and 2012 (Figure 3).

The work group identified several problems:

- Women often do not get enrolled in the "presumptive eligibility" (PE) program for first-time Medicaid-eligible pregnant women.
- Providers don't accept PE clients or the PE enrollment process.
- Clients are often young and need better knowledge of family planning options, prenatal care needs and the PE process.
- Mothers are disadvantaged and come into the system already facing health challenges.
- Many pregnancies are unplanned. Mothers may delay seeking medical care because they
 face more immediate needs such as financial, housing and social needs.

Figure 3: Marion County Births Covered by Medicaid, 2007-2012



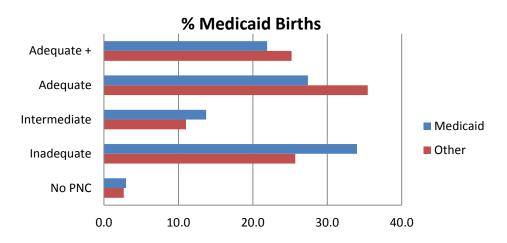
Marion County Mothers With Medicaid,

DR1887, Dept of Epidemiology, birth certificate data

Medicaid mothers had a greater risk of no or inadequate prenatal care (56% had "adequate care") compared to mothers with other health care coverage (78% of whom had "adequate care," meeting the HP2020 objective) (Figure 4). Therefore, 44% of Medicaid mothers did not have adequate prenatal care, meaning they had an inadequate number of visits and/or interrupted prenatal care.

HP2020 objectives aim for 77.9% of pregnant women to be seen in the first trimester of pregnancy and for 77.6% to have early and adequate prenatal care. Since 2012, 78% of all Marion County mothers received first-trimester care (Figure 5).

Figure 4: Health Coverage and Adequacy of Prenatal Care: Marion County Births, 2008-2012, by Medicaid and Other Payers



DR1759, Department of Epidemiology, birth certificate data, Blue: Medicaid-covered births. Red: All other coverage

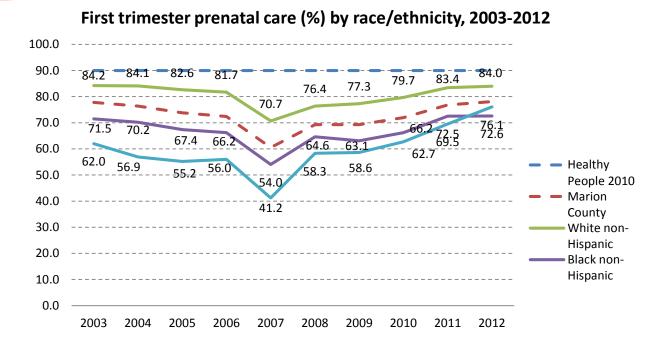


Figure 5: Marion County Mothers Receiving Prenatal Care in the First Trimester, 2003-2012

DR1705, Department of Epidemiology, birth certificate data

Marion County infant mortality rate is 56% higher than the U.S. (RR 1.56) and 58% greater than the HP2020 objective, with over 600 infant deaths among live-born infants during the period 2008-2012. "Low birth weight/prematurity" is the leading cause of infant deaths in the county, whereas "congenital malformations" is the leading cause of infant death in the nation (Table 1).

Benefits of prenatal care

Infants of mothers who do not start prenatal care before the third month are five times more likely to die in their first year of life and three times more likely to be born at a low birth weight.⁵⁷ Early access to prenatal care is key to reducing infant mortality.⁵⁸

Prenatal care also addresses several risk factors for poor birth outcomes, such as maternal chronic diseases and pre-conception health of the mother, with interventions such as smoking cessation for mothers and screening/treatment of sexually transmitted infections. Prenatal care coordination (equal to six contact hours) for high-risk mothers in the Wisconsin Medicaid program, for example, resulted in positive birth outcomes for 45,000 Medicaid recipients in 2001-2002. They had 21% fewer LBW births and 26% fewer premature infants after controlling nine risk variables. Such coordination could be cost-effective in Indiana as well. ⁵⁹

Medicaid prenatal care and deliveries are concentrated in certain larger hospitals and community clinics in Marion County. While Eskenazi, IU-Methodist and St. Vincent hospitals each deliver about 1 in 5 infants in the county (Figure 6), Eskenazi and IU-Methodist, together

with their affiliated clinic systems, care for over 61% of Medicaid deliveries (Figure 7). This concentration of the service population in two major health systems might facilitate initiatives addressing Medicaid enrollment, reducing inadequate prenatal care and adverse pregnancy outcomes.

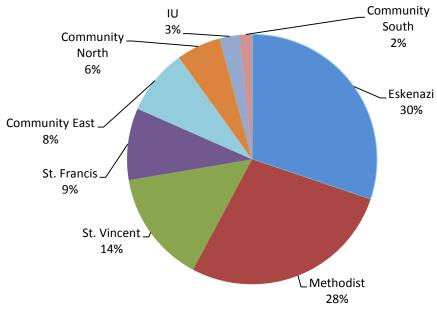
St. Vincent 18%

Other IU Community 1% 4%. South 4% Methodist 21% Community East 6% St. Francis_ 13% Eskenazi 19% Community. North 14%

Figure 6: Percent of Total Marion County Births by Hospital, 2008-2012

DR1795, Department of Epidemiology





DR1795, Department of Epidemiology

The work group proposed that access to prenatal care and improved birth and IMR outcomes in the Medicaid population is a critical policy issue, affecting not only the lifelong health of mothers and infants but also disparities in life expectancy, achievement and community well-being. Low birth weight and preterm infants are not the only costs to the health care system. Young mothers who do not complete their educations have poorer health outcomes for themselves and their families.

The work group noted that this is a time of great fluidity in the Medicaid program and in health care in general, given the emergence of health care reform, which enhances the prospects for other changes as well. The Indiana Perinatal Network, Indiana Academy of Pediatrics and March of Dimes focus on state-level Medicaid policies for maternal and child care. The Medicaid Managed Care Organizations that care for this population are also aware of the problems of early access, enrollment and quality issues in prenatal care access. ⁶⁰

The Family and Social Services Agency (IN-FSSA) can enact rule changes more quickly than can legislative initiatives. Changing the process of presumptive eligibility (PE) to get women into prenatal care sooner might have a chance to make a difference.

High Priority Issue B: High premature birth rates among black mothers

Preterm delivery is a major cause of neonatal morbidity and mortality, accounting for 70% of neonatal deaths. A previous spontaneous preterm delivery is a major risk factor for subsequent preterm delivery. Premature births also reflect poor maternal prenatal health status, the mother's limited access to care and undiagnosed health issues during pregnancy if the mother is not seeing her provider regularly. The cost per premature infant is over \$50,000 more than for a full-term baby. 62

Black births make up 3,701, or one-third, of Marion County 2012 births and are the majority of preterm deliveries in the county. Almost 14% of black infants are born prematurely vs. 9.7% of white infants and 9.3% of Hispanic infants. In addition, the black premature birth rate is 20% higher than the HP2020 objective (Table 6).⁶³

Marion County's black infants are nearly three times more likely to die due to short gestation/low birth weight causes (rate 473 per 100,000 population) than white infants (165 per 100,000) (Table 6).⁶⁴ They are 2.3 times more likely to die in the neonatal period compared to the HP2020 standards (9.4 vs. 4.1 neonatal deaths per 1,000 live births) and 87% more likely to die than county white infants due to short gestation/LBW.

The high rate of premature black births is a major driver of both LBW births in the county (Figure 2) and short gestation/LBW as the county's leading cause of infant mortality (Table 1). Black infants are more likely to have a LBW and to die as a result.

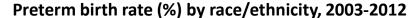
Premature births in Marion County, at 10.6% of all births, now approach the national average⁶⁵ of around 9% to 10%.⁶⁶ Nationally, 75% of all infant deaths are due to preterm-related causes. However, this varies by ethnicity. Among black non-Hispanic births, 46% of infant mortality is due to preterm-related causes vs. 32% for white non-Hispanic births.⁶⁷ Nationally, non-Hispanic blacks have had higher rates of premature births than all other groups since at least 1990 (Figure 9).⁶⁸

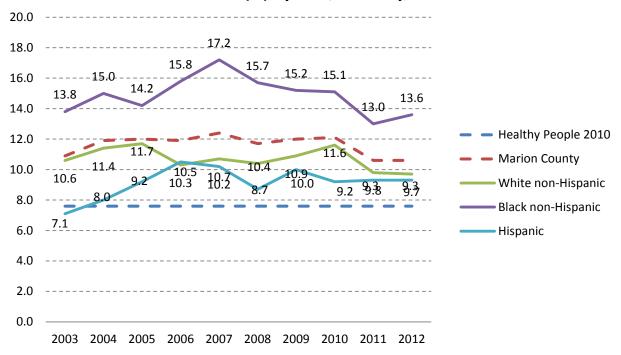
Table 6: Marion County Premature Birth and LBW Rates, Neonatal and IM Rates Due to Short Gestation/LBW, by Ethnicity

Marion County (2012)	All ethnicities	Black	White	Hispanic	HP2020
All deliveries	12,429	3821	5636	2313	_
Premature birth rate	10.6%	13.6%	9.7%	9.3%	11.4%
LBW rate	9.4%	12.9%	8.5%	7.0%	7.8%
Neonatal mortality rate (number)	6.4 per 1,000 live births (80)	9.4 per 1,000 live births (35)	3.7 per 1,000 live births (21)	5.6 per 1,000 live births (13)	4.1 per 100,000 live births
Infant deaths due to short gestation/LBW (2008-2012): rate (number)	256.3 per 100,000 population (162)	473.2 per 100,000 population (88)	165.0 per 100,000 population (49)	171.1 per 100,000 population (20)	US Rate ⁶⁹ (2008) 111.3 per 100,000 population

DR1887, Department of Epidemiology, birth certificate data

Figure 8: Marion County Preterm Birth Rates, by Race, 2003-2012

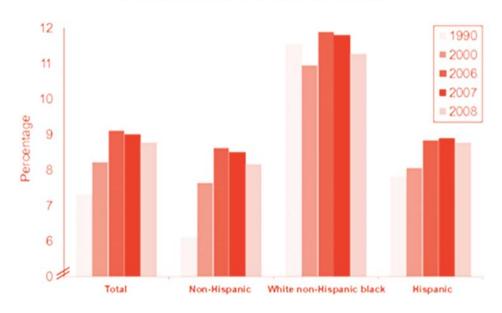




DR1705, Department of Epidemiology

Figure 9: U.S. Late Preterm Births, by Year and Race

Percentage of late-pretermbirths according to race and Hispanic origin: United States, 1990, 2000, 2000, 2006, and 2007 (final) and 2008 (preliminary).



Source: Mathews TJ et al., Pediatrics, 2011:127:146-157.

IMR and premature birth rates have not improved much among black mothers compared to white mothers in Marion County or compared to the state over time (1999-2008). ⁷⁰ Marion County's black infants are three times more likely to die in their first year of life than are the county's white infants. ⁷¹

Other factors contribute to premature births and low birth weight, including young maternal age, medically indicated cesarean section delivery, maternal conditions leading to membrane rupture, and vaginal/uterine infectious diseases. A previous spontaneous preterm delivery is a major risk factor for subsequent preterm delivery.

Intrauterine infection is often chronic and asymptomatic until labor or membrane rupture occurs. Repeated preterm deliveries have been attributed to chronic (subclinical) intrauterine infections. Growing evidence suggests that subclinical infection is associated with up to 40% of preterm delivery cases. A previous *Chlamydia trachomitis* infection, independent of a mother's age, socioeconomic status or multiple births, increases the risk of an early preterm birth fourfold, and that of a later preterm birth (birth before the 35th week) by more than twofold.

In identifying women as being "high risk" for a preterm birth, a history of vaginal infections such as chlamydia may be one indicator of risk.⁷² The County Health Rankings reports a Marion County chlamydia infection rate of 808 per 100,000 population in 2012, which is in the midrange of peer Midwestern urban counties but is 28% greater than the national average (586 per 100,000).

The work group suggests evaluating the cost-effectiveness of repeated screening in the prenatal period, especially by providers caring for young mothers. Most providers screen for sexually transmitted infections at the initial prenatal visit, according to current clinical guidelines. Chlamydia infections are relatively silent, however, and tend to be repeated during pregnancy, especially in younger women.

The rate of prematurity among black infants is a focus of MCPHD's Healthy Start and the Indiana Perinatal Network and March of Dimes coalitions. These strong partnerships focus on policies and practices that increase identification of and coordinated care for mothers at risk for premature birth.

High Priority Issue C: High maternal smoking rates

Marion County has exceeded national trends and Healthy People objectives for adult smokers for several years. Though it has been declining slowly over time (Figure 10), countywide smoking prevalence is over twice the HP2020 objective (26% vs. 12% in 2012) and falls outside the range of our peer urban counties.⁷³

More pertinent is the smoking rate among pregnant mothers (14.5% overall).⁷⁴ This risk factor is most prevalent among young white mothers (21.8%) and less prevalent, but emergent, among black pregnant women (12.5%), well above the HP2020 goal that 98.6% of pregnant women abstain from smoking (Table 7).

Maternal smoking is an independent risk factor that contributes to as many as 22% of LBW births and up to 7% of premature births⁷⁵ in addition to causing other adverse health outcomes throughout a child's lifespan.⁷⁶ In Marion County, maternal smoking was associated with 24.6% of all LBW births and 35.3% of LBW births among white mothers (Table 7). Similarly, maternal smoking was associated with 19.6% of overall preterm births and 28% of preterm births to white mothers.

Smoking during pregnancy is a preventable risk factor for many adverse birth outcomes, including low birth weight, prematurity and poor fetal lung development. Fetal hypoxia and ischemia are the major smoking-related contributors to defects in fetal lung development, while nicotine impairs fetal lung maturation.⁷⁷

In Marion County, smoking is most prevalent among white mothers under age 24, about one-third of whom smoke (Figure 11). Black maternal smoking approximates general U.S. levels of smoking, while Hispanic expectant mothers' rate nearly meets HP 2020 objectives.

Table 7: Maternal Smoking Rates in Pregnancy and SIDS Deaths, 2010

	Marion County births	Black births	White births	Hispanic births	HP2020
All births (number)	12,429	3,701	5,636	2,313	
Percent of mothers who smoke (SMK) in pregnancy	14.5%	12.5%	21.8%	2.8%	98.6% abstain
LBW	9.4% (1,176)	12.9%	8.5%	7.0%	7.8%
SMK (%, number)	24.6% (289)	21.3% (102)	35.3% (170)	4.3% (7)	
Non-SMK (%, number)	75.4% (887)	80.5% (378)	64.7% (311)	95.7% (155)	
Premature birth rate	10.6% (1,323)	13.6%	9.7%	9.3%	11.4
SMK (%, number)	19.6% (259)	17.9% (90)	27.8% (153)	3.2% (7)	
Non-SMK (%, number)	80.4% (1064)	82.1% (412)	72.2% (398)	96.8% (209)	
SIDS deaths age 0-1 (2008-2012) rate per 1,000 births (number)	0.59 (27)	0.86 (16)	0.30 (9)	0.17 (2)	0.50 infants per 1,000 births

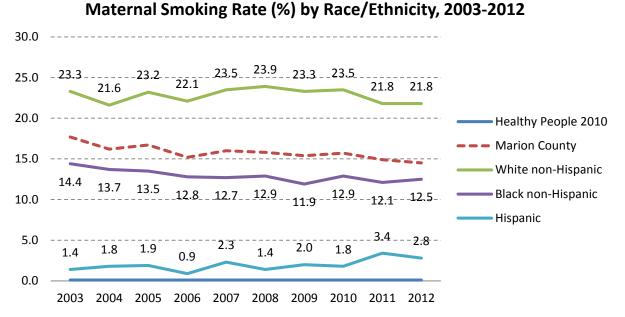
DR1887, Department of Epidemiology

Maternal smoking during pregnancy predisposes newborns to a 40% increased risk of wheezing, asthma⁷⁸ and increased upper and lower respiratory tract infections.⁷⁹ Several studies have indicated a higher risk for asthma incidence among premature and low birth weight infants.⁸⁰

Exposure to secondhand smoke increases the probability of lower respiratory tract infections, asthma and sudden infant death syndrome (SIDS). In a 2009 study of Marion County secondhand smoke exposure, maternal smoking played a role in 19% of SIDS deaths and 13.5% of the cases of low birth weight and very low birth weight infants.⁸¹

As a conservative estimate, 22% of LBW (259 births) and 7% of preterm births (93 births)⁸² in 2012 might have been averted if maternal smoking had been eliminated.

Figure 10: Marion County Maternal Smoking Rates by Race/Ethnicity, 2003-2012



DR1705, Department of Epidemiology

The county's maternal smoking rate exceeds the HP2020 objective of 1.4% by more than tenfold and is 50% higher than the national maternal smoking rate (14.5 vs. 10.4%). ⁸³ Parents are the major source of secondhand smoke for children, and exposure increases the risk of hospitalization for respiratory disease among infants. ⁸⁴ Eliminating or reducing exposure could prevent up to 13.3% of asthma hospitalizations in children. ⁸⁵

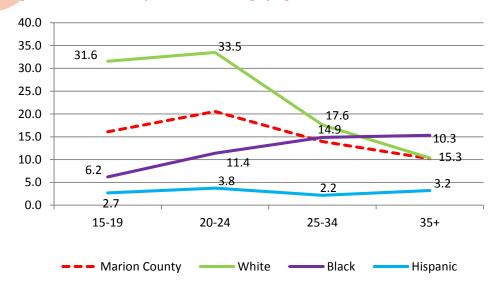


Figure 11: Marion County Maternal Smoking by Age and Race, 2012

DR1615, Department of Epidemiology

In one study, for every additional cigarette consumed per day in the third trimester of pregnancy, there was a reduction of approximately 27 grams in birth weight.⁸⁶ Even temporary smoking cessation by pregnant mothers leads to increased birth weights and lower neonatal costs, saving \$3 to \$17 for each dollar spent in prenatal smoking interventions.⁸⁷

The Medicaid program seeks to reduce all adult smoking, but whether this is targeted during prenatal care visits is unknown. Scheduled visits with a provider of at least a half hour for cessation services are billable under the program.⁸⁸

County prenatal care providers find that up to one-quarter of their pregnant clients smoke. While 40% of expecting women may reduce smoking during pregnancy, currently only 5% of them succeed in quitting. For many women, the high stress of pregnancy and the return to a smoking environment makes ongoing cessation difficult.

Many providers do not know that Medicaid pays for cessation counseling or where they can refer women for cessation care.⁸⁹ The Indiana Tobacco Quitline (telephone one-on-one cessation support) has been available only since January 2013 to persons under age 18 with medical provider referral (parental permission is not required).⁹⁰

The work group rated this issue as "high severity" and felt this issue has momentum from the 2012 expansion of the county's smoke-free ordinance. Subsequently, local anti-smoking coalitions are very motivated to lower maternal smoking statistics.

Moderately Ranked Issues

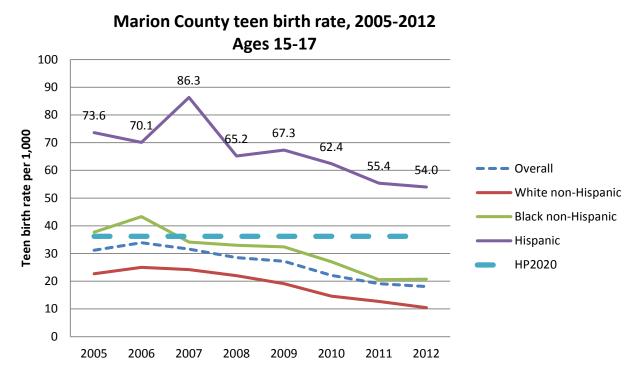
The work group found each of the following topics met four or five priority criteria. The issues are not presented in any order.

High Hispanic teen birth rates

Birth rates for ages 15-17 and 18-19 are listed as health indicators by the County Health Rankings, as young mothers not only are at higher risk for adverse birth outcomes but also at a greater risk of uncompleted education options and higher levels of poverty. In the 15-19 age range, Marion County's teen birth rate exceeds the County Health Rankings peer urban range by six percentage points. However, mirroring national trends, Marion County's teen birth rates have declined over the past decade, especially among women under age 18.

The exceptions to this trend are a slower rate of decline in 18- to 19-year-olds (post high school age) and an earlier fertility pattern among young Hispanic women. Hispanic teen births, including 237 births to mothers ages 15-17 in 2010, make up 17% of total county births. Hispanic teen birth rates have declined over the past several years at a slower rate than other groups (Figure 12) and stand above the HP2020 objective and at twice that of the national rate of 32.3 per 1,000 Hispanic women ages 15-17. 92

Figure 12: Marion County Birth Rates for Mothers Age 15-17, 2005-2012



DR1759, Department of Epidemiology

Eskenazi, IU-Methodist and St. Vincent hospitals together deliver over 92% of the county's Hispanic births (56.5%, 19.3%, and 16.2%, respectively) (Figure 13). Hispanic women generally have healthy birth outcomes and a lower maternal risk profile (rates of smoking and underlying chronic conditions) compared to other teen mothers. Language and financial and social barriers may restrict access to pregnancy prevention and prenatal and postpartum care. Also, there is no guarantee that the delivery site will be where the young mother and child will ultimately establish a primary care "medical home."

Hispanic adolescents have high rates of early and rapid repeat fertility⁹³ and are more likely to leave school to care for their infants.⁹⁴ MCPHD's Healthy Start program provides, through a pilot grant, a case manager who works exclusively with Hispanic mothers. Case managers from the department's Future Promises program guide black and Hispanic teen mothers through parenting and high school completion. The focus of this case management is to prevent subsequent adolescent pregnancies while helping young parents finish secondary education.

With many community resources focused on the issue, the work group is hopeful but fears coordination may be lacking between public health and health care resources.

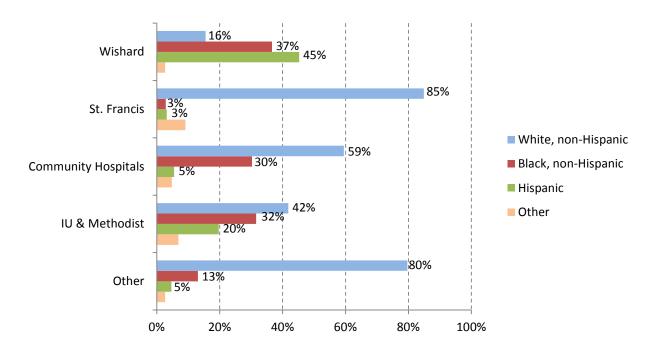


Figure 13: Marion County Births by Ethnicity and Hospital, 2008-2012

DR1795, Department of Epidemiology Note: Wishard Hospital is now Eskenazi Health

High asthma hospitalization rates, ages 0-4

Asthma is the primary cause of hospitalization for young children ages 1 to 4 (Figure 14). Marion County asthma admission rates are rising, and the county's rate for ages 5 and under

(46.5 per 10,000 population in 2008) exceeds the nation's rate and is 2.5 times the HP2020 objective. 95

The leading cause for hospitalizations of toddlers ages 1 to 4 was respiratory conditions led by asthma. ⁹⁶ Asthma hospitalizations for young children also reflect a high racial disparity, with black children under age 5 four times more likely to be hospitalized for asthma than their white counterparts (Figure 15). Even when adjusting rates to control for access to care, use of controller medications, asthma education and specialist care, researchers find black children are still twice as likely to be hospitalized for asthma than white children. ⁹⁷

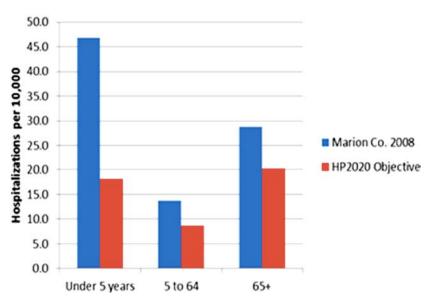


Figure 14: Marion County Asthma Hospitalizations and HP2020 Objectives

DR1604, Department of Epidemiology; and HP2020, Asthma Objective RD-2

Children under age 5 exhibited the highest monthly emergency department (ED) use ⁹⁸ of all age groups. Seasonal patterns in ED use also appeared, ranging from four (mid-summer) to 12 visits (autumn) per 10,000 population. These rates are higher than for other child and adult age groups (Figure 16).

Marion County is the third highest among Indiana counties in asthma ED use rates, at 83.6 visits per 10,000 population (7,567 visits total) in 2009. More than 31,000 asthma-related ED visits occurred in Indiana in 2009, or 49.8 visits per 10,000 population, ⁹⁹ at a cost of approximately \$46 million.

High asthma hospitalization rates are recognized as a costly issue for young children, according to the Indiana Joint Asthma Coalition. Medicaid pays for 29% of all asthma admissions, and children and youth make up 40% of county Medicaid asthma discharges. Total Medicaid cost in

2009 for asthma care in local acute care hospitals totaled \$8.8 million, 100 or an average of \$11,925 per admission.

Medicaid Managed Care Organizations use low rates of asthma hospitalization as a quality indicator of a well-managed chronic disease. However, outpatient asthma education on emergency inhalers and other therapies is not billable in Medicaid pediatric care. Educational intervention often occurs during an in-patient hospital stay, but this circumstance is not the most conducive to effective intervention.

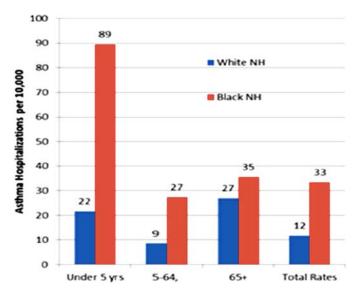
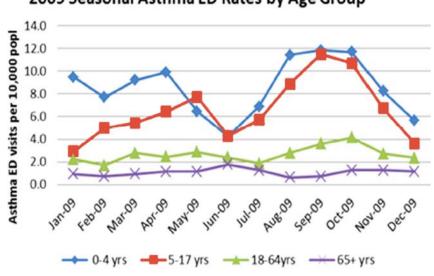


Figure 15: Marion County Asthma Hospitalizations by Race, 2008

DR1604, Department of Epidemiology





2009 Seasonal Asthma ED Rates by Age Group

DR1609, Department of Epidemiology; ESSENCE data on chief complaint limited to "asthma"

The work group felt this issue deserves attention, though the maternal smoking risk factor superseded it. However, maternal smoking is not only a major environmental and prenatal risk factor, it also impacts child asthma incidence and severity.

Domestic violence and rates of injury and death

The work group found the county's five-year death rate due to homicide in infants and toddlers to be nearly twice that of the U.S. (4.0 vs. 2.3 per 100,000 population) (Table 8). While these rates are subject to change due to small absolute numbers, other information indicates that further attention to this issue is required.¹⁰²

Table 8: Marion County Leading Causes of Death, Ages 1 to 4, 2005-2009

Rank	Marion County rate per 100,000 (number of deaths)	U.S. rates ¹⁰³ (2008)
1	Accidents 6 (18)	Accidents 8.4
2	Homicide 4 (12)	Homicide 2.3
3	Congenital malformations 4 (12)	Congenital malformations 3.0
4	Cancer 3 (8)	Cancer 2.1
5	Heart disease 1 (3)	Heart disease 1.0
Total	26 (75)	26.5
HP2020	25.7 per 100,000	

DR1934 Department of Epidemiology

The Marion County Child Fatality Review Team¹⁰⁴ identified 174 deaths occurring in Marion County to children ages 0-4 between 2007 and 2011 (Table 9) but noted that not all victims may have been county residents. Thirty-one of those deaths were homicides, based on examination of all available health, social services, police and coroner's records. More deaths in this age group merit the involvement of Child Protective Services and/or law enforcement than in any

other age group. Of the 140 deaths for ages 0-4 investigated by the Review Team, 87% were deemed preventable.

In 2008, Marion County had a substantiated case rate of child abuse/neglect of 22.1 per 1,000 children under age 18 (over 3,800 cases) in state Child Protective Services reports. It exceeded Indiana's rate of 15.6 per 1,000 and that for other Indiana urban counties, but it was not the highest county rate in the state.

Cases of substantiated child neglect almost doubled from 2006 to 2010 (rising 95% from 1,958 to 3,826 cases), ¹⁰⁵ while sexual and physical abuse case numbers decreased or were unchanged. ¹⁰⁶ Marion County has a rate of CPS substantiated cases of abuse/neglect that is twice that of the nation, with 10 cases per 1,000 children ages 0-17 in 2010. ¹⁰⁷

Table 9: Marion County Deaths Ages 0-4 Identified by Child Fatality Review Team, 2007-2011

	Number of cases	Percent of age 0-4 investigated deaths
Total deaths	174	
White	79	45.4
African-American	68	39.0
Other	27	15.5
Prior Child Protective Services involvement	63	36.2
Law enforcement involvement	45	25.9
Accidental	63	36.2
Natural	55	31.6
Homicide	31	17.8
Undetermined	25	14.4

Source: Marion County Child Fatality Review Team, 2007-2011

The work group felt this is an issue that doesn't seem to be "on the radar" of most community-based coalitions (except for the Child Fatality Review Team) or is well-coordinated between providers. Hospitals are aware of the burden of child injury-related ED visits and hospitalizations, but this impact may not reach broader public awareness. A child's death is a severe outcome. Child deaths are a major contributor to the county's Years of Potential Life Lost (YPLL) and they appear to be increasing.

Access to healthy food and prenatal supplements

Public coalitions support healthy food access, especially in poorer neighborhoods. The work group felt efforts may be poorly coordinated across several programs with a lack of focus on high-risk pregnant mothers and young families.

Food stamps

As of June 2012, Marion County had over 90,625 households on the Supplemental Nutrition Assistance Program (SNAP), with an average benefit of \$300 per month per household. This represents an average growth of 10% per year between 2010 and 2012.

One measure of economic well-being is a family's ability to be "food secure," or having consistent access to food sufficient for all family members. The U.S. Department of Agriculture says that about 20% of households with children nationally were food insecure in 2011, virtually unchanged from 2009. However, food insecurity varied by income; 41% of households with children below the poverty line were food insecure.

The prevalence of food insecurity increased among women living alone and households headed by non-Hispanic whites. ¹⁰⁹ The Community Health Assessment Survey (2012) of households with children under age 5 found 35.6 percent of these households reported they "occasionally" or "often" could not afford enough food to eat. ¹¹⁰

Women, Infants and Children (WIC) program

MCPHD serves low-income (under 200% of FPL) mothers and children under age 5, identifying low-income pregnant women and infants with nutritional deficiencies, poor growth patterns, nutritional risk factors for chronic disease and food allergies. Food package vouchers for groceries and farmers' markets are tailored to mothers' and infants' health status and make healthy foods more affordable for children under age 4.

Of the women ages 15-50 giving birth from 2008 to 2010, 58% were living at 200% of FPL or below. ¹¹¹ WIC is estimated to have enrolled nearly 36% (2,789) of pregnant women in poverty during 2010-2011 and about half (7,170) of the infants born in 2010. In addition, 15,872 children ages 1 to 4 who live in poverty were covered by WIC. Nearly one-fourth (22%, or 1,215) of WIC mothers who are enrolled at delivery initiate breastfeeding, and over half (56.1%) of

infants at the time of delivery are covered by the program (Table 10). WIC total enrollment in the county has increased from 41,000 in 2006 to over 55,000 in 2010. 112

WIC has been successful in other settings in improving birth and postnatal outcomes. For example, the WIC program in Hamilton County, Ohio, found WIC enrollees had fewer premature births and lower infant mortality rates than babies born to moms of similar economic and demographic backgrounds. However, the ability of MCPHD to evaluate its WIC program for birth outcome effects is limited. All program data are collected by the Indiana State Department of Health (ISDH) and only enrollment summary reports are available to program managers.

Prenatal Supplements

Prenatal supplements have had a substantial impact in terms of preventing LBW births and congenital malformations. ¹¹⁴ Prenatal vitamin supplements are offered gratis by major pharmacies to women who have a physician's prescription (especially if Medicaid pays) and confirmed pregnancy status. However, it is unclear whether low-income mothers are made aware of this benefit. The prescription requirement also may be a barrier to these women.

Access to healthy food is not a pregnancy-only issue. Removing the requirement for a script for prenatal vitamins may result in rapid benefit depending on whether the requirement is a Medicaid payment rule or a pharmacy rule. Elimination of this requirement, which is expensive for the pregnant patient, would be a low-cost intervention that would be cost-effective in terms of birth outcomes and administrative expenses.

The work group felt MCPHD can make a significant difference, given the current momentum among area coalitions, in coordinating efforts directed toward food access to low-income families. There are many initiatives focused on healthy food access in poorer neighborhoods, but these may not reach the pregnant and postpartum populations.

Issues to Monitor

Three issues warranted further discussion among interested coalitions and MCPHD partners, including data monitoring and evaluation of trends.

Low rates of black breastfeeding initiation

Initiation of breastfeeding among black infants has risen recently, from 47% in 2003 to 63.5% in 2012. While this increase represents a clear advantage to higher risk infants, there is still a disparity with Hispanic and white rates, and the black rate is still below the HP 2020 objective of 75% overall (Figure 17).

New coalitions have arisen to address this issue, which is targeted by MCPHD's WIC and the Indiana Healthy Start (IHS) programs. 115 St. Vincent and Methodist hospitals, which deliver a

large proportion of black infants¹¹⁶ (22% and 24% of their total births, respectively), are certified as "baby-friendly" lactation-promoting birth centers. 117

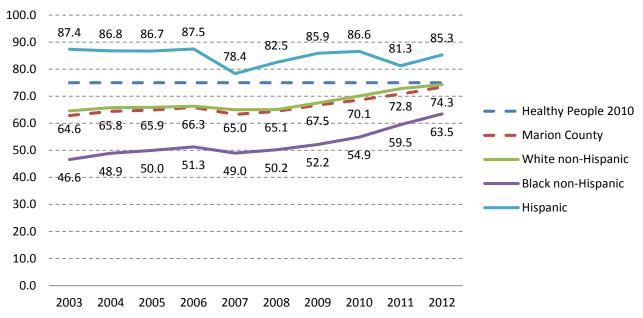
Breastfeeding improves an infant's immune system and healthy growth trajectory in the first months of life. ¹¹⁸ It promotes healthy maternal and child weights, lowers *otitis media* rates in infants and lowers breast cancer rates in women.

Work group members raised several factors that may be related to lower breastfeeding initiation and continuation among black mothers compared to other groups. They may need to return to work sooner after delivery if employed and have less support for breastfeeding from family members. Those employed in small businesses and service industries may have less supportive work environments. Policy changes in these work environments would help women who plan on breastfeeding after maternity leave.

There is a real need for qualified African-American peer counselors to assist pre- and postpartum women, and the black community is gathering momentum for this with a new coalition addressing breastfeeding.

Figure 17: Marion County Breastfeeding Rates by Race, 2003-2012

Breastfeeding rate (%) by race/ethnicity, 2003-2012



DR1705, Department of Epidemiology

Rising pedestrian accidents among children ages 1-4

The leading cause of death among 1- to 4-year-olds is accidental injury. The Marion County death rate is somewhat lower than the national average: 6 vs. 8.4 per 100,000 population, ¹²⁰ or 18 deaths over the five-year period 2008-2012 (Table 8). The 1-4 group has one of the lowest overall mortality rates in Marion County. Both the county and U.S. overall rates approach the HP2020 target of 25.7 per 100,000. ¹²¹

These deaths, however, represent a very severe and preventable outcome. The Marion County Child Fatality Review Team finds 75% of the deaths in children under 4 years old to be preventable.

Most deaths in this age group are caused by motor vehicle accidents and the home safety threats of poisoning by medications and fire-related hazards. In children under 1 year old, Safe Sleep messaging, such as "Back to Sleep" and other initiatives, reduced sleep-related smothering deaths. Use of car safety seats is mandated by Indiana law and is now practiced by 90% of drivers with small children. 122

However, pedestrian deaths in this age group are increasing as young children are struck by moving vehicles while on driveways or sidewalks. This is in spite of general community awareness generated by Riley Hospital's KIDS DART campaign.

This cause doesn't require policy interventions, such as requiring child car seats or seat belt restraint use, 124 as such laws already exist. Over time, other policy gains in the county, such as the Complete Streets ordinance passed by the City-County Council emphasizing streets for all users, should promote environmental changes that will lessen the risk of pedestrian deaths. Meanwhile, closer attention may be needed to determine if there are specific streets, intersections, situations or neighborhoods where young children may be at higher risk.

High birth rates for women ages 18-19

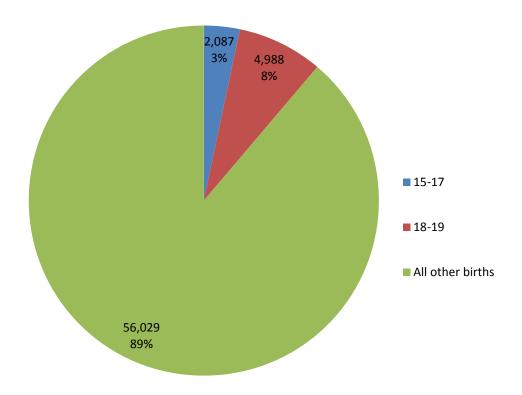
Compared to five urban peer counties, Marion County has the highest birth rate among 15- to 19-year-olds, which is also almost twice the national rate (66 vs. 34.4 per 10,000). The county's birth rate for ages 15-17 is closer to that of the U.S. (Table 10). Like younger teen births, birth rates among 18- to 19-year-old mothers are declining, but the rate has declined more slowly than for births to 15-17 year-old women. Nationally, teen births account for \$3 billion in direct medical costs to care systems each year. 125

Births to 18- to 19-year-olds comprise 8% of county births (Figure 18). This proportion of older teen births places Marion County above the nation and peer urban counties. Health outcomes are usually good for the infant and mother, but an early first birth may increase the chance that

the mother will not complete her education and instead enter the ranks of the low income and unemployed.

Figure 18: Adolescent Births: Marion County, 2008-2012

Births to mothers, by age: Marion County 2008-2012



DR1759, Department of Epidemiology

Table 10: Marion County and U.S. Birth Outcomes and Risk Factors

	Marion County 2012	U.S. 2010
Infant deaths (per 1000)		
Total IMR	10.3	6.19
Black IMR	13.2	11.61
White IMR	5.5	5.19
Teen birth rates		
Age 15-19	64.5	34.4
Age 15-17	18.1	17.3
Birth outcomes		
Percent C-section	30.1	32.3
Percent WIC	56.1	
Percent breastfed	73.4	68.6
Percent Medicaid	62.8	
Percent LBW	9.4	8.1 (2008)
Percent maternal smoking	14.5	10.4 (2007)
Percent first trimester PNC	78.1	70.8 (2007)
Percent premature	10.6	12.3
Percent unintended	48 (Indiana 2006)	49 (2006)

Sources: Unintended pregnancies: Guttmacher Institute; Murphy SL, Xu JQ, Kochanek KD. Deaths: Preliminary Data for 2010. National Vital Statistics Reports; vol 60 no 4. Hyattsville, MD: National Center for Health Statistics. 2012.; DR1705 and DR1759 MC and U.S. birth outcomes, Department of Epidemiology.

MCPHD's Healthy Start program provides services to pregnant teens and follows mothers until they are 24 years old if their children are under age 2.¹²⁶ The Future Promises program enrolls young mothers if they are still attending high school. A gap may exist if a 19-year-old mother is not in school and has a 3-year-old child, in which case she would qualify for neither program.

The work group found that policy changes may be needed. Young women with children are currently ineligible for child care vouchers while attending school. This leads some to leave school when they have no safe setting for child care and increases the risk of a repeat pregnancy. Page 128

Summary and Conclusions

The work group gave highest priority to issues related to birth outcomes (such as low birth weight and prematurity) as well as to the high-risk Medicaid maternal population and the maternal smoking risk factor. All have short- and long-term consequences for several populations, marking them as critical public health issues for this age group.

In addition, national, state and county efforts have spearheaded programs aimed at these vulnerable individuals. With health care changes brought about by the Affordable Care Act, this is a good time to tackles these priorities.

Acknowledgments

The Epidemiology staff would like to thank the work group and other contributors for their enthusiasm, expertise and willingness to undertake difficult topics in a very short period of time. We also thank Anna Gabbard, public health graduate student, IU Bloomington, for her social determinants of health graphics and contributions to the early meetings; Ms. Barbara Wilder of the MDWise, Inc. MCO for her insights on the Medicaid population; Ms. Peggy Serbey, director, Department of Child Services, for information on the Child Protective Services population; Shawn Wellman for information on the MCPHD WIC program and eligibility; Dr. Steven Downs, M.D., director, Children's Health Service Research Center, for his topical and membership references; and Dr. Greg Wilson, M.D., for additional references used in this publication. Our thanks also to Steven Jacobs, who facilitated meeting schedules, lists of key participants and other tasks by the dozens.

Appendix 1: Perinatal to Age 4 Work Group

Name: Representing: (*CHA steering committee)

Johnnie Washington* MDWise, Inc. Medicaid MCO

Jean Caster, MD* Indiana Academy of Pediatrics

Katie Humphries,* Afia Griffith* St. Vincent Health Services

Robin Minor, Cheryl Davis Front Porch Alliance; Indy Hunger Network

Gregory Wilson, MD IUPUI Fairbanks School of Public Health

Mary Alexander MCPHD Healthy Start

Marlene Dodson Indiana Latino Institute

Lynne Arrowsmith MCPHD Tobacco Cessation

Peggy Serbey Indiana Child Protective Services

Dawn Daniels Riley Child Trauma Registry

Roberta Hibbard, MD Child Fatality Review Team, Riley Hospital

Caitlin Priest Indiana Perinatal Network

M. Morlan March of Dimes

Jennifer H Walthal, MD EMS, Riley Hospital

Wanda Spann-Roddy MCPHD Future Promises

Lynn Baldwin Nurse Family Practice/Goodwill Inc.

David Weaver, MD Eskenazi Health Services/IUMG

Maisha Wade MCPHD Healthy Start

Leslie Power Indianapolis Parks Dept. Director of Programs

Contributors:

Shawn Wellman MCPHD WIC Program

Barbara Wilder MDWise MCO

Steven Downs, MD Children's Health Services Research Center

Staff:

Millicent Fleming-Moran, PhD

Jessica Craig, MPH

Neela Gala

Appendix 2: 2012 County Health Rankings

Health Rankings	Health Rankings HP 2020 Objective National Average		Peer County Range ^a	Marion v. Peers	
% Uninsured	0%	15.50%	14%-18%	X 18%	
Ratio of population to Primary Care Physicians			589:1-936:1	602:1	
Preventable hospital stays (ACSC Rate)			62-92	74	
Diabetic screening %HbA1c	71%	65%	83%-87%	81%	
	Health Behaviors				
% Adult smokers	12%	17%	20%-24%	X 26%	
% Obese Adults	31%	27.20%	27%-34%	30%	
% Adults with Physical inactivity	33%	24.20%	25%-29%	26%	
% Excessive drinking	25.30%	28.00%	19%-23%	16%	
Motor vehicle crash death rate	12.4	13.8	9-16	12	
STI Rate per 100,000 (Chlamydia)	OBJ IN DEV	586.7	568-1040	753	
Teen birth rate (15-19)****	36.2c	41.2	47-61	X 67	
	Health Outcomes				
	Mortality				
			8,045-		
Premature death YPLL RATE		6,951	10,061	9,229	
	Morbidity				
% Poor or fair health	HRQOL in DEV	15.9%	12%-18%	18%	
Poor physical health days	HRQOL in DEV	3.6	3.0-4.0	3.6	
Poor mental health days	HRQOL in DEV	3.5	2.9-4.2	3.8	
% Low birth weight	8%	8.20%	9.0%-10.5%	9.20%	

a. Peer counties for Marion County: Hamilton Co., OH (Cincinnati); Franklin Co., OH (Columbus); Milwaukee Co., WI; Jefferson Co., KY (Louisville) and Davidson Co., TN (Nashville).

http://www.countyhealthrankings.org/#app/indiana/2012/marion/county/1/overall

Source: County Health Ranking website.

b Teen birth rate for HP2020 is for ages 15-17, while CHR website is for ages 15-19, per 1,000 women.

c. Of all counties in website.

 $d.\ HP2020\ Objectives: \underline{http://www.healthypeople.gov/2020/topicsobjectives 2020/default}$

e. Premature Death, Years of Potential Life Lost, before age 75(YPLL): Indicator selected by RWJF County Health Rankings website, Marion County, 2012.

Appendix 3a: Marion County Infant Mortality by Cause of Death, 1998-2002 and 2008-2012

Rank	Marion County rate per 100,000 (number of deaths) 2008-2012	Marion County rate per 100,000 (number of deaths) 1998-2002	Rate Ratio
1	Short gestation/LBW 258 (163)	Short gestation/LBW 203 (113)	1.27
2	Congenital malformations 180 (114)	_	
3	Maternal complications of pregnancy 73 (46)	Accidents 70 (39)	-
4	Accidents 65 (41)	Maternal complications of pregnancy 40 (22)	1
5	SIDS 43 (27)	Sepsis 36 (20)	ı
Total	1,031 (652) 10.3 per 1,000	912 (507) 7.38 per 1,000	1.13
HP2020		6.0 per 1,000	

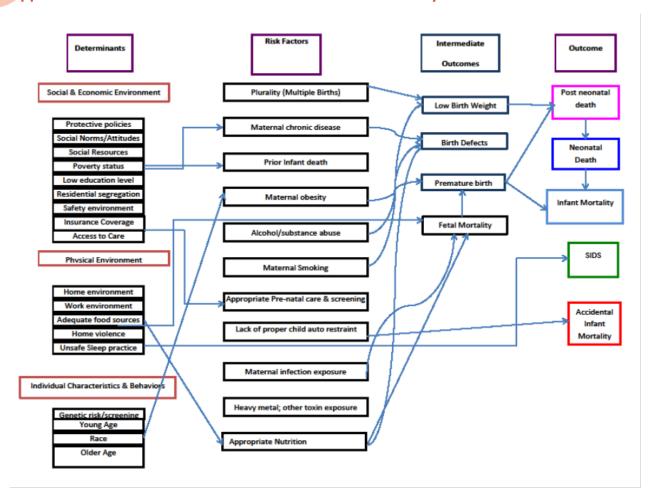
Source: DR1932

Appendix 3b: Marion County Child 1-4 Mortality by Cause of Death (1998-2002) and (2008-2012)

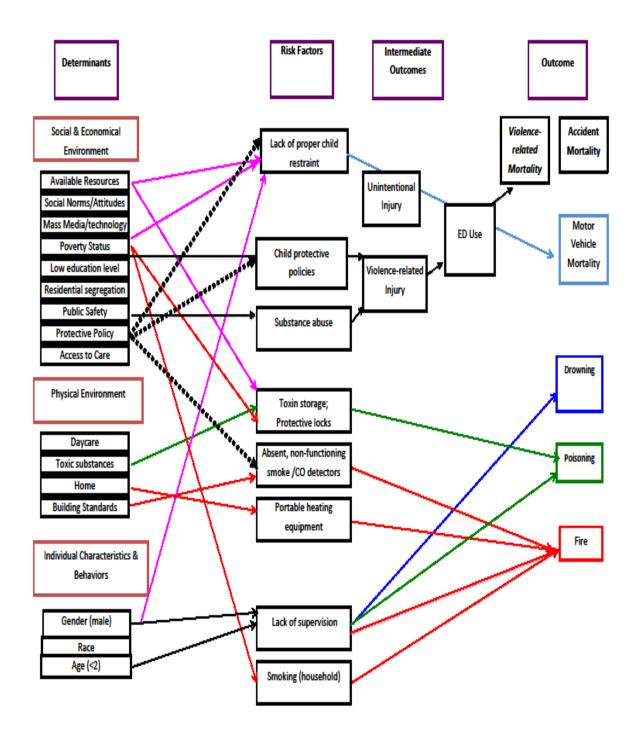
Rank	Marion County rate per 100,000 (number of deaths) 2008-2012	Marion County rate per 100,000 (number of deaths) 1998-2002	Rate ratio
1	Accidents 6 (18)	Accidents 17 (24)	0.35
2	Assault (homicide) 4 (12)	Assault (homicide) 9 (12)	0.44
3	Congenital malformations 4 (12)	Congenital malformations 8 (11)	0.5
4	Cancer 3 (8)	Cancer 4 (5)	0.75
5	Heart Disease 1 (3)	Conditions originating in the perinatal period 2 (3)	-
Total	26 (75)	60 (84)	0.43

Source: DR1932

Appendix 4: Social Determinants of Health: Infant Mortality



Appendix 5: Social Determinants of Health: Child Injuries in Ages 0-4



Appendix 6: Marion County Women's Fertility, 2008-2010

		Women with births in the past 1		e past 12 months	
	Total	TOTAL	Number	Percentage	Rate per 1,000
Women 15 to 50 years	240,645		13,267		55
15 to 19 years	30,906		1,210	9.1%	39
20 to 34 years	108,607		10,086	76.0%	93
35 to 50 years	101,132		1,971	14.9%	19
RACE AND HISPANIC OR LATINO ORIGIN					
One race:					
White	151,602		8,052	60.7%	53
Black or African-American	68,403		3,854	29.0%	56
Hispanic or Latino	20,592		1,665	12.5%	81
EDUCATIONAL ATTAINMENT	1		•		
Less than high school graduate	54,111		3,276	24.7%	61
High school graduate (includes equivalency)	58,174		3,289	24.8%	57
Some college or associate's degree	70,659		3,703	27.9%	52
POVERTY STATUS IN THE PAST 12 MONTHS					
Women 15 to 50 years for whom poverty status is determined:	236,052		13,198		56
Below 100 percent of poverty level	51,268		4,541	34.4%	89
100 to 199 percent of poverty level	51,802		3,148	23.9%	61
200 percent or more above poverty level	132,982		5,509	41.7%	41
PUBLIC ASSISTANCE INCOME IN THE PAST 12	MONTHS				
Women 15 to 50 years:	240,645		13,267		55
Received public assistance income	9,850		1,407	10.6%	143
Source: S1301: FERTILITY	ı		ı		
2008-2010 American Communit	y Survey 3-Year I	Estima	ates		
Marion County					

Appendix 7: Healthy People 2020 Summary of Objectives: Maternal, Infant and Child Health

Reduce infant deaths.

MICH-1.1 Fetal deaths at 20 or more weeks of gestation. Target: 5.6 fetal deaths per 1,000 live births and fetal deaths. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-1.2 Fetal and infant deaths during perinatal period (28 weeks of gestation to 7 days after birth). Target: 5.9 Perinatal deaths per 1,000 live births and fetal deaths. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-1.3 All infant deaths (within 1 year). Target: 6.0 infant deaths per 1,000 live births. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-1.4 Neonatal deaths (within the first 28 days of life). Target: 4.1 neonatal deaths per 1,000 live births. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-1.5 Post-neonatal deaths (between 28 days and 1 year). Target: 2.0 postneonatal deaths per 1,000 live births. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-1.6 Infant deaths related to birth defects (all birth defects). Target: 1.3 infant deaths per 1,000 live births. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-1.7 Infant deaths related to birth defects (congenital heart defects). Target: 0.34 infant deaths per 1,000 live births. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-1.8 Infant deaths from sudden infant death syndrome (SIDS). Target: 0.50 infant deaths per 1,000 live births. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-1.9 Infant deaths from sudden unexpected infant deaths (includes SIDS, Unknown Cause, Accidental Suffocation, and Strangulation in Bed). Target: 0.84 infant deaths per 1,000 live births. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Reduce the rate of child deaths.

MICH-3.1 Children ages 1 to 4 years. Target: 25.7 deaths per 100,000 population. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Reduce cesarean births among low-risk (full-term, singleton, vertex presentation) women.

MICH-7.1 Women giving birth for the first time. Target: 23.9 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-7.2 Prior cesarean birth. Target: 81.7 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-8.1 Low birth weight (LBW). Target: 7.8 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-8.2 Very low birth weight (VLBW). Target: 1.4 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Reduce preterm births.

MICH–9.1 Total preterm births. Target: 11.4 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-9.2 Late preterm or live births at 34 to 36 weeks of gestation. Target: 8.1 percent. Target setting method: 10 percent improvement. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-9.3 Live births at 32 to 33 weeks of gestation. Target: 1.4 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-9.4 Very preterm or live births at less than 32 weeks of gestation. Target: 1.8 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Increase the proportion of pregnant women who receive early and adequate prenatal care.

MICH-10.1 Prenatal care beginning in first trimester. Target: 77.9 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-10.2 Early and adequate prenatal care. Target: 77.6 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Increase abstinence from alcohol, cigarettes and illicit drugs among pregnant women.

MICH–11.1 Alcohol. Target: 98.3 percent. (The percentage of pregnant females ages 15 to 44 years who reported abstaining from alcohol in the past 30 days in 2007–2008.) Data source: National Survey on Drug Use and Health (NSDUH), SAMHSA.

MICH-11.2 Binge drinking. Target: 100 percent. Data source: National Survey on Drug Use and Health (NSDUH), SAMHSA.

MICH–11.3 Cigarette smoking. Target: 98.6 percent. Data source: National Vital Statistics System (NVSS), CDC, NCHS.

MICH-11.4 Illicit drugs. Target: 100 percent. Data source: National Survey on Drug Use and Health (NSDUH), SAMHSA.

MICH-14: Increase the proportion of women of childbearing potential with intake of at least 400 μg of folic acid from fortified foods or dietary supplements. Target: 26.2 percent. Data source: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

MICH-15: Reduce the proportion of women of childbearing potential who have low red blood cell folate concentrations. Target: 22.1 percent. Data source: National Health and Nutrition Examination Survey (NHANES) CDC, NCHS.

MICH-16.1 (Developmental)

MICH-16.2 Took multivitamins/folic acid prior to pregnancy. Target: 33.1 percent. Data sources: Pregnancy Risk Assessment Monitoring System (PRAMS), CDC, NCCDPHP; California's Maternal and Infant Health Assessment (MIHA), Maternal, Child and Adolescent Health Department, California State Health Department.

MICH-16.3 Did not smoke prior to pregnancy. Target: 85.4 percent. Data sources: Pregnancy Risk Assessment Monitoring System (PRAMS), CDC, NCCDPHP; California's Maternal and Infant Health Assessment (MIHA), Maternal, Child and Adolescent Health Department, California State Health Department.

MICH-16.4 Did not drink alcohol prior to pregnancy. Target: 56.4 percent (in the 3 months prior to pregnancy). Data sources: Pregnancy Risk Assessment Monitoring System (PRAMS), CDC, NCCDPHP; California's Maternal and Infant Health Assessment (MIHA), Maternal, Child and Adolescent Health Department, California State Health Department.

MICH-16.5 Had a healthy weight prior to pregnancy. Target: 53.4 percent. Data sources: Pregnancy Risk Assessment Monitoring System (PRAMS), CDC, NCCDPHP; California's Maternal and Infant Health Assessment (MIHA), Maternal, Child and Adolescent Health Department, California State Health Department.

MICH-16.6 (Developmental)

MICH-17.1 Reduce the proportion of women ages 18 to 44 years who have impaired fecundity. Target: 10.8 percent. Data source: National Survey of Family Growth (NSFG), CDC, NCHS

Postpartum health and behavior.

MICH-20: Increase the proportion of infants who are put to sleep on their backs. Target: 75.9 percent. Data sources: Pregnancy Risk Assessment Monitoring System (PRAMS), CDC, NCCDPHP; California's Maternal and Infant Health Assessment (MIHA), Maternal, Child and Adolescent Health Department, California State Health Department.

Increase the proportion of infants who are breastfed.

MICH-21.1 Ever breastfed. Target: 81.9 percent. Data source: National Immunization Survey (NIS), CDC, NCIRD, and NCHS.

MICH-21.2 At 6 months. Target: 60.6 percent. Target setting method: modeling/projection.

MICH-21.3 At 1 year. Target: 34.1 percent. Data source: National Immunization Survey (NIS), CDC, NCIRD, and NCHS.

MICH-21.4 Exclusively through 3 months. Target: 46.2 percent. Data source: National Immunization Survey (NIS), CDC, NCIRD, and NCHS.

MICH-21.5 Exclusively through 6 months. Target: 25.5 percent. Data source: National Immunization Survey (NIS), CDC, NCIRD, and NCHS.

MICH-22: Increase the proportion of employers that have worksite lactation support programs. Target: 38 percent. Data source: Employee Benefits Survey, Society for Human Resource Management (SHRM).

MICH-23: Reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life. Target: 14.2 percent. Data source: National Immunization Survey (NIS), CDC, NCIRD, and NCHS.

MICH-24: Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies. Target: 8.1 percent. Data source: Breastfeeding Report Card, CDC, NCCDPHP.

MICH-25-30 (Objectives continue with Disability and Other Impairments; Health Services.)

Source: HP2020 Maternal, Infant and Child Objectives http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health

Sources

¹ From: Healthy People.gov http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39 "Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Conditions (e.g., social, economic, and physical) in these various environments and settings have been referred to as 'place.' In addition... the patterns of social engagement and sense of security and well-being are also affected by where people live. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins. Understanding the relationship between how population groups experience 'place' and the impact of 'place' on health is fundamental to the social determinants of health—including both social and physical determinants." ² HP2020, Maternal and Child Health 10.2, Adequate prenatal care: 77.9% of women are seen within the first trimester of care.

³ U.S. Dept. of Health and Human Services, Office of Women's Health. Fact Sheet on Prenatal Care. 2012. http://www.womenshealth.gov/publications/our-publications/fact-sheet/prenatal-care.pdf

⁴ MacDorman M, and Mathews TJ, The Challenge of Infant Mortality: Have We Reached a Plateau? Public Health Rep. 2009 Sep-Oct; 124(5): 670–681. PMCID: PMC2728659.

⁵ HP2020 MICH-10.1 Prenatal care in first trimester of pregnancy; MICH-10.2 Early and adequate prenatal care, see Appendix 6: Healthy People 2020 Summary of Objectives:

⁶ Institute of Medicine, Committee on Understanding Premature Birth and Assuring Healthy Outcomes and Board on Health Sciences Policy. (2005). Preterm birth: Causes, consequences, and prevention. R.E. Behrman and A.S. Butler. (Eds). Washington, DC: The National Academies Press. Retrieved from http://www.iom.edu/Reports/2006/Preterm-Birth-Causes-Consequences-and-Prevention.aspx

⁷ Department of Epidemiology, DR1615. U.S. premature birth rates were 11.5 (2012)

http://www.healthypeople.gov/2020/data-search/Search-the-Data?nid=4906

⁸ Marion County has a death rate for short gestation/LBW infants that is twice that for the nation, 247 deaths versus 113.7 per 100,000 (RR 2.2).

⁹ Department of Epidemiology, DR1615.

¹⁰ Brown RW, Hanrahan JP, Castile RG, Tager IB. Effect of maternal smoking during pregnancy on passive respiratory mechanics in early infancy. Pediatr Pulmonol, 1995;19:23–28.

¹¹ Dik, N, Tate, RB, Manfreda, J, Anthonisen, NR, Risk of Physician-Diagnosed Asthma in the First 6 Years of Life. Chest. 2004; 126:1147–1153.

¹² Pattenden S, Antova, Neuberger M. Parental smoking and children's respiratory health: independent effects of prenatal and postnatal exposure. Tobacco Control 2006;15:294–301.

¹³ Ph Kum-Nji, Meloy L, Herrod HG. Environmental tobacco smoke exposure: prevalence and mechanisms of causation of infections in children. Pediatrics 2006;117(5):1745–1754.

¹⁴ Willems Van Dijk JA, Anderko, L. and Stetzer, F. The Impact of Prenatal Care Coordination on Birth Outcomes JOGNN, 40, 98-108; 2011. DOI: 10.1111/j.1552-6909.2010.01206.x.

¹⁵ Lynne Arrowsmith, personal communication February 2013. The Medicaid program does pay for smoking cessation consultations with a provider. However, cessation medication is generally not approved for use during pregnancy. It is unclear whether the MCOs approve group sessions with mothers who want to quit smoking.

¹⁶ See note 1.

¹⁷ From: Stats Indiana-- 2010 Census Data, Counties, U.S. Census Bureau on February 10, 2011. http://www.stats.indiana.edu/topic/census.asp

¹⁸ RWJF County Health Rankings website, Marion County, 2012.

http://www.countyhealthrankings.org/#app/indiana/2012/marion/county/1/overall

¹⁹ DHHS, Community Health Status Indicators (CHSI) 2009 (most recent year), Marion County, IN. http://communityhealth.hhs.gov/Demographics.aspx?GeogCD=18097&PeerStrat=3&state=Indiana&county=Mario n Peer Midwestern urban counties are Louisville (Jefferson Co.) KY, Cincinnati (Hamilton Co.) OH, Columbus (Franklin Co) OH, Nashville (Davidson Co.) TN and Milwaukee (Milwaukee Co.) WI, as suggested by the CHSI website, above.

- ²⁰ QT-P2-Geography-Marion County, Indiana: Single Years of Age and Sex: 2010, 2010 Census Summary File 1 http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_QTP2&prodType =table
- ²¹ American Community Survey 3-Year Estimates, 2008-2010: Marion County Table S1301: FERTILITY.
- ²² File is an extract of Indiana's Census 2010 Summary File 1 (SF1) Demographic Profile, released by the Census Bureau on May 26, 2011.
- ²³ Following Office of Management and Budget (OMB) Statistical Policy Directive 14, poverty status is determined by comparing a family's (or an unrelated individual's) income to one of 48 dollar amounts (thresholds), which vary by the size of the family and the members' ages. In 2010, the poverty threshold for a family with two adults and two children was \$22,113. http://www.census.gov/hhes/ www/poverty/data/index.html. Cited in: America's Children in Brief: Key National Indicators of Well-Being, 2012.
- ²⁴ Department of Epidemiology, DR1854. Marion County, S1701: POVERTY STATUS IN THE PAST 12 MONTHS, 2008-2010 American Community Survey 3-Year Estimates.
- ²⁵ RWJF County Health Rankings: The median income of households in a county represents the combined income of all residents in a household over the age of 18. From: Small Area Income and Poverty Estimates (SAIPE), final release date: November 2011 http://www.census.gov/did/www/saipe/methods/statecounty/index.html ²⁶ These amounts are \$42,117 and \$48,299, estimated to meet basic needs of one- and two-person headed households respectively. Calculations include costs of housing, food, transportation, health and child care and taxes in each county, minus tax credits, for a "self-sufficiency wage" needed per household size, according to the "self-sufficiency" income standards in The Self-Sufficiency Standard for Indiana 2009, Diana Pearce, Indiana Community Action Association. http://www.incap.org/documents/FINAL%202009%20Indiana%20SSS%20Report%2010-26-09.pdf
- ²⁷ Department of Epidemiology, DR1854. Marion County S1701: POVERTY STATUS IN THE PAST 12 MONTHS 2008-2010 American Community Survey 3-Year Estimates.
- ²⁸ Annie E. Casey Kids Count Data Center, Marion County 2012
- http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=IN&cat=647&group=Category&loc=2340&dt=1%2c3%2c2%2c4
- ²⁹ American Community Survey 3-Year Estimates, 2008-2010: Marion County Table S1301: FERTILITY.
- ³⁰ RWJF County Health Rankings.
- http://www.countyhealthrankings.org/#app/indiana/2012/marion/county/1/overall
- ³¹ Department of Epidemiology, DR1854. POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE, B17001.

Universe: Population for whom poverty status is determined, 2010 American Community Survey 1-Year Estimates.

- ³² Annie E. Casey Kids Count Data Center, Marion County 2012, Economics
- http://datacenter.kidscount.org/data/bystate/StateLanding.aspx?state=IN Children under 4 in poverty: 15 percent, Census 2000.
- ³³ Annie E. Casey Kids Count Data Center, Marion County 2012
- http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=IN&group=Grantee&loc=2340&dt=1%2c3%2c2%2c4
- ³⁴ United Way of Central Indiana (UWCI), 2011. An Assessment of the Status of Family Financial Security Needs and our Communities' Capacity to Respond, page 14. United Way 2011 Community Assessment, nd.
- ³⁵ RWJF County Health Rankings: The uninsured measure represents the estimated percent of the population under age 65 that has no health insurance coverage. The Small Area Health Insurance Estimates (SAHIE) from the U.S. Census Bureau provides annual estimates for all U.S. counties. This corresponds well with the American Community Survey 2008-2010 three-year estimate that 19% of the county's employed were without health insurance, while 45% of the unemployed were uninsured.
- ³⁶ Annie E. Casey Kids Count Data Center, Marion County 2012.
- http://datacenter.kidscount.org/data/bystate/StateLanding.aspx?state=IN
- ³⁷ RWJF County Health Rankings YPLL- 75 indicates premature death, e.g. the years of potential life lost before age 75, and contributes 50% of a county's Health Outcome ranking. The YPLL measure is presented as a rate per 100,000 population and is age-adjusted to the 2000 U.S. population. Data on deaths, including age at death, are based on death certificates and are routinely reported to the National Vital Statistics System (NVSS) at the National

Center for Health Statistics. NVSS calculates age-adjusted YPLL rates based on three-year averages to create more robust estimates of mortality, particularly for counties with smaller populations.

- ³⁸ IMR: Infant Mortality Rate. Number of deaths in the first 365 days of life, per 1,000 live births.
- ³⁹ MacDorman MF, and Mathews TJ, The Challenge of Infant Mortality: Have We Reached a Plateau? Public Health Rep. 2009 Sep-Oct; 124(5): 670–681. PMCID: PMC2728659.
- ⁴⁰ Department of Epidemiology, DR 1442.
- ⁴¹ The rate per 100,000 includes all infants who had both a birth and a death record.
- ⁴² MacDorman MF, and Mathews TJ, Recent Trends in Infant Mortality in the United States, NCHS data brief, no 9. Hyattsville, MD: National Center for Health Statistics. 2008.
- ⁴³ For the period 2008-2012 there were an average of 12,642 live births, and an average of 131 deaths for an infant mortality rate (IMR) of 10.3 deaths per 1,000 live births for the period.
- ⁴⁴ LBW: Low birth weight infants weigh less than 2,500 grams, or 5 lbs. 8 oz. at birth.
- ⁴⁵ Pregnancy weight gain, smoking, and alcohol and substance use account for over 10% of the variation in birth weight, and smoking alone accounts for 7% of variation. See Bailey BA, Byrom AR. Factors predicting birth weight in a low-risk sample: The role of modifiable pregnancy health behaviors. Maternal Child Health J. 2007; 11:173-179, cited in County Health Rankings.
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 - 2 = "<80% of expected # visits, or PNC started >=mo5"
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 - 4 = ">=110% of expected # visits, & PNC started <=mo2"
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http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=IN&group=Grantee&loc=2340&dt=1%2c3%2c2%2c4

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- ⁸⁹ Indiana Perinatal Network, 2012. An informal survey of providers found MDs asked and advised about smoking cessation, http://www.surveymonkey.com/s/ProviderSummary
- ⁹⁰ The Indiana Quit Line as of January 2013 offers a five-call protocol for those age 13-17, including pregnant teens. The teen QL package is not the 10-call pregnancy protocol, and not as complete to pregnant teens under age 18. As reflected in recent "Questions about the new services offered through the Indiana Tobacco Quitline materials:" Can partners promote the capability for pregnant women under age 18 to use the Quitline? Would these individuals receive the 10-call protocol or be enrolled into the youth program? A. The 10-call pregnancy program is set up for participants age 18 and over. If a young woman, under age 18 and pregnant calls the Indiana Tobacco Quitline, she would be enrolled into the youth program. However, she would be offered similar information discussed with the pregnancy protocol yet incorporated it into the youth model. As always participants can receive as many ad hoc calls as they need.
- ⁹¹ RWJF County Health Rankings.
- http://www.countyhealthrankings.org/#app/indiana/2012/marion/county/1/overall
- 92 Nationally, between 2009 and 2010, the birth rate for women ages 15–17 declined to record lows for all race and ethnicity groups. The adolescent birth rate, 17.3 births per 1,000, was down significantly from 19.6 births per 1,000 in 2009. Hispanic adolescent birth rates fell from 37.3 to 32.3 per 1,000, for black non-Hispanic adolescents from 31.0 to 27.4 per 1,000, and for white non-Hispanic adolescents from 11.0 to 10.0 per 1,000. Cited in Federal Interagency Forum on Child and Family Statistics. America's Children in Brief: Key National Indicators of Well-Being, 2012. Washington, DC: U.S. Government Printing Office. http://childstats.gov
- ⁹³ DR1759. Hispanic birth rate for mothers age 15-19 was 99 per 1,000 women.
- ⁹⁴ There are nearly 14,000 children 0-4 years of age who receive child care vouchers for licensed daycare centers and homes in the county, and 3,700 eligible children approved but on waiting lists (2010). Kids Count Data Center

- http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=IN&group=Grantee&loc=2340&dt=1%2c3%2 c2%2
- 95 Healthy People 2020 Objective RD-2. Reduce hospitalizations for asthma. 0 to 4 Years: 18.1 per 10,000; 5 to 64 Years: 8.6 per 10,000, and ≥ 65 Years: 20.3 per 10,000. Healthy People 2020:
- http://healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=36
- ⁹⁶ National Hospital Discharge Study Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the Seventh (2009) National Healthcare Quality Report
- http://statesnapshots.ahrq.gov/snaps09/Methods.jsp?menuId=68&state=IN#asthmaQualityOfCare.
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- ⁹⁹ Dwivedi, PK and Lahsaee, H. (2011). The Burden of Asthma in Indiana. Indiana State Department of Health, Indianapolis, IN. 2011 http://www.in.gov/isdh/files/BR_Asthma_5-11-11gw.pdf page 16.
- ¹⁰⁰ Indiana State Department of Health, De-identified hospital discharge data for Marion County acute care hospitals (excluding specialty care, mental health and veteran's hospitals), for patients admitted for ICD-9 493.0 493.9 as first listed diagnosis on the medical record (identified as the principal diagnosis or first cause).
- ¹⁰¹ The Agency for Health Quality and Research (AHQR) similarly monitors asthma admissions for patients 0-17 years of age, as "preventable hospitalizations." These are used as state and program Prevention Quality Indicators (PQIs), e.g. those ambulatory care sensitive conditions that evidence suggests could have been avoided, in part, through high-quality outpatient care.
- ¹⁰² The work group did not rank this issue higher due to the lack of ED visit and CPS data at the time of this report, which might highlight causal mechanisms or group at high risk.
- ¹⁰³ T. J. Mathews, et al. Special Article: Annual Summary of Vital Statistics: 2008, Pediatrics 2011; 127:1 146-157; published ahead of print December 20, 2010, doi:10.1542/peds.2010-3175.
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- http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=IN&group=Grantee&loc=2340&dt=1%2c3%2 c2%2c4 Similarly, children served by CPS in emergency domestic violence shelters increased 17% in the same period.
- ¹⁰⁶ Indiana Department of Child Services Demographics and Trending Report, SFY 2009, April 2010.
- ¹⁰⁷ In 2010, the rate of substantiated reports of child maltreatment was 10 per 1,000 (children ages 0–17). Children under age 1 experienced the highest rate of maltreatment: in 2010, there were 21 substantiated child maltreatment reports per 1,000 children under age 1. Cited in: America's Children in Brief: Key National Indicators of Well-Being, 2012.
- ¹⁰⁸ Division of Family Resources, Family Social Services Administration, State of Indiana, Marion County Monthly Management Report, June 2012, published July 2012.
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- http://www.ers.usda.gov/media/884525/err141.pdf
- ¹¹⁰ DR1983 Community Health Assessment Suvey, respondents with children
- ¹¹¹ U.S. Census Bureau, American Community Survey: Marion County 2008-2012, 3-year Estimates, S1301 Fertility.

- ¹¹² Annie E. Casey Kids Count Data Center, Marion County http://datacenter.kidscount.org/data/bystate/stateprofile.aspx?state=IN&cat=647&group=Category&loc=2340&dt =1%2c3%2c2%2c4
- ¹¹³ Khanani, Elam, Hearn et al., 2011. "The impact of prenatal WIC participation on infant mortality and racial disparities," American Journal of Public Health, Supplement 1, vol 100(81):s204-s209.
- ¹¹⁴ Guide to Community Preventive Services. Preventing birth defects: community-wide campaigns to promote the use of folic acid supplements. www.thecommunityguide.org/birthdefects/community.html
- ¹¹⁵ Recent CDC grants are promoting black breast feeding initiation at IHS and the March of Dimes has educated the OBGYN and Pediatric professional communities.
- ¹¹⁶ Eskenazi Hospital has applied for but not yet achieved "Baby Friendly" program accreditation.
- ¹¹⁷ Morbidity and Mortality Weekly Report 1020 MMWR / August 5, 2011 / Vol. 60 / No. 30 Vital Signs: Hospital Practices to Support Breastfeeding United States, 2007 and 2009. "Public health agencies can set quality standards for maternity care and help hospitals achieve Baby-Friendly designation. Because nearly all births in the United States occur in hospitals, improvements in hospital policies and practices could increase rates of exclusive and continued breastfeeding nationwide, contributing to improved child health, including lower rates of obesity." Indiana has better than the national average scores for percent of infants born in BFHs (12% versus 6%) and who receive formula in the first 2 days of life (15% versus 24%). CDC Breastfeeding Report Card United States, 2012.
 ¹¹⁸ MMWR/August 5, 2011/Vol. 60/No. 30, Ibid.
- ¹¹⁹ HP2020 MICH-22: Increase the proportion of employers that have worksite lactation support programs to 38%. ¹²⁰ These deaths occur in very low numbers each year, and must be aggregated over a 5-year period to have stable rates for comparison to U.S. rates.
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- ¹²² O'Neal J., Bull MJ, Talty J, Slaven, JE., Important Child Occupant Safety Trends, Indiana Between 2005 and 2010, Annals of Advances in Automotive Medicine. 2011 October; 55: 27–32. PMCID: PMC3256845.
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- ¹²⁴ O'Neil, J. Bull, M, et al. Important Child Occupant Safety Trends, Indiana, Between 2005 and 2010, Annals of Advances in Automotive Medicine, 2011;55:27-32.
- ¹²⁵ Vital Signs: Teen Pregnancies 1991-2009, MMWR 2011; 60(13):414-19.
- ¹²⁶ A MCPHD grant allows Healthy Start to work with teens while they are pregnant, to prevent a repeat adolescent pregnancy.
- ¹²⁷ Wanda Spann-Roddy, RN, director, Future Promises, personal communication, September 2012.
- ¹²⁸ Kan ML, Ashley OS, LeTourneau, L et al., The adolescent family life program: A multisite evaluation of federally funded projects serving pregnant and parenting adolescents. AJPH, 2012; 102:1872-1878.

YOUNG CHILD



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Executive Summary

The Marion County Public Health Department (MCPHD) has convened providers, consumers and public health experts for a Community Health Assessment (CHA).

The goals of the CHA are to:

- 1) Compare the community health status of Marion County to urban peers and national standards
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health
- 4) Prioritize the identified issues.

The Community Health Assessment reports on the health status of Marion County residents and is divided by age group. Each report is a product of a work group of topical experts, community-based partners and MCPHD staff.

The three top-priority issues affecting our county's 5- to 11-year-olds were identified as:

• High prevalence of overweight and risk of overweight.

The 2012 Community Health Assessment survey found 40% of children in this age group were overweight and 22% were at risk of being overweight. In 2005, more than 90,000 public school children were physically measured for height and weight, and 22% of Marion County children ages 5 to 11 were found to be overweight, with 18% at risk of being overweight. Little difference was seen between the sexes in this age group, but Hispanic males were at greatest risk in both categories.

 High asthma prevalence and use of secondary medical care, and disparate rates of medical care by children in minority communities.

Asthma is the most common chronic condition of childhood, affecting 9.1% of all U.S. children under the age of 18. It was estimated that in 2009, 9.8% of Indiana children 5-17 years of age were afflicted with asthma.

The 2012 CHA survey found that 19% of Marion County 5- to 11-year-olds were diagnosed with asthma, and 15% were exposed to tobacco smoke at home. Asthma comprised 1 in 5 (20%) hospitalizations for this age group (2009). In those under age 15, non-Hispanic blacks were at four times the risk for asthma hospitalization than were non-Hispanic whites. Asthma hospitalizations for county children under age 17 were 56% higher than the HP2020 objective. ²

Mental health issues in young children.

The U.S. lifetime prevalence for having any kind of mental disorder is 46.4%, with half of all lifetime cases beginning by age 14. The national prevalence for diagnosable mental illness in childhood is 20%. On that basis, it is estimated that more than 170,000 children in Marion County between ages 9 and 17 experience mental illness resulting in impairment of some sort.³ The CHA 2012 survey also found 16% of children ages 5-11 had a medical diagnosis of ADHD and 4.2% were diagnosed with depression.

Moderate priority status was given to the following issues:

- Injuries in young children
- Child motor vehicle safety

Issues which require continuing monitoring or data development:

- Physical activity and diet
- Sensory disorders, developmental disabilities
- Children With Autism Spectrum Disorders (ASD)
- Immunizations
- Food allergies

A Call to Action

The work group found asthma and obesity to be issues continuing to plague young residents. The Asthma Alliance of Marion County, Smoke Free Indy and American Lung Association have all focused on reducing tobacco smoke exposure and promoting asthma knowledge and awareness and recognition of triggers in the home and school. Obesity has been increasingly addressed by certain school districts' monitoring of children's heights and weights and participation in voluntary anti-obesity programs. County children also need to be monitored for mental health conditions and to receive follow-up care as needed.

Current initiatives

- Every year, the Marion County Public Health Department's Smile Mobile brings dental care to hundreds of students and other county residents.
- In April 2008, a sidewalk ordinance was passed in Marion County to provide greater opportunities for safe, healthful physical activity by establishing a more complete network of sidewalks.
- In 2011, Mayor Greg Ballard, the Department of Metropolitan Development and the Indianapolis Land Bank launched the Urban Garden Program, which makes abandoned and underutilized land available to community groups and individuals for the purpose of urban gardening. As of 2013, there were 105 urban and community gardens in Marion County.

Next Steps

All CHA reports will form a baseline for the Community Health Improvement Plan (CHIP). This report is being disseminated among Marion County Public Health Department programs and partners and to other public health organizations. It will be posted on the MCPHD and other partners' websites. The Marion County Public Health Department will work with partners to monitor health statistics related to these issues.

Community Health Assessment Goals & Process

In the spring of 2012, the Marion County Public Health Department (MCPHD) convened a steering committee of providers, consumers and experts in the public health field to guide MCPHD in a Community Health Assessment (CHA) process. Members agreed the initiative would include age group-specific reports about Marion County, each produced by a work group of experts, advocates and other community members. Based on their knowledge, as well as on data from many sources, each work group identified three top-priority issues for that age group. The steering committee then identified the highest priority issues for our community as a whole.

These findings will be used to develop a Community
Health Improvement Plan, again with significant
involvement by community members. The plan will
describe how our community will address the high priority
issues identified in the CHA.

This report is part of the CHA. It presents the most impactful health issues affecting people ages 5 to 11. These issues were identified and prioritized by a work group of community members, subject experts and health

department staff. The work group: 1) reviewed information about people in that age group, 2) discussed the issues that arose from that information, considering their own expertise and experience, and 3) prioritized those issues.

Work group members prioritized issues based on: a) the number of people affected, b) the severity of the impact, c) the degree of any disparities or inequities, d) any trend of increasing impact, e) the availability of resources and proven solutions, f) the degree of secondary impacts, g) the potential for measurable change within five years, and h) community lack of awareness and resources. Some of these considerations may conflict with each other, such as an issue that needs more resources but already has the public's attention. Balancing these considerations was left to the judgment of the work group after a thorough discussion of the information available.

Purpose of CHA

- Increase awareness of community health issues
- Describe social determinants & risk factors
- Compare Marion County to peer cities and nation
- Identify health disparities in county
- Prioritize community health needs
- Provide database for MCPHD's Community Health Improvement Plan
- Provide basis for planning programs& policies
- Engage coalitions and partners
- Improve health status of community

Social Determinants of Health

As defined by the World Health Organization, "The social determinants of health are the conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels, which are themselves influenced by policy choices. The social determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries."

From 2000 to 2010, Marion County's total population grew by 5%, to 903,393, while the proportion of its citizens living in poverty and not covered by health insurance increased. Those two social determinants of health (Appendix 2) are reflected in the County Health Rankings used by MCPHD as primary indicators of health status (Appendix 3). The Health Rankings include social determinants of health, such as educational achievement, poverty level and health care access, as well as key health indicators.

The tables below compare Marion County's ranking on social determinants of health (Table 1), health outcomes (Table 2) and health indicators (Table 3) with those of peer Midwestern counties, the U.S. as a whole, and the Healthy People 2020 objectives, a national benchmark.

Table 1: Social Determinants of Health: All-ages Indicators for Marion County Social Context (2006-2010)

	2010	2006-2010 change	% peer county range
Adults >25 with high school diploma or GED (2010)	84.1%	NA	84.1 - 89.5
Total poverty rate	20.8%	+5.2	15.7 - 19.9
Cost-burdened homeowners (>30% of income in housing)	26%	NA	24.0 - 28.8
Individuals with SSI ^a	4.7%	+ 1.7	-
Families with food stamps (SNAP)	14.1%	-	NA
Persons with disabilities (2010) ^b	12.7%	1	NA
Unemployment rate (2005-2010) ^c	10%	+ 5.0	8.1 - 10.7
Median income (2010) ^d	\$39,393	- 6.4%	-4.0 - 14.1
Residents with health coverage	83.3%	- 0.8	81.8 - 87.7

Indyindicators.iupui.edu—pg 9 a. ACS 2006-09; b. ACS 2009-10; c. IN Dept. of Workforce Development; d. ACS 2005-2009.

Table 2: Health Outcomes: Mortality – All Ages

Deaths per 100,000	MC 2010	US 2010	HP2020
Unintentional injury	36.2	38	36
Homicide	12.7	5.3	5.5
Motor vehicle accidents	12.8	11.4	12.4
Diabetes ⁷	16.7	70.7	Under 66.6
All cancers	203.5	172.8	160.6

Indyindicators.iupui.edu—CDC WONDER 2007-08, NVSR, Death rates by age and age-adjusted death for 15 leading causes in 2010.

Table 3: Health Indicators: Adults Over Age 18, Prevalence of Major Health Risk Factors (BRFSS)

Percentage of population	MC 2010	US 2010	HP2020
Obesity ⁸	32	35.7 (2009-10)	30.5
Diabetes	11	9	NA
Current smoker ⁹	23.6	20.6	12.0
Physical inactivity ¹⁰	26.9	32.4	32.6
Eat 5+ fruits & veg. per day	24.5	27.3	NA
Binge drinking ¹¹	15.5	27.4 (2007)	24.4

Indyindicators.iupui.edu—pg 6. BRFSS

This health assessment uses five Midwestern urban counties with populations from 500,000 to 1 million for comparison to Marion County from the County Health Status Indicator website. The peer counties include Columbus, OH (Franklin Co.), Cincinnati, OH (Hamilton Co.), Louisville, KY (Jefferson Co.) and Milwaukee, WI (Milwaukee Co.).

In Table 4, Marion County is at the low extreme of the range of these counties for median income and graduation rates, and at the upper end of the range for STI infections, adult smoking, teen pregnancy and homicide rate. These areas are listed by the County Health Rankings website as "areas of concern" for Marion County.

Table 4: Health Indicators: Marion County and Peer Counties, 2011

Indicator	Marion County, IN 2011	Peer county range
Adult smoking (%)	26	2026
Adult obesity (%)	30	2732
Adults not physically active (%)	27	2528
Diabetes (%)	10	912
Adult STI (chlamydia) rate/100,000	860	97860
Motor vehicle accident death rate/100,000	12	916
Homicide rate/100,000	14	914
Adult binge drinking (%)	15	1222
Median household income (\$)	43,823	43,82351,246
Uninsured adults (%)	16	1121
Unemployed (%)	9.1	8.210.3
9th grade cohort graduation (%)	60	6075
Children in poverty (ages 0-18) (%)	24	2027
Teen birth rate (women ages 15-19)*	68	4768

Shaded indicators show areas where Marion County is at the least favorable position compared to the peer county range.

Background

Population

According to the 2010 U.S Census, there were 86,626 children ages 5-11 living in Marion County, ¹³ representing approximately 10% of the total county population. That was a decrease of 2% from 10 years earlier, when there were 88,194 children in that age group in the county. The proportion of females in that age group had not appreciably changed since 2000 (at 48.9% in 2010).

Over half (55%) of these children lived in two-parent households, 30% in households headed by a single female, and 9% in households headed by a single male. Half of all families with children ages 5-11 (52%) lived in rental properties.¹⁴

^{*} County health ranking data for teen birth rate is for 1,000 live births among women ages 15-19. At healthindicators.gov, birth rates for ages 15-19 for 2008 were: national, 41.4, Indiana, 43.7, and Marion County, 62.7.

Forty-six percent (46%) of the children were reported as white, 23% as black, and 15% as Hispanic. Sixteen percent (16%) of this age group lived in households that did not speak English as the primary language. ¹⁵

Poverty

One-third of Marion County children ages 5-11 experience a standard of living at or below the federal poverty level. ¹⁶ Child poverty in the county has doubled since 2000. ¹⁷

Of the 31% of Marion County children living in households that meet federal poverty guidelines (2010), 17% of children live in married couple households, and nearly half (41%-47%) in single-parent households (Table 5).

Table 5: Marion County, Children's Characteristics, 2010

POVERTY STATUS IN THE PAST 12 MONTHS	Total 0-18	Married- couple household	Male householder, no wife, family household	Female householder, no husband, family household
Children in households	220,311	115,065	15,799	88,847
Percentage of households with children below poverty level	30.8%	16.8%	41.3%	46.5%

Source: ACS 1-year estimate S0901: CHILDREN CHARACTERISTICS

Food Security

To be eligible for the free and reduced lunch program, a student's family must meet the federal definition of income at 130% of poverty level or below. 18

The percentage of free or reduced lunch students in the county increased from 55.7% in 2007¹⁹ to 65.9% in 2012 and exceeds the 2012 state figure of 48.2 percent, a 36% increase (Table 6). The free or reduced lunch proportion of students varies by school district, from a low of 35% in Franklin Township Schools to a high of 82% of students in Indianapolis Public Schools.

Table 6: Federal Free and Reduced Lunch Populations, Marion County and Indiana Public Schools, 2010 and 2011

	Marion	Indiana
Free/Reduced Lunch 2012	65.9	48.2
Free/Reduced Lunch 2010	60.7	45.2
% Change 2010 to 2012	+ 8.5	+ 6.62
"Free or Reduced Lunch" Rank among Indiana counties for 2012	1	

Source: DOE, 2012

Summer Feeding, a program for schools that is administered by Indy Parks, covers only 17% of recipients of free or reduced school lunch.²⁰ In addition, food pantry use has been up over the past few years. Families now use pantries up to six months a year compared to previously reported use of three months a year, or sporadic.²¹

As the percentage of a school's poverty population increases, achievement test scores tend to decline. For example, the United Way of Central Indiana found an inverse association between percentage of students qualifying for free/reduced lunches and performance on district-level ISTEP state standardized tests.²²

School Enrollment

County public school enrollment has increased by approximately 3,000 students in the past five years, to 141,847 children in 2012. Non-public (parochial and non-accredited) data are not as current but report over 21,000 students in addition to public enrollees. "Alternative education" includes additional public programs for grades 6-12 run by the districts, with an additional enrollment of 8,000+ students. The Indiana Youth Institute reports approximately 21,000 students enrolled in the public schools' special education programs, or about 15% of the public school population.

Indiana data were not available on homeschooling, but a national 2012 study indicates approximately 3% of children ages 5-17 were homeschooled.²⁴

The four-year cohort graduation rate²⁵ for the state is 87.9%; for Marion County, it is 84.8% (2012), which meets the CDC's 2020 Healthy People Leading Health Indicator objective for adolescent health (graduation rate of 82.4% of 9th graders completing high school).²⁶

The Marion County graduation rate increased from 68.3% in 2008. Graduation rates by school district range from 66% to 93% (Table 7).

Table 7: Graduation Rates by School District, Marion County (2010-2012).

School Corporation Profiles						
(All numbers in this table are %s) ^Lunch = students receiving free or	SY '10, '11, '12	SY 2012 ISTEP+ Passing	SY 2012 SY 2012			
reduced price lunches	Grad Rate	Math ELA Science Social S	IREAD Lunch^			
MSD Decatur Township	80.3 84.6 80.9	75.8 72.8 62.7 56.0	82.3 60.4			
Franklin Twnshp Com Sch Corp	86.4 88.2 91.5	89.5 85.5 80.4 82.9	91.5 35.7			
MSD Lawrence Township	85.0 85.6 84.3	72.6 72.4 56.1 60.5	73.5 55.4			
MSD Perry Township	85.2 86.2 91.7	80.2 78.3 65.9 68.4	79.2 57.6			
MSD Pike Township	89.5 91.8 92.4	72.9 69.9 52.9 55.5	75.9 62.4			
MSD Warren Township	84.2 90.1 87.2	77.7 72.0 56.7 54.0	82.0 66.5			
MSD Washington Township	87.8 83.2 85.9	77.7 73.4 61.2 65.3	74.2 55.3			
MSD Wayne Township	84.4 86.6 87.8	71.1 69.1 54.7 56.8	75.4 70.7			
Beech Grove City Schools	88.7 84.0 90.0	85.2 80.3 59.1 64.7	87.1 63.6			
Indianapolis Public Schools	62.6 69.9 66.1	62.7 58.8 44.3 37.8	67.0 82.4			
School Town of Speedway	100 97.4 93.4	90.2 86.3 77.4 83.6	84.9 51.8			
State Rate (Public)	85.4 86.8 87.9	80.7 78.5 71.2 69.3	85.0 48.2			

Source: Indiana Youth Institute (IYI), Marion County Profile, 2012

Health Insurance Coverage

The American Community Survey (2009-11) estimates that 9.2% of Marion County children 17 years and younger were uninsured and 43.5% were insured by Medicaid, both higher than U.S. averages (Table 8). The relatively low average Medicaid payment rates per child (17.7% lower than the U.S. average) may compound coverage problems in youth (Table 9).

A total of 31.9% of children under 18 years old in Marion County were in poverty in 2010, compared to 22.8% in 2007. Some 143,000 youth 19 years and younger (62.3%) had Hoosier Healthwise or other Medicaid coverage. Over 1 in 10 (11.8%) of children under age 19 in households under 200% of the federal poverty threshold were uninsured (2009).

Table 8: Marion County (Indiana) and U.S. Children 0-17 Years of Age: Health Insurance Coverage During the Past 12 Months: 2009-2011

Population group:	Marion County (222,085)	U.S. (72,917,570)	
0-17 years of age	% Population	% Population	County vs. nation rate difference
Uninsured	9.2 ± 3.8	8.0 ± 0.2	1.2%*
Insured by Medicaid or OMTPC**	43.5 ± 9.6	34.7 ± 0.5	8.8%*
Insured by Medicare	0.8 ± 0.8	0.6 ± 0	0.2%*
Insured with employer/ direct-purchase coverage	50.4 ± 12.2	60.5 ± 0.8	10.1%*
Total insured	90.8 ± 17.0	92.0 ± 1.1	1.2%*

^{*}P<.01, via a z-test comparison of proportions.

U.S. Census Bureau (2012). American Community Survey, 2009-2011 ACS 3-year estimates (B27016).

Table 9: Average Medicaid Payments per Child Enrollee (0-19 Years), Indiana and U.S.: FY2009

Enrollees	Indiana	U.S.	% Difference
Children	\$1,896	\$2,305	-17.7%

Source: The Henry J. Kaiser Family Foundation (2012). Indiana: Medicaid payments per enrollee, FY2009. http://www.statehealthfacts.org/profileind.jsp?ind=183&cat=4&rgn=16.

The 2012 CHA survey found that 95% of Marion County children ages 5-11 had health care coverage. Nearly two-thirds (60%) of covered children received insurance through Medicaid, with private insurance accounting for another 1 in 4 (26%) and other sources covering the remaining 14%.

^{**} OMTPC=Other means-tested public coverage.

Marion County Community Health Assessment Survey: Child Assessment

The Community Health Assessment survey of 2012 included respondents from 5,000 county households. The survey was conducted by telephone, using land-line phones and cellphones. Adult respondents in households with children ages 5-17 were asked to give information about a randomly selected child in that age group. The findings were weighted to reflect age, race and gender distribution of 5- to 17-year-olds in Marion County.

Table 10 reflects the demographic and socioeconomic status of the households of young children in the county. Demographically, over 1 in 5 households with young children were Hispanic and over 1 in 4 (29%) were non-Hispanic blacks. The mean household size was 4.5 persons, of which a mean of 2.3 persons were children between the ages of 5 and 17.

Over 42% of these households fell below the federal poverty threshold. Over half had a high school education or less (54%), and their adult unemployment rate was higher (13%) than the county average (9%). In addition, 1 in 4 households spoke primarily some language other than English.

Table 10: Households of Children Ages 5-11: Marion County Community Health Assessment, 2012

Child 5-11, Household characteristics (CHA 2012)	Percent (%)
Ethnicity: White	42
Black	29
Hispanic	22
Mean household size	4.5
Meet 100% poverty level	42
Responding adult completed high school or less	54
Responding adult unemployed	13
Households not speaking English at home ²⁷	24

Source: DR1983 CHA survey 2012 Children 5-11

Mortality

Death rates in this population are lower than those of any other age group in the county: 14 deaths per year per 100,000 children ages 5-9 and 10-14 (2005-2009, Table 11). The U.S. 2008 death rates were somewhat lower for ages 5-9, and slightly higher for ages 10-14.²⁸ The leading causes both nationally and locally were accidental deaths and deaths due to cancer.

Table 11: Marion County Children 5-14, Leading Causes of Death and Rates Per 100,000 (2005-2009)

Rank Rate per 100,000 (deaths)	Marion County Ages 5-9	US 2008 Ages 5-9	Marion County Ages 10-14	US 2008 Ages 10-14
1	Cancer 4 <i>(11)</i>	2.3	Accidents 5 <i>(15)</i>	5.1
2	Accidents 3 (<i>10</i>)	4.1	Cancer 2 <i>(6)</i>	2.2
3	Homicide 2 <i>(5)</i>	0.6	Homicide 1 <i>(4)</i>	1
4	Congenital malformations. 2 (5)	0.8	Suicide 1 (2)	1.1
5	Influenza &pneumonia 0 (1)	Diseases of heart 0.5	Congenital malformations 1 (2)	0.8
Total	14 (43)	12.5	14 (39)	15.7
HP2020 MCHI objectives ^a	12 per 100,000		15.2 per 100,000	

Sources: DR1442/1934, MCPHD Epidemiology; Healthy People 2020 Maternal, Infant and Child Health Objectives: MICH–3.2 and MICH–4.1. National Vital Statistics System (NVSS), CDC, NCHS.

Morbidity Indicator: Hospitalization Rates

In 2009, there were a total of 1,507 Marion County hospital discharges for children ages 5-11, or one discharge per 57 children.

The leading cause of those hospitalizations was respiratory disease, which accounted for one-third (32%) of all hospitalizations for this age group. Asthma comprised 1 in 5, or 20%, of all hospitalizations (not just those for respiratory diseases) for ages 5-11. One in seven (15%) of the hospitalizations was due to mental disorders, including affective psychosis, which prompted 1 in 11, or 9%, of hospitalizations for the age group. Injury and poisoning accounted for 8%.²⁹

Over 5,000 Marion County patients ages 14 and under were discharged per year from local acute care hospitals for the period 2009-2011. The leading principal diagnosis (Appendix 4) was

for respiratory illnesses (91.4 per 10,000, mainly asthma and acute upper respiratory illness), which made up 31% of discharges, followed by:

- Mental disorders (25.6 per 10,000)
- Injury and poisonings (22.5 per 10,000)
- Conditions originating in the perinatal period (19.6 per 10,000).

Rates for most conditions were about 10% lower than national rates, except for mental disorders (28% higher), blood diseases (9% higher) and respiratory illnesses (6% higher).

Gender disparities were seen for respiratory conditions (mainly asthma), where males had a 40% higher hospitalization rate than females, and injuries/poisonings, where the male rate was 37% higher. Black non-Hispanic children had 60% higher rates of hospitalizations from respiratory conditions, five times higher risk of hospitalization from diseases of blood-forming organs and 30% greater hospitalization rate due to injury than white children.³⁰

According to the 2012 Community Health Assessment survey, one-fourth (25.5%) of Marion County 5- to 11-year-olds visited an emergency room in the past 12 months, with 6.5% having visited more than once during that period.

Some 78,000 annual visits were attributed to ages 14 and under, for a rate of 4,129 per 10,000 persons (2009-11). The leading causes were respiratory conditions and injury or poisoning, each contributing 1 in every 4.5 visits, followed by nervous system disorders (1 in 8 visits) and infectious/parasitic diseases (1 in 15 visits) (Appendix 5: Categorized Primary Diagnosis, Emergency Department Injury-Related Visits, Marion County Residents Ages 0-14 Years, 2009-2011).

Males had about a 30% higher injury/poisoning visit rate than females, and slightly higher respiratory visit rates. Females had a threefold greater rate of visits than males for genitourinary conditions.

High Priority Issues

The work group was tasked with identifying the major health issues affecting 5- to 11-year-olds in Marion County. The work group selected three issues as having the highest priority for community action. It did not rank order these issues.

High Priority Issue A: Improving Overweight Status and Unhealthy Weight Habits

The 2012 Community Health Assessment survey indicated that 40% of Marion County 5- to 11-year-olds were overweight, with another 22% at risk of becoming overweight (Table 12). Twenty-nine percent of this age group were of normal weight, and 9.3% were underweight.

These results are based on body mass indices calculated from children's heights and weights, as reported by a respondent adult in the household reporting on a randomly selected household child in the age group. The majority (84%) of these respondents were primary caregivers.

The 2012 survey results indicate an increase in the proportion of these children who are overweight compared to results of an assessment in 2005 (Table 12). In 2005, similarly aged public school children were physically measured for height and weight in 10 of the 11 Marion County public school districts. The 2005 study, done with direct measurement of children rather than parental reporting, might be expected to be more accurate compared to survey data. The increase seen in these findings could be attributed to a higher proportion of Hispanic families covered in 2012, given their growth in the overall population. Young Hispanic children were of greatest overweight status in 2005, and they are also exposed to some of the factors shown in Table 13.

Table 12: Children Ages 5-11, BMI Status in 2005 and 2012

Children, ages 5-11 BMI categories	2012 CHA survey	2005 CHWI	Absolute % change
% underweight	9.3	2	+7.3
% normal weight	29	59	-30
% at risk of overweight	22	18	+4
% overweight	40	22	+18

Source: DR1983, CHA 2012, and 2005 Children's Healthy Weight Initiative

Other risk factors for unhealthy weight in 5- to 11-year-olds were measured in the 2012 survey (Table 13). Nearly two-thirds (60%) of young children reportedly watched over two hours of recreational screen time per day, exceeding the American Academy of Pediatrics guidelines.³⁴ This contrasts with the near-unanimous reporting by respondent adults that 98% of these children were physically active an hour or more each day. However, it appears the adults counted school-based physical education and sports in their estimates.

Household hunger or food insecurity can be associated with overweight or obesity status in minors.³⁵ Over 1 in 3 of these households (35.6%) reported some or frequent inability to afford enough food to eat, and 40% received SNAP (food stamp) benefits (Table 13).

Table 13: Health Behaviors Related to Child's Weight Status, 2012

Marion County children ages 5-11: health behaviors (CHA 2012)	%
Child is active at least 60 minutes per day ³⁶	98
Child watches over 2 hours of TV or other recreational screen time per day ³⁷	60
Family often/sometimes food insecure (couldn't afford enough food to eat)	35.6
Family uses SNAP (food stamps)	40

Source: DR1983 CHA survey 2012 Children 5-11

The work group noted that there is little public health data on the effects of depression, child abuse, and some psychotropic medications on weight gain. Similarly, cultural differences may influence obesity: Cultural views may color body type, health perceptions and cooking preferences.³⁸

The effects of underlying health conditions also may affect a child's ability or predisposition to be active. The following section discusses that asthma and other chronic conditions (Table 14) are common in this age group. In the 2012 health assessment survey, 1 child in 4 ages 5-11 (27%) had at least one of the listed chronic conditions; slightly over 1 in 10 (13%) had two or more conditions.

High Priority Issue B: High Asthma Prevalence

The 2012 Community Health Assessment survey found that 19% of Marion County 5- to 11-year-olds had a current asthma diagnosis (Table 14). The survey also revealed that 15% of children in that age range lived in a home where someone smoked, a behavior that can exacerbate the symptoms of people with asthma.

Table 14: Children ages 5-11 with Chronic Health Conditions, 2012

Children ages 5-11, chronic health conditions (CHA 2012)	Percent (%)
Asthma	19.0
ADHD/ADD	16.0
Depression	4.2
Hypertension	1.0
Diabetes/pre-diabetes	0.7
Other medical condition ³⁹	17.0
None of the above conditions	60
One condition	27
Two or more conditions	13

Source: DR1983 CHA survey 2012 Children 5-11

Asthma is the most common chronic disease of childhood, affecting 9.1% of all U.S. children under the age of 18. Boys (16%) are more likely to have received a diagnosis of asthma than girls (12%). Rates of ever having been diagnosed with asthma or currently having asthma were greatest in black children (21% ever diagnosed, 16% currently have asthma). Hispanic (13% and 8%), and non-Hispanic white (12% and 8%) prevalence rates are notably lower. Children in poor families were more likely to have asthma (12%) than children in families who were not poor (8%). 40

The Marion County asthma rate for 5- to 11-year-olds reported by the CHA survey, 19%,⁴¹ was similar to the U.S. rate. It was estimated that in 2009, 9.8% of Indiana children ages 5-17 were afflicted with asthma. Approximately 15,000 of them lived in Marion County.⁴² The 2010 child lifetime asthma prevalence rate in Indiana for children ages 5-9 was 12.7%; for Hoosiers ages 10-14, it was 16.3%. Both prevalence rates are similar to national averages for these two age groups (14% and 15.2%, respectively).⁴³

One-third (32%) of all Marion County hospitalizations for ages 5-11 in 2009 were due to respiratory conditions, with 305 hospitalized specifically for asthma. Asthma comprised 1 in 5, or 20%, of Marion County hospitalizations for that age group that year.⁴⁴ Forty-one (41%) percent of those hospitalized for asthma were black males.⁴⁵

The risk of asthma hospitalization is much greater among black children than among white children. Marion County asthma hospitalizations for children under 17 years of age were 56% greater than the HP2020 objective. Among those under age 15, non-Hispanic blacks have a risk for asthma hospitalization nearly four times that for non-Hispanic whites.

High Priority Issue C: Mental Health Conditions in Young Children

According to one study, 46.4% of U.S. residents will have at least one mental disorder sometime in their lifetime. Half of all lifetime cases begin by age 14. Mental illness in childhood may have such long-term consequences as psychiatric problems, peer issues and violent or aggressive behavior. 46

The national prevalence for diagnosable mental illness in childhood is 20%. On that basis, it is estimated that over 170,000 children in Marion County between ages 9 and 17 experience mental illness resulting in impairment of some sort.⁴⁷

In the 2012 Community Health Assessment survey, 16% of children ages 5-11 had been diagnosed with Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD). An additional 4.2% of children ages 5-11 were reported to have a medical diagnosis of "depression or anxiety problems" (Table 15). These 2012 prevalence rates were double the national rate for ADHD (8.2% in 2007-2010) and may exceed national rates for depression, although the questions were formulated differently.

Table 15 gives national figures for a range of mental health conditions for children ages 6-17. The most common diagnosis is for ADHD (8.2%) followed by behavioral or conduct disorders (5.1%). Another 2-3% were diagnosed with depression or phobias, and 1% had the diagnosis of Autism Spectrum Disorder (ASD). This does not address the frequency of comorbidities in these categories.

Table 15: Children in the U.S. ever receiving a diagnosis of a mental health disorder, 2005-2011.

ADHD diagnosis (National Health Interview Survey 2007-2010)	%	Ever diagnosed (95% CI)		
Age 6-11		8.2 (7.4-9.0)		
Age 12-17	1:	1.9 (11.0-12.9)		
Behavioral or conduct problems (National Survey of Children's Health (NSCH) 2007)	%	Ever diagnosed (95% CI)		
Age 6-11		5.1 (4.5-5.8)		
Age 12-17		5.7 (5.2-6.3)		
Autism or Autism Spectrum		2007-2008		2009-2010
Disorder (ASD) (NHIS 2007-2010)		% (95% CI)		% (95% CI)
Age 6-11		1.0 (.7-1.3)		1.1 (.8-1.4)
Age 12-17		0.6 (.49)	1.1 (.8-1.4)	
Depression Lifetime major depressive episode	Depres NSCH 2		Major depressive episode, National Survey on Drug Use and Health (NSDUH) 2010-2011 ⁴⁸	
		% (95% CI)		% (95% CI)
Age 6-11		2.3 (1.9-2.8)		NA
Age 12-17	7.1 (6.4-7.8)		12	.8 (12.4-13.3)
Phobias or anxiety		s or fears in last 12 s, NHIS 2007	Diagnosis of anxiety, NSCH 2007	
		% (95% CI)		% (95% CI)
Age 6-11	2.9 (2.3-3.7)		4.3 (3.8-5.0)	
Age 12-17	2.4 (1.9-3.1)		6.6 (6.0-7.3)	
Suicide deaths	National Vital Statistics System (NVSS) 2010			olent Death Reporting VDRS) 2005-2009
	No.	Rate per 100,000	No.	Rate per 100,000
Age 10-14	267	1.3	302	1.13
Age 15-19	1,659	7.5	2,088	7.39

Source: Mental Health Surveillance Among Children, 2005-2011. MMWR Supplement 62(2). May 17, 2013.

One in 10 (10%) of U.S. 9- to 17-year-olds have at least moderate symptoms of mental illness or functional difficulties, and 6% have severe symptoms or functional impairment. Applying those rates to Marion County produces a count of 12,000 children ages 9 to 17 in the former category, and 7,500 in the latter.⁵⁰

The Hoosier Assistance Plan (HAP) is the primary funding source for mental health and addiction services from the Indiana Family and Social Services Administration's Division of Mental Health and Addiction (DMHA). Almost all children with an assessment for Serious Emotional Disorder (SED) would be eligible for HAP. Over 8,500 of the county's children ages 12-17 had the second highest rate of chronic addiction (10.7%, next to young adults). These children, too, were eligible for funding from the HAP.

The relative contribution of organic and environmental/developmental factors to mental health is a complex subject. In 2009, 1 in 7 (15%) of Marion County hospitalizations for children ages 5-11 was due to mental disorders, 9% being for affective psychosis. From a pediatrics perspective, early perinatal interventions work well to prevent such unhealthy habits as substance abuse, but by age 5 it is not known if a child's "developmental delay" is attributable to organic or environmental factors, or both. Child assessments before age 5 revealed mental health/development issue estimates ranging from 5% to 26%, and are limited by underreporting, stigma and lack of credible and uniform standards.

Moderate Priority Issues

The following issues also have important impacts on the health of our county's 5- to 11-year-olds.

Injuries in Young Children

Accidents were the leading cause of death during 2005-2011 for Marion County residents ages 5-11, leading to 24 deaths. ⁵⁶ Accidents were also the national leading cause of death for children age 5-14 in 2008. ⁵⁷ However, from 2000 to 2009 the overall unintentional injury death rate decreased 29% among persons 19 years and under, from 15.5 to 11.0 per 100,000. ⁵⁸

Motor vehicle traffic—related deaths declined but remain the leading cause of injury deaths. Motor vehicle accidents (MVAs) are the leading cause of death in U.S. children ages 3 to 14;⁵⁹ in Marion County, MVAs accounted for 7 of the 24 accidental deaths. In terms of non-vehicular accidental deaths, children ages 10-14 are at the highest risk of all ages for bicycle-related fatalities in the nation.⁶⁰

In 2009, a total of 126 Marion County children ages 5-11 were hospitalized for injury and poisoning, comprising 8% of all 2009 Marion County hospitalizations for 5- to 11-year-olds.

Falls are the leading cause of unintentional injuries for young children in the U.S., especially as a consequence of sport and recreational events. ⁶¹ Only two deaths attributable to falls occurred among Marion County residents ages 5-11 between 2005 and 2011. ⁶² However, fall-related injuries were the most frequent reason for emergency room visits for Marion County children

ages 14 and under from 2009 to 2011, with an annual average of 1,920 fall-related emergency room visits in this age group.

Fires caused seven of the 24 accidental deaths in 5- to 11-year-olds from 2005 through 2011.⁶³ As was true nationally, six of the seven fire-related deaths in Marion County children disproportionately affected communities of color. Over one-third of African-American accidental deaths in Marion County youngsters ages 5-11 were fire-related deaths.⁶⁴

The Marion County Child Fatality Review Team reviewed 40 cases of child death in the county for ages 5-12 between 2007 and 2011.⁶⁵ Nearly two-thirds of deaths were accidental and thus potentially preventable. Nearly half of the accidental deaths in this age group (44%) were vehicular deaths (Table 16).

Table 16: Marion County Child Fatalities, Ages 5-12 (2007-2011)

Marion County child deaths, ages 5-12 (2007-2011)	Cases	% of total
Homicide	7	17.5%
Undetermined	2	5.0%
Natural	5	12.5%
Suicide	1	2.5%
Accidental	25	62.5%
Total	40	100%
Vehicular	11	44.0%
Accidental (preventable)	27	67.5%
Undetermined	6	15.0%
Male	22	55%
Female	18	45%
African-American	18	45%
Caucasian	20	50%
Other	2	5%

Source: Marion County Child Fatality Review Team Data Summary, 2007-2011

Child injury is associated with conditions of poverty, single parenthood, low maternal educational status and gender. Independent of race and cause of accident, males have higher death rates than females. Social factors associated with greater child injury also include greater number of persons in household and number of children in household.⁶⁶

Child Motor Vehicle Safety

Seat belt usage reduces fatal and non-fatal injuries by one-half, but seat belts are less used by those under 25 years, especially teens. ⁶⁷ Current Indiana data show that 92% of drivers and passengers of all ages use seat belts. ⁶⁸ Fifty percent of motor vehicle traffic deaths involve nonuse of seat belts, nationally as well as locally. ⁶⁹ Nationally, one-half of all children under age 15 who die in motor vehicle accidents are not restrained; additionally, one-quarter of these deaths involved a drunk driver. ⁷⁰ Booster seats for children under age 7 reduce injuries by 59%. ⁷¹

HP2020 objectives call for seat belt use by 86% of children 8 to 12 years of age,⁷² and the American Academy of Pediatrics recommends children under age 13 ride in the back seat.⁷³ Indiana data indicate more than 87.7% of children 12 or younger were seated in rear seats.⁷⁴

Seat belt use and safe seating varies by race and socioeconomic status. Drivers who were white, with high school or less education, were most associated with transporting children 12 years and younger in a front seat. Drivers who were black were most associated with transporting children unrestrained.⁷⁵

Issues to Monitor, Track or Develop Health Surveillance

Physical Activity and Diet

Children between ages 10 and 12 are in a critical period of increased risk for becoming overweight. During this transitional period, children have more discretion on what they eat and how they use leisure time. It has been found that behaviors such as dropping out of sports, skipping breakfast, increased snacking, soda consumption and computer use are associated with this age group.⁷⁶

Guidelines from the American Academy of Pediatrics (AAP) endorse one hour per day of physical activity and less than two hours per day of screen time (video game, computer and television use).⁷⁷ Physical education (PE) is recommended but not required in the county school systems. Many students have PE only two days a week. The Indiana legislature recently passed a law regarding vending machines in schools, but it has not addressed these other guidelines.⁷⁸

Considerable epidemiological evidence indicates that a diet rich in fruits and vegetables helps prevent chronic disease and promotes health. Several studies demonstrate that eating habits developed during childhood and adolescence tend to carry over into adulthood. Therefore, increasing children's consumption of fruits and vegetables becomes an important public health issue. Ten to 15 low-income IPS elementary schools applied for, and are enrolled in, the Indiana Department of Education's Fruits and Vegetables program. However, nutritional interventions toward this end have generally enjoyed only moderate success.⁷⁹

Sensory Disorders, Developmental Disabilities

Sensory disorders often occur in childhood and may limit an individual's success in early schooling. If undiagnosed, the condition may deteriorate as the person ages. Nationally, 0.3% of infants are born with hearing deficits, and 10% of 7- to 9-year-olds have vision impairments.⁸⁰

The American Community Survey asked Marion County respondents to report various disabilities (2009-2011). This three-year estimate was compared to the 2010 U.S. rates for school-age children (Table 17). Overall, 5.9% had a disability. Cognitive disability was the most common in this age group.

Table 17: Persons Ages 5 to 17 with Disabilities, 2009-2011 Marion County and 2010 USA

	2009-2011 Marion County, Indiana					U.S. 2010	
Population 5-17 years old	Number with a Total disability		Percent with a disability		Percent with a disability		
years old	Estimate	Estimate	Margin of error	Estimate	Margin of error	Chi	Margin of error
Population 5 to 17 years	157,444	9,295	+/-1,094	5.90%	+/-0.7	5.20%	+/-0.1
With a cognitive difficulty		7,197	+/-892	4.60%	+/-0.6	3.90%	+/-0.1
With a self-care difficulty		1,344	+/-432	0.90%	+/-0.3	0.90%	+/-0.1
With a vision difficulty		1,110	+/-360	0.70%	+/-0.2	0.70%	+/-0.1
With an ambulatory difficulty		1,036	+/-322	0.70%	+/-0.2	0.60%	+/-0.1
With a hearing difficulty		901	+/-311	0.60%	+/-0.2	0.60%	+/-0.1

Source: ACS 2009-2011 3-year estimates

In Indiana, students in 1st, 4th, 7th and 10th grades are screened for hearing problems. In the 2011-2012 school year in Marion County, among nearly 1,000 schoolchildren in 60 schools screened by MCHPD staff, 4% failed the hearing screening.⁸¹

Developmental disabilities are increasing nationally among children ages 3-17.⁸² A national study showed that developmental disabilities are common: About 1 in 6 children in the U.S. had a developmental disability from 2006 to 2008 (13.9%). The prevalence of parent-reported disabilities increased 17.1% between 1997 and 2008. Prevalence of individual conditions include:

• Learning disabilities: 7.7%

• Attention deficit hyperactivity disorder (ADHD): 6.7%.

Children with Autism Spectrum Disorders

The CDC has estimated that 1 in 88 children develop Autism Spectrum Disorders (ASD, including autism, Asperger's Syndrome, and related illnesses), or 0.47% of children between ages 3 and 17.83 According to the 2009-2010 National Health Interview Survey, 1.1% of children nationwide ages 6-11 had ever received a diagnosis of autism or ASD.84

While affecting all races and socioeconomic strata, ASD is five times more likely to occur in boys than in girls. Parents who have one child with ASD have a 2%-18% chance of also having it in a second child. Children with ASD often have a variety of mental health comorbidities.⁸⁵

Medical costs for children with ASD are estimated to be six times higher than for children without ASD. In addition to medical costs, intensive behavioral interventions for children with ASD can cost \$40,000 to \$60,000 per child per year. ⁸⁶ In 14 autism monitoring sites nationwide, prevalence of autism in 8-year-olds varies from 1 in 46 to 1 in 150. Using this surveillance network, the CDC has estimated that the prevalence of ASD increased 23% during 2006 to 2008 and 78% during 2002 to 2008.

Table 18: Indiana Children with Autism, 1999-2000 and 2010-2011, Reported by DOE

	Child count in 1999-2000	Child count in 2010-2011	Increase
Age 3-5	456	978	201%
Age 6-11	1,624	5,302	330%
Age 12-17	844	4,753	560%
Age 18-21	153	718	470%
Age 6-21	2,621	10,773	410%
Age 3-21	3,077	11,751	380%

Source: Reported by the State of Indiana per Section 618 of IDEA to U.S. Department of Education, Office of Special Education Programs

In Indiana, the ASD incidence rate has increased dramatically over 10 years (Table 18) and may be as high as 1 in 77 children. A recent CDC estimate (NHIS 2007-2010) reports the overall prevalence of autism spectrum diseases to be 1.1% for the population of 12- to 17-year-olds, up from 0.6% in 2008.

Immunizations

Vaccinations against common infectious diseases provide some of the most effective, least expensive health care available. MCPHD's data on immunization levels are fairly incomplete; information is only available to MCPHD for a non-representative portion of county children. More effective monitoring of immunizations could allow MCPHD to better target efforts to increase immunization rates.

With improved collection of immunization data at schools, and increased reporting of immunizations due to increased use of electronic health records in doctors' offices, there is good potential to improve local public health monitoring of immunization rates.

Food Allergies

While food allergies seem to have increased among children in recent years,⁸⁷ there is no formal public health reporting mechanism to monitor this trend. Hospital discharge data do not capture food allergic reactions as a principal diagnosis. Data from school food services and emergency medical surveillance might help in assessing the prevalence and impact of food allergies.

A 2010 National Health Interview Survey estimated the number of children with various respiratory, skin and food allergies. Table 19 indicates that nationwide, 4.4% of 5- to 11-year-olds have food allergies.⁸⁸

Table 19: Age-related Allergies in 0 to 17 Year Olds, National Health Interview Study 2010

Age group	Hay fever	Resp. allergies	Food allergies	Skin allergies
0 to 4	4.5%	8.1%	5.1%	13.9%
5 to 11	10.1	12.8	4.4	13.8
12 to 17	13.1	13.1	4.5	10.1

Source: National Health Interview Summary, NVHS 2010:250, Table 2

Summary and Conclusions

The work group ranked obesity, asthma and mental health as the top three critical public health issues for 5- to 11-year-olds in Marion County. Despite various governmental and community efforts, these issues continue to burden this population and therefore deserve the highest priority for community action. Injuries, child safety and setting children up for good health-related habits were identified as secondary issues deserving of further discussion among interested coalition and MCPHD partners, including data monitoring and trend evaluation.

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Appendix 1: Community Health Assessment Ages 5-11 Work Group Members

Name: Representing: (*CHA steering committee)

Chuck Brandenburg* Planning, United Way of Central Indiana

Dawn Daniels Child Fatality Review Team, Riley Hospital, IU Health

Denise Ferguson Nutrition Services, MCPHD

Ann Graves YMCA of Greater Indianapolis

Jodi Hackworth IU Health, Injury Prevention, Riley Hospital

John M Kunzer, MD* Primary Care, Eskenazi Health Services

Mary Beth Larkins Midtown Mental Health

Colleen McNabb Anthem

Joseph O'Neil, MD IU School of Medicine, Injury prevention

Michael Patchner IU School of Social Work

J. Perkins Pike Metropolitan School District

Leslie Power Indy Parks Department

Rae Wallis Nursing Services, Indianapolis Public Schools

Audrey Satterbloom Physical Education, Indianapolis Public Schools

Sarah M Stelzner, MD* IU School of Medicine, Indiana Academy of Pediatrics

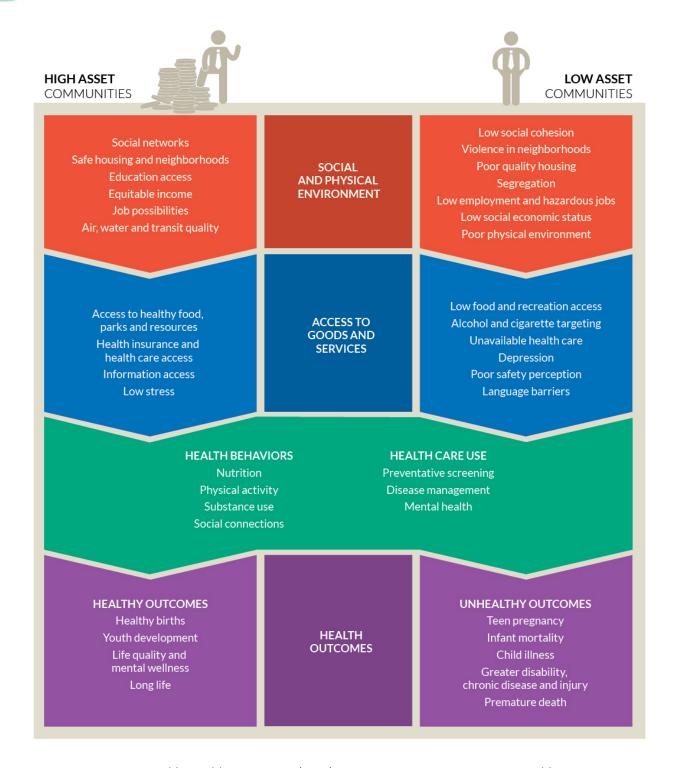
Staff:

Joe Gibson Director, Dept. of Epidemiology

Millie Fleming-Moran Epidemiologist Researcher

Gary Weir Information Specialist

Appendix 2: Social Determinants of Health



Source: Marion County Public Health Department (2012). Marion County 2012 Community Health Assessment.

Appendix 3: 2012 Marion County: County Health Rankings

	Marion County	Margin of error	National benchmark*	Indiana	Rank among 92 counties
Health Outcomes					82
Mortality					81
<u>Premature death (Years of Potential Life Lost)</u>	9,229	9,008-9,450	5,466	7,687	
Morbidity					75
Poor or fair health	18%	17-19%	10%	16%	
Poor physical health days	3.6	3.4-3.9	2.6	3.6	
Poor mental health days	3.8	3.6-4.1	2.3	3.6	
Low birth weight	9.2%	9.0-9.4%	6.0%	8.1%	
Health Factors					85
Health Behaviors					70
Adult smoking	26%	24-27%	14%	24%	
Adult obesity	30%	29-32%	25%	31%	
Physical inactivity	26%	25-28%	21%	27%	
Excessive drinking	16%	15-18%	8%	16%	
Motor vehicle crash death rate	12	11-13	12	15	
Sexually transmitted infections	753		84	341	
Teen birth rate	67	66-68	22	44	
Clinical Care					19
Uninsured	18%	17-19%	11%	16%	
Primary care physicians	602:1.0		631:1.0	889:1.0	
Preventable hospital stays	74	72-75	49	78	
<u>Diabetic screening</u>	81%	79-82%	89%	82%	
Mammography screening	63%	62-66%	74%	64%	
Social & Economic Factors					91
High school graduation	81%			84%	
Some college	58%	57-59%	68%	58%	
<u>Unemployment</u>	10.0%		5.4%	10.2%	
Children in poverty	31%	28-34%	13%	22%	
Inadequate social support	23%	22-25%	14%	20%	
Children in single-parent households	45%	44-47%	20%	32%	
Violent crime rate	1,155		73	367	
Physical Environment					92
Air pollution-particulate matter days	7		0	2	
Air pollution-ozone days	7		0	3	
Access to recreational facilities (% population)	10%		16	10	
Limited access to healthy foods (%population)	5%		0%	7%	
Fast food restaurants (% of total restaurants)	55%		25%	50%	

Source: DR1724

Appendix 4: Hospitalizations, Ages 0-14: Marion County (2009-2011) and U.S. (2010)

AGE GROUP 0-14	MC cases	MC Rate	US Rate	MC:US Rate
		IVIC Rate	US Rate	
Rate per 10,000	N (AVG)			Ratio
Total (All Causes)	5552	292.31	326.0	90
Diseases of the respiratory system	1735	91.4	86.1	106
Mental disorders	487	25.6	20.1	128
Symptoms, signs, and ill-defined conditions	428	22.5	*	
Injury and poisoning	424	22.3	24.9	90
Conditions originating in the perinatal period	373	19.7	28.5	69
Diseases of the digestive system	351	18.5	29.2	63
Congenital anomalies	248	13.0	*	
Diseases of the skin and subcutaneous tissue	218	11.5	12.0	96
Infectious and parasitic diseases	210	11.1	17.7	63
Diseases of the nervous system and sense organs	204	10.8	18.3	59
Diseases of the blood and blood-forming organs	180	9.5	8.7	109
Diseases of the genitourinary system	178	9.4	10.9	86
Endocrine, nutritional, metabolic diseases, imm disorders	174	9.2	21.3	43
Diseases of the musculoskeletal system	77	4.1	*	
Diseases of the circulatory system	63	3.3	*	
Neoplasms	55	2.9	*	
Complications of pregnancy, childbirth, puerperium	24	1.3	*	
Supplementary classifications	120	6.3	9.6	66

DR1941 Hospitalizations for 2009-2011 for Marion County (revised August 2013). National Hospital Discharge Survey, 2009, age standardized to U.S. Census 2000

Appendix 5: Categorized Primary Diagnosis, Emergency Department Injury-Related Visits, Marion County Residents Ages 0-14 Years, 2009-2011

Primary Diagnosis Category, per ICD9 Injury/Poisoning or E-Code	Number of Visits	Annualized Visits per 10,000 persons
Total (All Causes, all ED visits)	393,110	
Total All Injury coded visits	97,380	5,127.0
Open wound of head, neck and trunk	16,670	877.7
Contusion with intact skin surface	13,067	688.0
Superficial injury	9,245	486.7
Fracture: upper limb	8,768	461.7
Sprains/strains of joints and adjacent muscles	8,067	424.7
Certain traumatic complications; unspecified injuries	7,898	415.8
Open wound of upper limb	4,488	236.3
Effects of foreign body via body orifice	4,195	220.9
Open wound of lower limb	3,450	181.6
Other and unspecified effects of external causes	2,790	146.9
Fracture: lower limb	2,578	135.8
Dislocation	1,962	103.3
(E)Accidental falls	1,920	101.1
Burns	1,825	96.1
(E)Other accidents	1,505	79.2
Poisoning by drugs, medicine bio substances	1,388	73.1
Intracranial injury, excluding skull fracture	1,347	70.9
(E)Motor vehicle traffic accidents	1,347	70.9
Toxic effects chiefly non-medicinal	1,305	68.7
Complications of surg/medical care	903	47.6
(E)Drugs, meds_ bio substances causing adverse		
effects in therapeutic use	613	32.3
Fracture of skull	465	24.5
(E)Accidental poisoning: solid/and liquid gases	323	17.0
(E)Accidents: natural and environmental factors	288	15.2
Crushing injury	185	9.7
(E)Surg medical procedures, cause of abnormal reaction of patient/complication	180	9.5
(E)Homicides injury inflicted by other persons	123	6.5
Fracture of neck and trunk	98	5.2
(E)Other road vehicle accidents	97	5.1
Other	78	4.1
Internal injury of thorax, abdomen and pelvis	58	3.1
Late effects of injuries, poison, toxic effects	28	1.5
(E)Accidents: by submersion, suffocation	27	1.4
(E)Suicide and self-inflicted injury	20	1.1

DR1953 Injury Coded ED visits ages 0-14, E-code categories shaded to show issues relevant to work group discussion.

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http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=41#285350

LHI TU 1.2 Tobacco use by adolescents. 18.1% adolescents in grades 9-12 smoked cigarettes in the past 30 days (2011). Target: 16.0%.

- ¹⁰ HP2020 PA-1. Reduce the proportion of adults who engage in no leisure-time physical activity. Baseline: 36.2 percent of adults engaged in no leisure-time physical activity in 2008 (age adjusted to the year 2000 standard population). Target: 32.6 percent.
- ¹¹ HP2020 LHI Binge drinking, SA-14.3. Reduce the proportion of persons 18 and older engaging in binge drinking during the past 30 days. Baseline: 27.1% percent of adults aged 18 years and older (2008). Target: 24.4 percent.
- ¹² DHHS, Community Health Status Indicators (CHSI) 2009 (most recent year), Marion County, IN

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- n Peer Midwestern urban counties are Louisville (Jefferson Co.) KY, Cincinnati (Hamilton Co.) OH, Columbus (Franklin Co) OH, Nashville (Davidson Co.) TN and Milwaukee (Milwaukee Co.) WI, as suggested by the CHSI website, above.
- ¹³ U.S. Census Bureau. American Factfinder. Table QT-P2. Single Years of Age and Sex: 2010. 2010 Census Summary File 2.
- ¹⁴ Notes from Young Child Working Group first meeting, 06/29/2012.
- ¹⁵ Notes from Young Child Working Group first meeting, 06/29/2012.
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- ¹⁷ Annie E. Casey Kids Count Data Center, Marion County 2012.
- ¹⁸ Students from families with incomes below 130% of the poverty guidelines are eligible to enroll in the free lunch program. Number and percentage of public school students who received reduced priced lunches.

Data Source: Indiana Department of Education. http://www.doe.in.gov/improvement/accountability/data-center

- ¹⁹ Annie E. Casey Kids Count Data Center, Marion County 2012.
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¹ Catching your Breath, 2011, http://www.mchd.org

² Ibid.

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⁴ WHO Commission on Social Determinants of Health, World Health Organization. Closing the gap in a generation: health equity through action on the social determinants of health: Commission on Social Determinants of Health final report. Geneva, Switzerland: World Health Organization, Commission on Social Determinants of Health; 2008. http://whglibdoc.who.int/publications/2008/9789241563703_eng.pdf

⁵ From: *Stats Indiana*-- 2010 Census Data, Counties, U.S. Census Bureau on February 10, 2011. http://www.stats.indiana.edu/topic/census.asp

⁶ RWJF **County Health Rankings** website, Marion County, 2012.

⁷ HP2020 diabetes death rate, Objective D-3 http://www.healthypeople.gov/2020/data-search/Search-the-Data?nid=4120

⁸ HP2020 Adult Obesity NWS-9. Reduce the proportion of adults who are obese. Baseline: 33.9 percent of persons aged 20 years and older were obese in 2005–08 (age adjusted to the year 2000 standard population). Target: 30.5 percent.

⁹ HP2020 Tobacco Use TU 1.1.

- ²⁵ The number and percentage of students who graduated in four years or less. Does not include charter schools in county level aggregates due to DOE reporting. Indiana Department of Education.
- $\underline{\text{http://www.doe.in.gov/improvement/accountability/data-center}}$
- ²⁶ HP2020 AH-5.1. Increase the proportion of students who graduate with a regular diploma 4 years after starting 9th grade. Target: 82.4 percent.
- ²⁷ Do you primarily speak another language besides English in your home?
- ²⁸ Pediatrics January 1, 2011 vol. 127 no. 1 146-157 dol: 10.1542/peds.2010-3175.
- ²⁹ DR1763, MCPHD Epidemiology; handout from Young Child Working Group first meeting, 06/29/2012.
- ³⁰ DR1941 Hospitalizations, MC residents 0-14 years.
- ³¹ Wayne Township schools were not included in the 2005 study.
- ³² See CHA survey 2012, Child section.
- ³³ In 2005 little difference was seen between the sexes overall in ages 5-11. Hispanic males were at greatest risk of obesity. Forty-nine percent of Hispanic children of both sexes were overweight or at risk of overweight, compared to 41% of black children, 36% of white children and 31% of Asian or Pacific Islander children.
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 Does [INITIALS] get 60 minutes of activity per day? Include times in physical education classes, sports, active play, dance or other sports lessons, riding bike or scooter.
- ³⁷ Combines item 28 ("On an average school day, how many hours does [INITIALS] watch TV?") and item 29 ("On an average school day, how many hours does [INITIALS] play video or computer games or use a computer for something that is not school work? Include activities such as Xbox, PlayStation, Nintendo DS, iPod touch, Facebook, and the Internet.").
- ³⁸ Mary Beth Larkins, Midtown Mental Health, notes from Young Child Working Group meeting, 06/29/2012.
- ³⁹ Notable health conditions include those listed above (hypertension, diabetes or pre-diabetes, depression or anxiety, ADD or ADHD, or "any condition requiring additional medical care or medications than is usual for children his/her age").
- ⁴⁰ Bloom B, Cohen RA, Freeman G. Summary health statistics for U.S. children: National Health Interview Survey, 2010. National Center for Health Statistics. Vital Health Stat 10(250). 2011.
- ⁴¹ DR1983 CHA Survey, ages 5-11
- ⁴² Handout from Young Child Working Group first meeting, 06/29/2012.
- ⁴³ Behavioral Risk Factor Surveillance System (BRFSS). 2010 Child Asthma Data: Prevalence Tables. Center for Disease Control and Prevention and National Center for Environmental Health. 2010.
- ⁴⁴ Notes from Young Child Working Group first meeting, 06/29/2012.
- ⁴⁵ DR1763, MCPHD Epidemiology.
- ⁴⁶ Greene, Marion S.; Williams, Matthew J.; Wright, EW. Mental Health and Substance Abuse Needs Assessment for Marion County. Center for Health Policy, Dept. of Public Health, IU School of Medicine, IUPUI. 2010.
- ⁴⁷ Greene et al, 2010. Ibid.
- ⁴⁸ National Survey on Drug Use and Health, 2010-2011. NSDUH surveys only youth 12-17.
- ⁴⁹ All rates are age adjusted using the 2000 U.S. standard population (all races, both sexes). NVDRS exists in 16 states: Alaska, Colorado, Georgia, Kentucky, Maryland, Massachusetts, New Jersey, New Mexico, North Carolina, Oklahoma, Oregon, Rhode Island, South Carolina, Utah, Virginia and Wisconsin.
- ⁵⁰ Greene et al, 2010, page 7. "Serious Emotional Disturbance" is assessed using a score from the Global Assessment of Functioning (GAF). The national prevalence of children 9-17 with a GAF score of 60 [in a range of 0-100] is 10%, or 12,000 Marion County children. Lower functional scores of 50, or 6% of national children, yields an estimate of 7,500 Marion County children.
- ⁵¹ Greene et al, 2010, Table 2, page 19.

- ⁵² DMHA contracts with managed care providers to provide care for individuals who meet diagnostic, functioning level, and income criteria. The providers make a year's care available to all enrollees. Eligible individuals are at or below the 200% federal poverty level. HAP does not pay 100% of the services. Individuals enrolled in the plan are expected to participate in paying for their care based on financial ability through a sliding fee schedule. In 2008, one-third of Marion County adults with chronic addictions were eligible for HAP funding (Greene et al, 2010, page 19).
- ⁵³ Rae Wallis, IPS, notes from Young Child Working Group second meeting, 09/06/2012. Notes that "affective psychosis" is a somewhat vague diagnosis category that may include "acting out" and impulsive behavior. A large increase of diagnoses in this category has been observed within the county schools. The increase has been much greater for males than females; race has not been a relevant factor.
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- ⁵⁵ Cheryl Boydell Brauner, CB and Bowers, C. Estimating the Prevalence of Early Childhood Serious Emotional/Behavioral Disorders: Challenges and Recommendations. Special Report on Child Mental Health, Public Health Reports, 2006;121:303-310.
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- ⁵⁷ Pediatrics January 1, 2011 vol. 127 no. 1 146-157 dol: 10.1542/peds.2010-3175.
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- ⁶² DR1806, MCPHD Epidemiology. Accidental deaths to ages 5-11, 2005-2011.
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- ⁷² HP2020 Injury and Violence Prevention Objectives. IVP–16.4 Children aged 8 to 12 years. Target: 86 percent of 8 to 12 year olds use safety belts. Data source: National Survey of the Use of Booster Seats (NSUBS), DOT, NHTSA.
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- ⁷⁴ Joseph O'Neil, Marilyn J. Bull, Judith Talty and James E. Slaven, IMPORTANT CHILD OCCUPANT SAFETY TRENDS, INDIANA BETWEEN 2005 AND 2010.
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- ⁷⁸ Millicent Fleming-Moran, MCPHD, personal communication, 06/12/2013.
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⁸⁰ National Institute of Deafness and other Communication Disorders.

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⁸¹ DR2103 2011-2012 MCPHD school hearing screenings.

⁸² Pediatrics: "Trends in the Prevalence of Developmental Disabilities in U.S. Children, 1997–2008." http://www.cdc.gov/ncbddd/features/birthdefects-dd-keyfindings.html
⁸³ Ibid.

⁸⁴ Centers for Disease Control and Prevention. Mental Health Surveillance Among Children: United States, 2005–2011. MMWR 2013;62(Suppl 2).- http://www.cdc.gov/mmwr/pdf/other/su6202.pdf

⁸⁵ 2012 Indiana Parent/Family Needs Assessment Survey, By: Cathy Pratt, Ph.D., and Scott Bellini, Ph.D. Indiana Resource Center for Autism.

⁸⁶ Autism and Developmental Disorder Surveillance factsheet.

⁸⁷ Denise Ferguson and Joseph O'Neil, notes from Young Child Working Group first meeting, 06/29/2012.2.

⁸⁸ Summary Health Statistics for U.S. Children: National Health Interview Summary 2010, Table 2, Vital and Health Statistics, Series 10, Number 250.



ADOLESCENTS



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Executive Summary

In the spring of 2012, the Marion County Public Health Department (MCPHD) called together a Steering Committee of providers, consumers and experts in the public health field to guide the MCPHD in producing a countywide Community Health Assessment (CHA).

The goals of the CHA were to:

- 1) Describe the community health status of Marion County, with comparisons to its urban peers and to national standards (where applicable).
- 2) Identify important health trends or disparities.
- 3) Identify significant causes of poor health and the pathways between social determinants of health, ¹ intermediate outcomes and final health outcomes.
- Prioritize the identified issues.

The Community Health Assessment is divided into reports about specific age ranges. Each report is a product of a work group of topical experts, community-based partners and MCPHD staff. The ages 12-17 work group identified problems, trends and factors contributing to the health of county adolescents, determined leading causes of mortality and morbidity, and compared county findings with national indicators. The work group identified three top-priority issues for community action:

High prevalence of youth poverty and hunger.

Nearly 1 in 3 (31.8%) Marion County children live in households with incomes below the federal poverty level (2010). That included 17% of children in married-couple households and nearly half (41%-47%) in single-parent households. The percentage of free and reduced lunch students in the county increased from 57.2% in 2008 to 65.9% in 2012, and exceeds the 2012 figure for the state by 36%.

Over 1 in 4 (27%) homes with children ages 12-17 had incomes below 100% of federal poverty guidelines, according to the 2012 CHA survey of Marion County households. Nearly 18% of interviewed respondents with children ages 12-17 were unemployed or unable to work. One in four families (26%) reported using food stamps. Moreover, 30% reported occasional or frequent food insecurity, and 13% had to supplement food supplies from local food pantries.

• Homicide is a leading cause of death among this age group. Indianapolis firearm homicides for 10- to 19-year-olds were double the average rate of firearm homicides in the 50 largest U.S. metro areas.

Homicide is the leading cause of death among county 15- to 24-year-olds (responsible for about 1 in every 3 deaths), or nearly three times that of similarly aged U.S. residents. Homicide also is the third leading cause of death in 10- to 14-year-olds. Homicides in these two age groups result in an average of over 150 deaths per year. Both mortality rates exceed the HP2020 objective for homicide of 5.5 deaths per 100,000 for all ages. Homicide disproportionately affects black and young males, who are three to six times more likely to die due to homicide than whites or females of similar ages.

The Indianapolis firearm homicide rate for ages 10-19 (12.6 per 100,000) was more than double that of the U.S. and the largest of 50 metropolitan areas (2006-2007).² For the period 2008-2012, death certificate data indicate that Marion County had 27 firearm deaths among 12- to 17-year-olds: 19 were homicides, seven were suicides, and one was undetermined as to intent.

In terms of school-related violence, the 2011 Youth Risk Behavior Survey showed that Indiana high school students reported that:

- 17% carried a gun, knife or other weapon in the past 30 days
- 3.7% carried such a weapon on school property
- 6.8% were threatened or injured by others who carried weapons in the past 12 months
- 8.9% were in a physical fight on school property in the past 12 months.
- Diagnosed depression affects 16% of this age group, exceeding U.S. rates and double the HP 2020 indicator for adolescent health. Suicide is the third leading cause of death in this age group.

Among Marion County children ages 12-17, 16% were reported to have been "ever diagnosed" with depression, higher than the U.S. lifetime depression rate for youth (12.8%). This compares to the HP2020 Leading Health Indicator objective of 7.5% for adolescents suffering a major depressive disorder event.³

Suicide is the third leading cause of death in this age group and disproportionately affects males, particularly white males. The suicide rate is 30% higher than the U.S. rate. The 2011 Indiana Youth Risk Behavior Survey found that in the past year, teens reported that:⁴

- Nearly 1 in 3 (29%) had depressive symptoms [that interrupted] usual activities for 2+ weeks
- 25% had been bullied at school, and 19% had been electronically bullied
- 18.9% seriously considered suicide
- 13.6% made a suicide plan
- Over 1 in 10 (11%) had one or more attempts at suicide.

Other important health issues for this age group included:

Motor vehicle accidents and injury. Motor vehicle accidents and injuries cause approximately half of preventable accidental deaths in this age group and are often associated with alcohol abuse.

High rates of substance abuse. This includes diagnosed chronic substance abuse (but little attendant access to therapy), binge drinking and non-medical use of prescription medications.

Asthma/respiratory disease and smoking. Asthma is increasingly common in this age group, and smoking is still prevalent among both youths and their household members. Among high school students, nearly 1 in 5 smokes (18%), of which 13.8% smoked daily. However, lifetime use of cigarettes for Indiana high school seniors has decreased from 66.4% in 1993 to 39.9% in 2011.⁵ About 1 in 5 of households with children ages 12-17 reported that someone smoked inside the home.

Autism Spectrum Disease diagnosis. High incidence of autism diagnosis adds to difficulties in family and school environments, although the increased diagnosis and treatment may be getting more children into care.

High-risk populations. Several subgroups of the 12- to 17-year-old group are at high risk for poor outcomes. Children in foster care are at a high risk of dropping out of high school, incarceration, post-traumatic stress disorder and death. High school dropout rates, though lower than in the past, are associated with unemployment, poverty, early pregnancy and other negative outcomes. And homeless youth remain at risk despite increasing outreach efforts. Children who are homeless for over a year are four times more likely to experience developmental delays than their peers, are twice as likely to repeat a grade and twice as likely to be identified with learning disabilities.

Sexual violence. Increased abuse and sexual assaults in dating continue in domestic settings.

Sexual risk taking and STIs. The lessons of HIV/AIDS may be forgotten in an age where HIV is now treated as a chronic disease. Rates of chlamydia and syphilis⁶ have increased. Data indicate problems in repeat infections and co-infections, difficulties in assuring that partners are treated and minimal prenatal treatment of infections.

A Call to Action

While violent deaths have declined nationally and in Marion County, our local rates are still above those of comparable urban areas and the aggregate national rate. Local justice, public safety, education and youth-focused agencies have collaborated to work toward "Safe Neighborhoods" and greater involvement of youth in healthy community endeavors.

Suicide prevention is supported through surveillance, more focus within schools and reduction of bullying of students.

High school retention and graduation rates have improved in all districts, a critical step in reducing poverty in the community. We have also had a reduction in teen pregnancy rates, especially among 15- to 17-year-olds. Support for these initiatives, and addressing needed mental health and substance abuse diagnosis and treatment, will be required to increase the ranks of adolescents who are healthy, developing members of their neighborhoods and communities.

Current initiatives

- The Marion County Public Health Department, through its violence prevention program, offers trigger locks at no charge.
- Students Against Violence Everywhere (SAVE) operates chapters in schools throughout Indianapolis spreading the message of peace and safety. MCPHD teams up with SAVE and other organizations to sponsor a yearly poster contest to encourage local students to express anti-violence messages in creative ways.

Next Steps

The CHA reports will form a baseline for the Community Health Improvement Plan (CHIP). This report is being disseminated among the Marion County Public Health Department's programs and partners, and to other public health organizations. It will be posted on the MCPHD and other partners' websites. The Epidemiology Department will work with partners to develop and monitor vital statistics for birth and death changes, hospitalization rates and injury data to track population health status changes.

Community Health Assessment Goals & Process

In the spring of 2012, the Marion County Public Health Department (MCPHD) convened a steering committee of providers, consumers and experts in the public health field to guide MCPHD in a Community Health Assessment (CHA) process.

The committee agreed to a series of age group reports, each to be guided by a work group of steering committee members, topical experts, MCPHD staff and community-based partners. The work groups helped identify problems, trends and causal factors. Then, they identified three toppriority issues for that age group. Work group members for the age 12-17 population are listed in Appendix 1.

The goals of the CHA were to:

- Describe the health status of residents of Marion County, with comparisons to urban peers and national standards (where applicable).
- 2) Identify important health trends or disparities.
- 3) Identify significant causes of poor health and the pathways between social determinants of health,8 intermediate outcomes and final health outcomes.
- 4) Prioritize the identified issues.

This report is part of the CHA. It presents the most impactful health issues affecting people ages 12 to 17 in our county. These issues were identified and prioritized by a work group of community members, subject experts and health department staff who: 1) reviewed information about people in that age group, 2) discussed the issues that arose from that information, considering their own expertise and experience, and 3) prioritized those issues.

Work group members prioritized issues based on: a) the number of people affected, b) the severity of the impact, c) the degree of any disparities for inequities, d) any trend of increasing impact, e) the availability of resources and proven solutions, f) the degree of secondary impacts, g) the potential for measurable change within five years, and h) lack of awareness and

Purpose of CHA

- Increase awareness of community health issues
- Describe social determinants & risk factors
- Compare Marion County to peer cities and nation
- Identify health disparities in county
- Prioritize community health needs
- Provide database for MCPHD's Community Health Improvement Plan
- Provide basis for planning programs& policies
- Engage coalitions and partners
- Improve health status of community

resources. Some of these considerations may conflict with each other, but balancing these considerations was left to the judgment of the work group after a thorough discussion of the information available.

Social Determinants of Health

From 2000 to 2010, Marion County's population grew by 5%, to 903,393, while the proportion of its citizens living in poverty or not covered by health insurance increased. Those two conditions are considered social determinants of health (Appendix 2), reflecting how people in a community grow, live, work and age. Such measures are factored in the County Health Rankings used by MCPHD as primary indicators of health status (Appendix 3). The Health Rankings include such factors as education, poverty level and health care access (Table 1), as well as health outcomes and key indicators (Table 2 and 3).

Where possible, the tables compare Marion County indicators with national rates and the Healthy People 2020 objectives, a national benchmark. In addition, County Health Status indicators are included from five urban counties in the Midwest with populations between 500.000 and 1 million.¹¹

Table 1: Social Determinants of Health, All Ages, Marion County

	2010	Change from 2006 to 2010	Peer County Range
Persons over 25 with a high school degree or GED (%)	84.1	-	84.1 – 89.5
County poverty (%)	20.8	+ 5.2	15.7 – 19.9
Cost-burdened homeowners (>30% of income in housing) (%)	26.0	-	24.0 – 28.8
Individuals receiving SSI ^a (%)	4.7	+ 1.7	-
Families receiving food stamps (SNAP) (%)	14.1	-	-
Persons with disabilities ^b (%)	12.7	_	-
Unemployment (2005-2010) (%) ^c	10.0	+ 5.0	8.1 – 10.7
Median income ^d	\$39,393	- 6.4%	-4.0 – 14.1
Persons with health coverage (%)	83.3	- 0.8	81.8 – 87.7

Sources: Indyindicators.iupui.edu, p. 9; a. ACS (2006-2009); b. ACS (2009-2010); c. IN Dept. of Workforce Development; d. ACS (2005-2009)

Table 2: Mortality, All Ages, Marion County, US, and Healthy People 2020 Objective

	Deaths per 100,000 in MC (2010)	Deaths per 100,000 in US (2010)	Deaths per 100,000 HP2020 Objective
Unintentional injury	36.2	38	36
Homicide	12.7	5.3	5.5
Motor vehicle accident	12.8	11.4	12.4
Diabetes ¹²	16.7	74.0	66.6
All cancer	203.5	172.8	160.6

Indyindicators.iupui.edu—CDC WONDER 2007-2008; NVSR, Table 9

Table 3: Prevalence of Major Health Risk Factors, Ages 18+, Marion County, US, and Healthy People 2010 Objective

	Percent (%) of Persons in MC (2010)	Percent (%) of Persons in US (2010)	Percent (%) of Persons per HP2020 Objective
Obese ¹³	32	35.7 (2009-2010)	30.5
Diabetes	11	9.0	ı
Current smoker ¹⁴	23.6	20.6	12.0
Physically inactive ¹⁵	26.9	32.4	32.6
Eat 5+ fruits & veg. per day	24.5	27.3	1
Binge drink ¹⁶	15.5	27.4 (2007)	24.4

Sources: Indyindicators.iupui.edu—p. 6 BRFSS

This health assessment also uses five Midwestern urban counties with similar populations (Table 4) for comparison to Marion County, from the County Health Status Indicator website.¹⁷ The peer counties include Columbus, OH (Franklin Co.), Cincinnati, OH (Hamilton Co.), Louisville, KY (Jefferson Co.) and Milwaukee, WI (Milwaukee Co.).

Table 4: Health Indicators, Marion County and Peer Counties, 2011

Indicator	Persons in MC (2011)	Range of Persons in Peer Counties
Adult smoking (%)	26	20 – 26
Adult obesity (%)	30	27 – 32
Adults not physically active (%)	27	25 – 28
Diabetes (%)	10	9 – 12
Adult chlamydia rate/100,000	860	97 – 860
Motor vehicle accident death rate/100,000	12	9 – 16
Homicide rate/100,000	14	9 – 14
Adult binge drinking (%)	15	12 – 22
Median household income (\$)	43,823	43,823 – 51,246
Adults uninsured (%)	16	11 – 21
Adults unemployed (%)	9.1	8.2 – 10.3
9th grade cohort graduation (%)	60	60 – 75
Children in poverty (age 0-18) (%)	24	20 – 27
Teen birth rate (women, ages 15-19)*	68	47 – 68

Source: DHHS, Community Health Status Indicators (CHSI) 2009 Marion and Peer Counties

Background

Population Profile: Ages 12-17

In 2010, Marion County had 71,719 people ages 12-17, who comprised 8% of the population. The age group was 49% white non-Hispanic (34,912), 34% black non-Hispanic (24,526), 10.7% Hispanic (7,667) and 1.5% Asian. Youth ages 12 to 17 made up 31.6% of the county's under 18 population (total under 18 population was 226,505).

^{*} County health ranking data for teen birth rate is for 1,000 live births among women ages 15-19. At healthindicators.gov, birth rates for ages 15-19 for 2008 were: national, 41.4, Indiana, 43.7, and Marion County, 62.7.

Health care coverage

The 2011 National Health Interview Survey (NHIS) reported that of children 17 years and younger: 20

- 7.2% (5.5 million) were uninsured, including 8.2% of the poor (household incomes below 100% of the federal poverty level), and 11.2% of the near poor (100% to 200% of the federal poverty level).
- 40.9% had public coverage, including 84% of poor, 61% of near poor, and 15% of non-poor children.
- 53% had private coverage.

According to American Community Survey (2009-2011) estimates, 9.2 percent of Marion County children ages 17 and under were uninsured, with 43.5% insured by Medicaid (Table 5). Compounding coverage problems in youth is the relatively low average Medicaid payment rate per child in Indiana, which is 17.7% lower than the U.S. average (Table 6).

In Marion County, 143,000 children had Hoosier Healthwise or other Medicaid coverage, or 62.3% of all children under age 19. A total of 31.9% of children under 18 were in poverty in 2010, compared to 22.8% in 2007.

Table 5: Health Insurance Coverage During the Past 12 Months, Ages 0-17, Marion County and U.S, 2009-2011

	Marion County (222,085)	U.S. (72,917,570)	
	Percent (%) of Population	Percent (%) of Population	Rate Difference (%)
Uninsured	9.2 ± 3.8	8.0 ± 0.2	1.2*
Insured by Medicaid or OMTPC**	43.5 ± 9.6	34.7 ± 0.5	8.8*
Insured by Medicare	0.8 ± 0.8	0.6 ± 0.0	0.2*
Insured with employer/ direct-purchase coverage	50.4 ± 12.2	60.5 ± 0.8	10.1*
Total insured	90.8 ± 17.0	92.0 ± 1.1	1.2*

^{*} P<.01, via a z-test comparison of proportions.

Source: U.S. Census Bureau (2012). American Community Survey, 2009-2011 ACS 3-year estimates (B27016).

^{**} OMTPC=Other means-tested public coverage.

Table 6: Average Medicaid Payments Per Child Enrollee, Ages 0-19, Indiana and U.S., FY2009

Enrollees	Indiana	U.S.	Difference
Children	\$1,896	\$2,305	-17.7%

Source: The Henry J. Kaiser Family Foundation. (2012). Indiana: Medicaid payments per enrollee, FY2009. http://www.statehealthfacts.org/profileind.jsp?ind=183&cat=4&rgn=16.

School Enrollment

County public school enrollment has increased by approximately 3,000 students in the past five years, to 141,847 children in 2012. ²¹ Non-public (parochial and non-accredited) data are not as current but report over 21,000 students in addition to public enrollees. Over 8,000 students are enrolled in "alternative education" programs for grades 6-12 run by the school districts. The Indiana Youth Institute reports that approximately 21,000 students are enrolled in the public schools' special education programs, or about 15% of the public school population (Table 7).

Table 7: School Enrollment, Marion County Pre-Kindergarten to 12th Grade, 2008-2012

	2008	2009	2010	2011	2012
Public school pre-K-12	138,152	139,266	140,878	143,331	141,847
Non-public schools	22,735	21,855			
Alternative education	9,210	8,160			

Source: IYI, Marion County; Indiana DOE

Home schooling: Indiana data were not available, but a national 2012 study indicates approximately 3% of children ages 5-17 were homeschooled.²²

School dropout rates

School dropout numbers are current only through 2010, but they declined by more than half from 2008.²³ IPS leads in decreasing dropout numbers, but other large districts also show this pattern since 2005 (e.g. Warren, Wayne). Over 700 students did not finish high school out of a population of over 132,000 students enrolled in the public schools in 2009-2010.

Indianapolis Public Schools is the largest district, having about 33,000 students. IPS has the highest number and rate of students who leave before graduating (Table 8). IPS shows a steady decline in dropout numbers since $2006-2007^{24}$ (Figure 1). Its current rate (13.5 per 1,000) is over twice that of the county average (5.6/1,000).

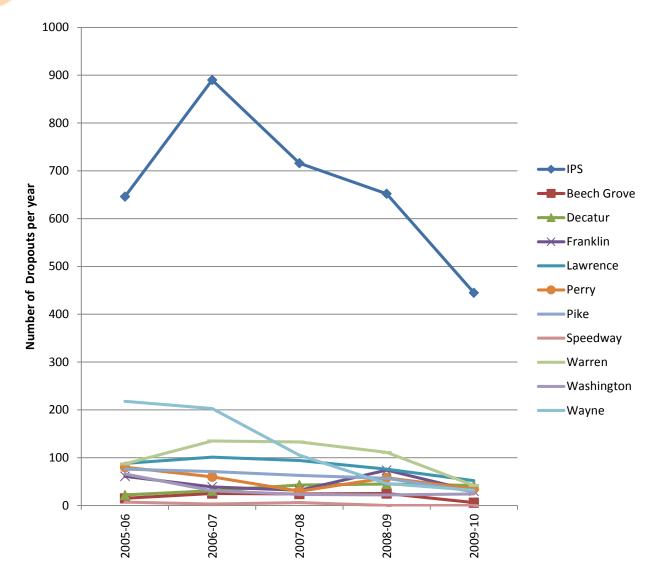


Figure 1: Number of Dropout Cases Per Public School District, Marion County, 2005-2010

Source: DR2128 Dept. of Epidemiology

Table 8: Dropout Cases and Rates, Public School Districts, Marion County, 2009-2010

	District Enrollees	Dropouts	Dropout Rate Per 1,000 Students
IPS	33,080	445	13.5
Decatur	6,435	42	6.5
Warren	11,741	42	3.6
Lawrence	15,464	52	3.4
Franklin	8,952	30	3.4
Pike	11,074	29	2.6
Perry	14,423	35	2.4
Beech Grove	2,628	6	2.3
Washington	11,155	24	2.2
Wayne	16,003	32	2.0
Speedway	1,509	0	0.0
All-county	132,464	737	5.6

Source: DR2128. Rates are calculated using all-grade level enrollment figures per district.

Graduation Rates

The 4-year cohort graduation rate 25 for the state is 87.9%; for Marion County it is 84.8% (2012). The county overall meets the CDC's 2020 Healthy People Leading Health Indicator objective (82.4% of 9th graders completing high school).²⁶

The Marion County graduation rate has increased from 68.3% in 2008. Graduation rates by public school district range from 66% to 93% for the 2012 academic year (Table 9).

Table 9: Graduation Rates by School District, Marion County, 2010-2012

School Corporation Profiles				
(All numbers in this table are %s) ^Lunch = students receiving free or reduced price lunches	SY '10, '11, '12 Grad Rate	SY 2012 ISTEP+ Passing Math ELA Science Social S	SY 2012 SY 2012 IREAD Lunch^	
MSD Decatur Township	80.3 84.6 80.9	75.8 72.8 62.7 56.0	82.3 60.4	
Franklin Twnshp Com Sch Corp	86.4 88.2 91.5	89.5 85.5 80.4 82.9	91.5 35.7	
MSD Lawrence Township	85.0 85.6 84.3	72.6 72.4 56.1 60.5	73.5 55.4	
MSD Perry Township	85.2 86.2 91.7	80.2 78.3 65.9 68.4	79.2 57.6	
MSD Pike Township	89.5 91.8 92.4	72.9 69.9 52.9 55.5	75.9 62.4	
MSD Warren Township	84.2 90.1 87.2	77.7 72.0 56.7 54.0	82.0 66.5	
MSD Washington Township	87.8 83.2 85.9	77.7 73.4 61.2 65.3	74.2 55.3	
MSD Wayne Township	84.4 86.6 87.8	71.1 69.1 54.7 56.8	75.4 70.7	
Beech Grove City Schools	88.7 84.0 90.0	85.2 80.3 59.1 64.7	87.1 63.6	
Indianapolis Public Schools	62.6 69.9 66.1	62.7 58.8 44.3 37.8	67.0 82.4	
School Town of Speedway	100 97.4 93.4	90.2 86.3 77.4 83.6	84.9 51.8	
State Rate (Public)	85.4 86.8 87.9	80.7 78.5 71.2 69.3	85.0 48.2	

Source: Indiana Youth Institute (IYI), Marion County Profile, 2012

High Priority Issues

The work group was tasked with identifying the major health issues affecting 12- to 17-year-olds in Marion County. The work group selected three issues as having the highest priority for community action. It did not rank order these issues.

High Priority Issue A: High Rates of Violence and Homicide Deaths

Homicide is a leading cause of death in this age group and occurs at twice the U.S. rate.

Table 10: Violent Deaths, Marion County and US, 2008-2012

	Marion County Rate Per 100,000 Persons (#) (2008-2012)	US Rate Per 100,000 Persons (2009) ²⁷	MC:US Ratio
Ages 10-14 3 rd overall cause of death: assault (homicide)	2.0 (5)	0.9	2.0
Ages 15-24 1 st overall cause of death: assault (homicide)	31.0 (152)	10.9	2.8
Ages 10-19 Firearm-related homicides ²⁸ (2007-2008)	12.6*	6.8 (50 largest MSAs)	1.9

Source: DR1934 *2007-2008

Homicide is the leading cause of death among 15- to 24-year-olds, accountable for 1 in 3 deaths in this age group, which is nearly three times that of similarly aged U.S. residents. It is also the third leading cause of death in 10- to 14-year-olds (Table 10). Homicides in these two age groups result in an average of over 150 deaths per year. Both mortality rates exceed the HP2020 objective for homicide of 5.5 deaths per 100,000 for all ages.

Homicide disproportionately affects black and young males, who are three to six times more likely to die due to homicide than whites or females of similar ages. Among 15- to 24-year-olds in Marion County, blacks are 13 times more likely to die by homicide than whites.

The Indianapolis firearm homicide rate for ages 10-19 (12.6 per 100,000) was more than double that of the U.S. as a whole and that of the nation's 50 largest metropolitan areas (2006-2007). For the period 2008-2012, death certificate data indicate that Marion County had 27 firearms deaths among 12- to 17-year-olds: 19 were homicides, seven were suicides, and one was undetermined as to intent. 30

School-related violence

The 2011 Youth Risk Behavior Survey showed that Indiana high school students reported that:³¹

- 17% carried a gun, knife or other weapon in the past 30 days.
- 3.7% carried such a weapon on school property.
- 6.8% were threatened or injured by others who carried weapons in the past 12 months.
- 8.9% were in a physical fight on school property in the past 12 months.

In addition, in the past 12 months:

- 25% were bullied on school property.
- 18% were electronically bullied.

As alarming as these rates are, between 2000 and 2010, homicide and suicide death rates remained stable in the 10-14 age group³² and declined for 15- to 24-year-olds.

Death rates and leading causes of death

Marion County's total mortality rate of 20 per 100,000 for children ages 10-14 is 30% greater than U.S. rates (Table 11).

The leading causes both nationally and locally were accidental deaths and deaths due to cancer. Accidental causes, making up 1 in 3 deaths, were 50% higher than the U.S. rate but had declined in the past decade. Cancer and homicide, ranking second and third, respectively, each made up 1 in 10 deaths, with homicide occurring at twice the U.S. rate. The remaining leading causes, suicide and respiratory diseases, were up to three times higher than U.S. rates.

Table 11: Mortality Rates By Cause of Death, Ages 5-14, Marion County and U.S.

Causes of death ranked by numbers of deaths	MC 2008-2012	US (2010)	MC:US Ratio
Total Rate per 100,000 from all causes	20	12.9	1.6
Accidents	7	4.0	1.8
Malignant neoplasms	2	2.2	0.9
Assault (homicide)	2	0.7	2.4
Congenital malformations, deformations & chromosomal abnormalities	1	0.9	1.1
Intentional self-harm (suicide)	1	0.7	1.4
Chronic lower respiratory diseases	1	0.3	3.3
Diseases of heart	1	0.5	2
Septicemia	1	0.2	5.0
Nephritis, nephrotic syndrome & nephrosis	0	0.1	0.0
Cholelithiasis & other disorders of gallbladder	0	_	

Source: DR1934, revised August 2013 and National Vital Statistics Report (NVSR) "Deaths: Final Data for 2010." Volume 61, Number 4

Gender mortality differences are negligible in this age group, except for homicide, which adversely affects males. By race, blacks are twice as likely to die of accidental causes and 50% more likely to die from homicide than are whites, while whites are twice as likely to die from cancer.

The total death rate for ages 15 to 24 (101 deaths per 100,000) was 50% higher than the U.S. rate (Table 12). The leading three causes of death were: homicide (1 in 3), accidents (1 in 3) and suicides (1 in 5). Deaths due to homicide were nearly three times higher than U.S. rates.

County rates were about equivalent to U.S. rates for accidental deaths, 20% lower for heart disease, and 30% higher for cancer and suicides.

Table 12: Mortality Rates, Marion County and U.S. Ages 15-24, 2010

Causes of death ranked	MC ages 15-24 rate/100,000 (number)	US 2010 Ages 15-24	MC:US Rate Ratio
Total rate per 100,000 All causes	101 (500)	67.7	1.5
Assault (homicide)	31 (152)	10.9	2.8
Accidents	30 (149)	28.3	1.05
Intentional self-harm (suicide)	14 (69)	10.5	1.3
Malignant neoplasms	5 (24)	3.7	1.35
Diseases of heart	2 (10)	2.4	0.8
Chronic lower respiratory diseases	1 (6)	0.3	3.3
Congenital malformations, deformations & chromosomal abnormalities	1 (5)	0.9	1.1
Legal intervention	1 (3)	0.2	5
Nephritis, nephrotic syndrome & nephrosis	1 (3)	0.2	5

Source: DR1934, revised August 2013, and National Vital Statistics Report (NVSR) "Deaths: Final Data for 2010." Volume 61, Number 4

In the 15-24 age group, blacks are twice as likely to die from all causes than are whites, 13 times more likely than whites to die from homicide, and two to three times more likely to die from cancer and heart disease (although both have low rates). Whites, conversely, are 20% more likely to die from accidents and suicides than blacks (Table 13). Males in this age group are three to six times more likely than females to die of the three leading causes, and three times more likely than females to die in general (Table 14).

Table 13: Mortality Rates: Leading Causes by Race, Marion County Ages 15-24, 2008-2012

White ranked cause of death	Age 15-24 white non-Latino rate (Number of deaths/averaged for period)	Age 15-24 black non-Latino rate (Number of deaths/averaged for period)	15-24 black:white rate ratio
1	Accidents: 19 (92)	Accidents: 15 (34)	0.8
2	Intentional self-harm (suicide): 9 (42)	Intentional self-harm (suicide): 7 (15)	0.8
3	Assault (homicide): 4 (20)	Assault (homicide): 52 (117)	13
4	Malignant neoplasms: 2 (9)	Malignant neoplasms: 4 (9)	2.0
5	Diseases of heart: 1 (4)	Diseases of heart: 3 (6)	3
Rate for age group	47	96	2.0

Source: DR1934 Rate per 100,000 (5 year averaged number of deaths/year)

Table 14: Mortality Rates: Leading Causes by Gender, Marion County Ages 15-24, 2008-2012

MC Male ranked cause of death	Male rate/100,000 (average deaths/5 yrs.)	Female rate/100,000 (average deaths/5 yrs.)	Male : female rate ratio
1	Assault (homicide): 33 (133)	Assault (homicide): 5 (19)	6.6
2	Accidents: 29 (117)	Accidents: 8 (31)	3.6
3	Intentional self-harm (suicide): 13 (51)	Intentional self-harm (suicide): 4 (18)	3.3
4	Malignant neoplasms: 3 (13)	Malignant neoplasms: 3 (11)	1
5	Diseases of heart: 1 (5)	Diseases of heart: 1 (5)	1
Total rate for age group	96	29	3.3

Source: DR1934 Rate per 100,000 people (5 year averaged number of deaths/year).

Nationally, firearms-related homicides and suicides are the second and fifth leading causes of death, respectively, for ages 10 to 19.³³ Indianapolis, as one of the 50 largest metropolitan areas in the U.S., has a higher firearms-related mortality rate than its peers (Table 15).

Table 15: Firearm Homicide and Suicide Rates per 100,000, Indianapolis vs. Averages for Largest U.S. Cities, Ages 10-19, 2006-2007

2006-2007	Firearm homicides ages 10-19	Firearm suicides ages 10-19
Indianapolis (city)	12.2 (n=26)	-
US total rate/100,000	5.0	1.7
50 largest MSAs ³⁴	6.8	1.3
62 largest cities	14.7	1.3

Source: MMWR, May 13, 2011 / 60(18);573-578

The Indianapolis firearm homicide rate for ages 10-19 was more than double that of the U.S. and the 50 largest metropolitan areas (2006-2007). However, the Indianapolis rate was slightly lower than the average rate for the 60 largest cities. ³⁵Indianapolis firearm suicide rates for persons ages 10-19 was not reported, but the rate for those over age 19 (7.4 per 100,000) was 1-2 percentage points above the national, MSA and city averages.

For the period 2008-2012, death certificate data indicate that Marion County had 27 firearm deaths among 12- to 17-year-olds: 19 were homicides, seven were suicides, and one was undetermined as to intent.³⁶

Marion County children ages 12-17 had 180 emergency department visits due to assault/homicide; 32 related to attempted suicides (2009-2011).³⁷ In addition, the 2011 Youth Risk Behavior Survey of Indiana high school students found that:³⁸

- 17% carried a gun, knife or other weapon in the past 30 days.
 - o 3.7% carried such a weapon on school property.
 - 6.8% were threatened or injured by others who carried weapons in the past 12 months.
 - o 8.9% were in a physical fight on school property in the past 12 months.

Nationally, rates of violence-related behaviors in school have declined. Many schools impose suspensions or full expulsions for violent behavior, but there is little known about changes in suspension or expulsion policies over time. During 2008-2009, Marion County public school districts ranged between 1 and 4 high school suspensions/expulsions for alcohol/drugs or

weapons violations per 1,000 total K-12 enrollment (Table 16). This estimate likely understates the rate as high school-only populations were not available.

Some districts require anger management mediation, in-school suspensions or other measures for violent behavior. Violent-risk students may drop out of school altogether.

Table 16: High School Expulsion or Suspension Counts and Rates, Marion County Public School Districts, 2008-2009

	2008-2009 population	High school expulsions/suspensions (2008-2009)	High school expulsion rate/1,000
Franklin	8,828	37	4.2
Lawrence	16,119	64	4.0
Warren	12,165	46	3.8
Beech Grove	2,311	7	3.0
Decatur	6,342	19	3.0
Speedway	1,628	4	2.5
Washington	10,224	23	2.2
Wayne	15,384	34	2.2
Perry	14,213	31	2.2
IPS	34,050	71	2.1
Pike	10,713	10	0.9

Source: DR2128 Drug Free Marion County 2011, The Consumption and Consequences of Alcohol and Drugs in Marion County. Table 5-5H.

High Priority Issue B: High Rates of Diagnosed Depression and Suicide

The 2012 Community Health Assessment survey found that among Marion County children ages 12-17, 16% were reported to have been "ever diagnosed" with depression. This is higher than the U.S. lifetime depression rate for youth (12.8%).³⁹ The Healthy People 2020 Leading Health Indicator objective is that only 7.5% of adolescents will have a major depressive disorder event.⁴⁰

Over 600 Marion County respondents were asked to report on a randomly selected child in their household between the ages of 12 and 17. The responses regarding the child's health were weighted to represent all children in this age range in the county. Adult respondents were asked to report on a variety of diagnosed health conditions, health care access and health habits of the child. In the interview, 73% of the respondent adults were the child's principal

caregiver; the average household size was 4.3 persons, 32% of the children were ages 12-14, and 68% were ages 15-17.

National figures for a range of mental health conditions list major depressive episode as the most common diagnosis for ages 12-17 (12.8%), followed by ADHD (11.9%)(Table 17). About 5% of adolescents had an alcohol or illicit drug disorder in the past year, and 1.1% were diagnosed with autism. This does not address the frequency of comorbidities in these categories.

Table 17: Adolescents Ages 12-17 Ever Receiving a Mental Health Disorder Diagnosis, U.S., 2005-2011

		%	(95% C.I.)	
Ever diagnosed with ADHD	2007-2010*	11.9	(11.0-12.9)	
Behavioral or conduct problems	2007^	5.7	(5.2-6.3)	
Autism or autism spectrum disorder	2007-2008*	0.6	(.49)	
Autism or autism spectrum disorder	2009-2010*	1.1	(.8-1.4)	
Depression	2007^	7.1	(6.4-7.8)	
Major depressive episode	2010-2011+	12.8	(12.4-13.3)	
Phobias or fears in last 12 months	2007#	2.4	(1.9-3.1)	
Diagnosis of anxiety	2007#	6.6	(6.0-7.3)	
Alcohol use disorder, past year ⁴¹	2010-2011+	4.2	(3.9-4.4)	
Illicit drug use disorder, past year ⁴²	2010-2011+	4.7	(4.4-5.0)	
Past month cigarette dependence ⁴³	2010-2011+	2.8	(2.6-3.0)	
≥ 14 mentally unhealthy days, past 30 c	8.3	(6.9-9.8)		

- Sources: * NHIS 2007-2010,# NHIS 2007
 - ^ NSCH 2007
 - ⁺ NSDUH 2010-2011
 - ~ NHANES 2005-2010

Suicide

Suicide is the fifth leading cause of death in Marion County youth ages 10-14 and the third leading cause in 15- to 24-year-olds, a rate that is 30% higher than the U.S. rate for that age group (Table 18). Suicide results in approximately 75 deaths per year in the two age groups in Marion County. Males ages 15-24 are three times more likely to die from suicide than females.

Table 18: Suicide as Cause of Death for Ages 10-24, Marion County, 2008-2012 and U.S. 2009

Ranked causes of death Marion County (2008-2012)	MC rate per 100,000 (n)	US 2009 rate per 100,000 ⁴⁴	MC/US Overall ratio
Ages 10-14			
5 th rank: Intentional self-harm (suicide)	1 (4)	1.3	0.77
Ages 15-24			
3 rd rank: Intentional self-harm (suicide)	14 (69)	10.5	1.3

Source: DR1934

Table 19: Suicide Deaths, U.S. Adolescents, 2005-2010

	Age 10-14		Age 15-19	
Source	No.	Rate per 100,000	No.	Rate per 100,000
National Vital Statistics System 2010	267	1.3	1,659	7.5
National Violent Death Reporting System ⁴⁵ 2005-2009	302	1.13	2,088	7.4

Source: Mental Health Surveillance Among Children, 2005-2011. MMWR Supplement 62(2). May 17, 2013.

Suicidal Behavior and Suicide Ideation

Nationally, suicide is the second leading cause of death for youths between the ages of 12-17. Youths ages 10 to 19 had a suicide rate of 4.5 per 100,000 (Table 19). Rates are highest among boys, whites and teens ages 15-19.46

Risk factors for suicidal behavior include a history of mental disorders, especially depression, alcohol and substance abuse, barriers to mental health treatment, stigma in seeking help for mental illness, and having access to a lethal method to commit suicide.⁴⁷

The 2011 Indiana Youth Risk Behavior Survey found that, in the past year, teens reported that:⁴⁸

- Nearly 1 in 3 (29%) had depressive symptoms that interrupted usual activities for 2+ weeks.
- 18.9% seriously considered suicide.
- 13.6% made a suicide plan.
- Over 1 in 10 (11%) had one or more attempts at suicide.

For each suicide death per year, the public health burden includes the 8.6 persons who are hospitalized annually, and the nearly 15 persons in 1,000 who visit the emergency room with

self-inflicted injuries. An additional half of those who engage in suicidal behaviors do not seek help from health care services. 49

In Indiana, 28.5% of high school students reported feeling sad or hopeless in 2011, ranging from 36.2% of female students to 18.7% of males. ⁵⁰ Nationally, depression in children is not associated with race or ethnicity but is associated with female gender, older age, having a household income under 100% of federal poverty level, and having a parent/guardian with less than a high school education. ⁵¹

In Marion County from 2009 through 2011, 12- to 17-year-olds averaged 32 emergency department visits a year for suicide/self-inflicted injury.⁵² Additionally, about 680 mental illness hospitalizations each year involve residents under age 25.⁵³

Following the Surgeon General's call for suicide prevention,⁵⁴ several studies evaluated community efforts to prevent suicide in the young. Risk factors included levels of mental stress, substance abuse, violence victimization, family dysfunction/low levels of social integration, unemployment and lack of access to health care. General public awareness and family support programs may be useful in lowering suicide attempts.⁵⁵

Chronic Health and Mental Health Conditions in Ages 12-17

Results from the 2012 CHA survey indicated that the most prevalent chronic conditions for this age group are asthma, depression and ADHD (Table 20). One in 4 youth (26%) had at least one of the listed chronic conditions, and 1 in 5 (19%) had two or more conditions.

Table 20: Diagnosed Chronic Diseases, Marion County Ages 12-17, 2012

Has a health provider ever told you that has	% Adult respondent, reporting child's diagnosis
Asthma (current)	22
Depression or anxiety	16
ADHD/ADD	15
Diabetes or pre-diabetes	4.3
Hypertension	0.9
Other chronic condition	17
Has one condition of above	26
Has two or more conditions of above	19

Source: DR1983 CHA survey, ages 12-17

Most households with youths ages 12-17 had health care coverage for these children, with nearly equal proportions being covered by Medicaid (Hoosier Healthwise, 42%) or private

coverage (43%). Most adolescents also had one primary care provider (84%) and had seen a dentist in the past year (83%)(Table 21).

Table 21: Health Care Access, Marion County Ages 12-17, 2012

	Child 12-17 (%)	Adult respondent (%)
Has health care coverage	92	79
Medicaid	42	
Private coverage	43	
Other coverage	15.7	
Has a primary care provider	84	69
Has seen a dentist in the past 12 mo.	83	
Saw dentist for pain, past 12 months		26
Used ED in past 12 months	24	

Source: DR1983 CHA survey, ages 12-17

Work group members noted that primary care physicians are unlikely to diagnose a child with depression or refer a child to a mental health consultant. This was attributed to a combination of lack of awareness by parents, limited appointment schedules for family physicians and the stigma attached to seeking mental health care.

Morbidity Measures: Hospital and ED Use for Mental Health Conditions

Over 5,000 Marion County patients age 14 and younger were discharged per year from local acute care hospitals for the period 2009-2011 (Appendix 4). The leading principal diagnosis was respiratory illnesses (mainly asthma and acute upper respiratory illness, at 91.4 per 10,000), making up 31% of discharges.

However, mental disorders (25.6 per 10,000) were ranked second, leading to nearly 490 admissions per year, which was 28% higher than U.S. admission rates. Injury and poisoning (22.5 per 10,000) and conditions originating in the perinatal period (19.6 per 10,000) were also leading causes for admission.

Marion County hospitalization rates for most conditions in patients ages 14 and under were lower than those of the U.S., except for mental disorders (rate ratio of 1.28), blood diseases (RR 1.09) and respiratory illnesses (RR 1.6). Each of these was 6% to 28% higher than that for the U.S.

Gender disparities were seen for respiratory conditions, especially for asthma. For respiratory conditions, males had a 40% higher hospitalization rate than females, and a 37% higher rate due to injuries/poisonings.

Race disparities were seen as well. Black children had higher rates of hospitalization than white children for respiratory conditions (OR 1.6), diseases of blood-forming organs (OR 2.0) and injuries (1.3).⁵⁶

Marion County residents ages 15 to 44 had an average of over 3,400 hospital stays per year, for a rate of 760 per 10,000 (2009-2011), or 8% lower than U.S. rates (2010). Injury, childbirth and pregnancy, cancer, and circulatory diseases were the major causes for admission, but all discharge rates were 10-30% lower than for the U.S. (Appendix 4). The exceptions were rates for infectious disease and diseases of blood-forming organs, which were 30-40% higher than U.S. rates.

The 12-17 age group had an annual average of over 33,000 visits for injury and poisonings, for a rate of 5,594 visits per 10,000 persons in that population. Over 20% of visits were for sprains, 16% for contusions, and 10% for arm fractures.

Annually, county adolescents experienced 700 poisonings by drugs or other medical substances, 500 falls and 400 motor vehicle injuries. Additionally, there was an annual average of 180 visits for homicide/assault by others, 45 due to legal intervention and 30 for self-injury/suicide for 2009-11 (Appendix 4).

High Priority Issue C: High Prevalence of Youth Poverty and Hunger

Nearly 1 in 3 (31.8%) Marion County children lived in households with incomes below the federal poverty level (2010).⁵⁷ That included 17% of children in married-couple households and nearly half (41%-47%) in single-parent households. The percentage of free and reduced lunch students in the county increased from 57.2% in 2008 to 65.9% in 2012, which exceeds the 2012 figure for the state by 36%.

According to the 2012 CHA survey, over 1 in 4 (27%) homes with youth ages 12-17 had incomes below 100% federal poverty guidelines. Nearly 18% of interviewed respondents with children ages 12-17 were unemployed or unable to work. One in four families (26%) reported using food stamps. Moreover, 30% reported occasional or frequent food insecurity, and 13% had to supplement food supplies from local pantries.

In addition, social environment factors pose hazards to Marion County youth. The county's indicators of negative social factors and behaviors in youth exceed those of our peer counties⁵⁸ and state, and exceed national benchmarks. These include (Table 22) high rates of children in poverty, children in single-parent households, sexually transmitted diseases (such as *C. trachomatis*), teen birth rates (especially in ages 17-19), violent crime and substance abuse.⁵⁹

Table 22: Partial Table of Social Environment Indicators, Marion County, 2011

Marion County Health Ranking data	MC 2011	Standard error	National Benchmark	Indiana
High school graduation	81%			84%
Some college	58%	[57-59]	68%	58%
Unemployment	10.0%		5.4%	10.2%
Children in poverty	31%	[28-34]	13%	22%
Inadequate social support	23%	[22-25]	14%	20%
Children in single-parent households	45%	[44-47]	20%	32%
Violent crime rate	1,155		73	367

Source: DR1724 Marion County Health Ranking website, 2011

Poverty Status of Youth

The Marion County rate of children living in poverty (31.8%) exceeds the state rate by 40% and is more than double the national standard.

Nearly half of children in the county (45%) are in single-parent households, a rate about 40% greater than the state rate. Nearly half of children in single-parent households (41%-47%) live in poverty compared to 17% of children living in a married-couple parent household (Table 23).

Table 23: Children's Characteristics, Marion County, 2010

POVERTY STATUS IN THE PAST 12 MONTHS	Total 0-18	Married- couple household	Male householder, no wife, family household	Female householder, no husband, family household
Children in households (poverty status is determined)	220,311	115,065	15,799	88,847
Income in the past 12 months is below poverty level	30.8%	16.8%	41.3%	46.5%

Source: ACS 1 year estimate S0901: CHILDREN CHARACTERISTICS

Compared to five peer urban counties, Marion County was at the bottom of the range of median household incomes at \$43,823 in 2011.

Students are eligible for the free and reduced lunch program if their families meet the federal definition of income at 130% of poverty level or below.⁶⁰ The percentage of county students participating in this program increased from 57.2% in 2008 to 65.9% in 2012.

Free or reduced lunch participation varies by school district, from a low of 35% for Franklin Township students to a high of 80% in Indianapolis Public Schools. Overall, the percentage of

Marion County students meeting this guideline (65.9%) exceeds the state rate of 48.2% by over one-third (37%) (Table 24).

Table 24: Federal Free and Reduced Lunch Populations, Marion County and Indiana public schools, 2010 and 2012

	Marion	Indiana
Free/Reduced Lunch 2012	65.9	48.2
Free/Reduced Lunch 2010	60.7	45.2
% Change 2010 to 2012	+ 8.5	+ 6.62
"Free or Reduced Lunch" Rank among Indiana counties for 2012	1	

Source: DOE, 2012

The proportion of adults 25 years and older who did not finish high school in the county is lower (15%) than the nation (20.1%)(Table 25). One in 10 Marion County residents attended high school but did not graduate, and 15% overall have less than a high school education.

Table 25: Educational Attainment, Marion County, Indiana and U.S. Adults Age 25+, 2011

% over Age 25 with	Marion	Indiana	USA
Less than 9th grade (%)	4.8	4.2	6
9th to 12th grade, no diploma (%)	10.3	9	14.1
Total: Attaining less than HS Diploma (%)	15.1	13.2	20.1

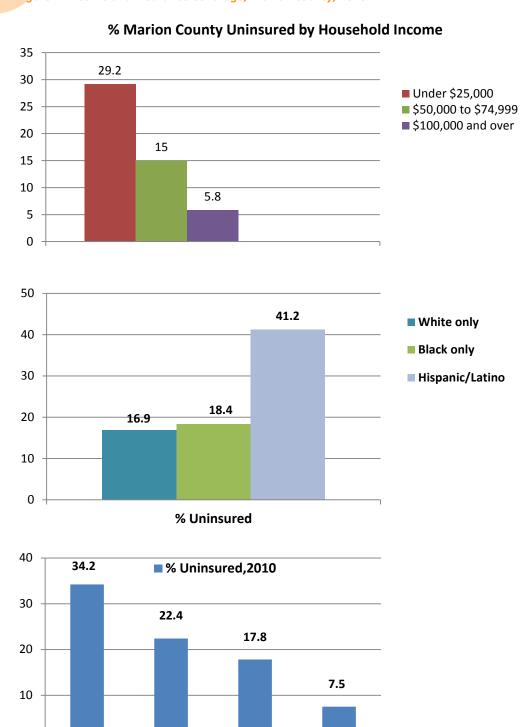
Primary Source: AGS, 2011 est., 2012

Access to Care: Health Care Coverage by Income

In 2010, the American Community Survey studied the relationship between income and health care coverage. While the overall level of non-coverage for Marion County was 17%, this varied widely by income. For families making \$25,000 or less, nearly 30% were without coverage (Figure 2).

Insurance coverage is also associated with ethnicity and educational achievement. Nearly 40% of Hispanic families were uninsured, and 1 in 3 households whose head had less than a high school diploma was uninsured (Figure 2). Fortunately, Indiana Hoosier Healthwise, one of Indiana's Medicaid programs, covers children in low-income households (with household incomes up to 300% of the federal poverty level), and covers the children of poor and Hispanic parents until age 19 under Medicaid while children are in the household.

Figure 2: Income and Insurance Coverage, Marion County, 2010



Some College BA or Higher

Source: ACS, 2010 1-year estimate, Marion County, S2701

H.School

0

< H.School

Risk factors for violence and substance abuse

In the 2012 CHA survey, about a quarter of the households with 12- to 17-year-olds reported poverty indicators such as low income and frequent food insecurity. Equally alarming was the reported access to deadly weapons, especially for vulnerable adolescents. The survey reported that 16% of 12- to 17-year-olds with diagnosed depression had access to potentially lethal means to commit suicide. Eighteen percent of households with 12- to 17-year-olds reported owning a firearm, and an additional 5% had a member of the household who had experienced physical or mental abuse. Another 4.8% reported a member of the household who abused prescription drugs (Table 26).

Table 26: Household Risk Factors, Marion County Ages 12-17, CHA 2012

Child's household:	%
Has sometime or often not been able to afford food for family (food insecurity)	30.5
Uses food stamps, past 12 months	26
Has used a food pantry, past 12 months	13
Has a full-service grocery within a 10-minute walk	57
Has a park/green space within a 10-minute walk	77
Has a community center/library within 10-minute walk	32
Income at 100% federal poverty level	27
Adult respondent is unemployed or unable to work	17.9
Has a firearm	18
Has a member addicted to prescription medication	4.8
Adult respondent feels safe in neighborhood	68

Source: DR1983

Poverty and related conditions may translate into greater risk-taking and disruption of education for Marion County adolescents. Young women in the county ages 15-19 have one of the highest teen pregnancy rates among the five peer counties, at 68 pregnancies per every 1,000 females. Risk taking may extend to experimentation with substance abuse. The Indiana Youth Institute reports⁶¹ that by the end of high school, 65% of Indiana seniors have used alcohol, 40% have smoked tobacco, 38% have smoked marijuana, and over 1 in 4 has been offered or sold drugs while at school.

Risk of drug experimentation increases when a youth changes residences or schools, or if he or she experiences parental divorce, bullying, trauma, or has an absent or abusive parent. Adolescents using drugs are more likely to engage in risky sexual or other behaviors and are more likely to be the victims of physical or sexual assault due to impaired judgment, memory and motivation, at home and at school.⁶²

Moderate Priority Issues

The following issues also have important impacts on the health of our county's 12- to 17-year-olds.

Accidental Deaths

From 2000 to 2010, overall death rates declined by 30% (30 to 20 per 100,000) for ages 10 to 14 (Table 27). An exception to this trend was the 40% increase in accidental deaths in the younger age group.

Table 24: Mortality Rate Change, Marion County Age Group 10-14, 1998-2002 and 2008-2012

Marion County ranked cause of death, 2008-2012	2008- 2012 Rate/100,000	1998-2002 Rate/100,000	Rate ratio	10 year averaged period change in rates +/-
1 Accidents	7	5	1.4	
2 Malignant neoplasms	2	3	0.7	1
3 Assault (homicide)	2	2	1.0	
4 Congenital malformations, deformations & chromosomal abnormalities	1	1	1.0	
5 Intentional self-harm (suicide)	1	1	1.0	
6 Chronic lower respiratory diseases	1	2	0.5	1
Total for age group	20	30	0.7	•

Source: DR1934 revised August 2013

The overall mortality rate for ages 15-24 declined by 60% (151 to 101 per 100,000). The two leading causes, assaults and accidents, each increased by one-fourth or more while suicides, cancers and heart disease declined (Table 28).

Table 28: Mortality Rate Change, Marion County Age Group 15-24, 1998-2002 and 2008-2012

Marion County ranked cause of death, 2008-2012	2008-2012 Rate/100,000	1998-2002 Rate/100,000	Rate ratio	10 year averaged period change in rates +/-
1 Assault (homicide)	31	24	1.29	
2 Accidents	30	24	1.25	
3 Intentional self-harm (suicide)	14	21	0.32	•
4 Malignant neoplasms	5	4	0.50	1
5 Diseases of the heart	2	4	0.20	•
Total for age group	101	151	0.41	•

DR1934, revised August 2013

Traffic Accident Deaths

In 2009, the National Vital Statistics Registry published annual rates of motor vehicle accidental (MVA) deaths for ages 15-24 for the nation, metropolitan statistical areas and major cities. In the U.S., motor vehicle accident deaths made up slightly more than half of all accidental deaths for ages 15-24 (Table 29).

Indianapolis had a rate of over 19 per 100,000 MVA deaths among 15- to 24-year-olds, 2 percentage points above the national rate and 4 percentage points over those of the 50 largest metro areas (13 per 100,000). Among peer cities, Indianapolis was ranked higher than Detroit (Wayne County, MI) and much higher than nearby Louisville, KY.

Table 25: Motor Vehicle Accident Deaths, U.S. Metro Areas, Ages 15-24, 2009

	Rates per 100,000	N
US, all 15-24 MVA deaths	17.3	7,451
US metro areas (n=50)	13	2903
Major cities (n=63)	10.9	769
Indianapolis-Carmel metro	19.2	43
Indianapolis-county balance	19.6	21
Midwest cities:		
Louisville (Jefferson County)	14.8	23
Detroit	17.3	24

Source: MMWR, 2012, 61(28): 524.

The Indianapolis-Carmel metro area MVA death rate for ages 15-24 was 48% higher than that of U.S. metro areas and major cities, and the Marion County rate was higher than that of the major city average (10.9) and other Midwestern cities (14.8-17.3).

Marion County Child Fatality Review Team and Preventable Youth Deaths

A medical team based at Riley Hospital reviews all deaths in Marion County that involve children age 18 and under. They study all information related to the case, including medical records and police, fire, coroner, child protective services and case worker reports. While not all deaths involve county residents, their study does describe the nature of childhood causes of death. It is the team's purpose to determine what proportion of child deaths are preventable.

From 2007 through 2011, 88 fatalities involving 12- to 18-year-olds occurred, of which 61% of the victims were white, 27% were black and 11% were some other race. Nearly 2 in 3 (61%) were male, and most tended to be at the younger end of the age range (mean age 12.4). About 1 in 5 cases (19%) had been previously involved with county Child Protective Services and about 1 in 6 (17%) had involvement with law enforcement (Table 30).

Overall, nearly half (45.5%) were deemed to be accidental deaths (of which 75% were motor vehicle accidents). Overall MVA cases made up 1 in 3 of all examined cases for 12- to 18-year-olds.

Nearly 2 in 5 were homicides (19%) or suicides (21%); 9% were natural deaths and 4.5% were undetermined as to nature.

Of these deaths, 80% were determined to be preventable. Over 1 in 4 (27%) involved a firearm.

Table 30: Child Fatality Review Team Cases, Marion County, 2007-2011

Ages 12-18	Total	% of total cases
Cases reviewed	88	
Race:		
African-American	24	27.3%
Caucasian	54	61.4%
Other	10	11.4%
Male	61	69.3%
Female	27	30.7%
Age range	12.2-17.8	
Prior Child Protective Services involvement	17	19.3%
Prior law enforcement involvement	15	17.0%
Cause of death:		
Natural	8	9.1%
Inflicted (item)	9	10.2%
Firearm	24	27.3%
Asphyxia total:	9	10.2%
Asphyxia non-specific	0	
Asphyxia mech/pos	0	
Asphyxia overlay	0	
Asphyxia strng/smoke	9	10.2%
Electrocution	1	1.1%
Poisoning	2	2.3%
Fall	3	3.4%
Fire/burn	0	
Drowning	2	2.3%
Vehicular	30	34.1%
Undetermined	0	
Manner of death:		
Homicide	17	19.3%
Undetermined	4	4.5%
Natural	8	9.1%
Suicide	19	21.6%
Accidental	40	45.5%
Preventable death	71	80.7%
Undetermined	3	3.4%

Source: Dr. Roberta Hibbard, Feb. 2013, Marion County Fatality Review Team, n.d.

Behavioral Risk: Texting While Driving

A 2012 AT&T survey of 1,200 cellphone-using teenagers ages 15 to 19 examined adolescent texting-while-driving in the U.S.⁶³ The teens all had texting technologies on a smartphone (71%) or cellphone.

Nearly half (43%) admitted to texting while driving, 60% to texting while at a stoplight. Moreover, 75% said texting while driving is common among their friends. Almost all (97%) said texting while driving is dangerous or very dangerous, but 1 in 3 said texting and driving was "very common."

The best predictors of a teen's texting and driving behavior:

- Smartphone user
- Heavy text user (over 100+ texts a day), of which almost 90% expect an answer within 5 minutes
- Has full- or part-time job, lives in a large metro area
- No parental rule against texting while driving
- Poor parental role modeling (11% say their parents text while driving; 77% agree with a statement that adults in general "text all the time").

Fines (up to \$500), license suspension and phone applications limiting use while driving are reported by teens as the most effective deterrents of texting while driving.

High Rates of Substance Abuse, Including Alcohol and Tobacco

The 2011 Indiana Youth Risk Behavior Survey (YRBS) found Indiana high school youth reported that in the previous month: ⁶⁴

- Nearly 1 in 5 (18%) smoked tobacco; 13.8% smoked daily.
- Nearly 1 in 5 (19%) engaged in binge drinking (5+ drinks on one occasion).
- 1 in 5 smoked (20%) marijuana.

One in four high school seniors in the U.S. smokes (YRBS 2009) – a rate that has remained steady since 2007. This compares to 1 in 3 young adults and 1 in 5 adults. Nearly 88% of all first cigarette use occurs before age 18 among adults who become daily smokers. Lifetime use of cigarettes for Indiana high school seniors has decreased from 66.4% in 1993 to 39.9% in 2011, however. Nationally, 13% of adolescents ages 12-17 smoked at least once in the past 30 days (current smoker), ranging from 3.3% of 12- to 13-year-olds to 24.4% of 16- to 17-year-olds (1999-2004).

Certain social indicators are associated with smoking uptake, including low academic achievement, greater numbers of smoking peers, few social bonds and exposure to smoking in movies. While many youth assume smoking is related to weight loss, there is no evidence for reduction in weight among smokers.

Youth are particularly susceptible to tobacco marketing strategies, and tobacco companies' prevention strategies have not proven effective. Mass media campaigns and local tax policies have been found to be effective in reducing tobacco use among youth.

Over half of youth smokers report trying to quit in the past 12 months. The Indiana Tobacco "QuitLine" has recently extended services to teens age 13 and older for a limited program of phone consultations. Cessation treatment for youth, however, continues to be limited to physician-prescribed therapies for those age 18 and older.

The 2011 Indiana YRBS also found:

- Over 1 in 3 (37%) Indiana youth had smoked marijuana.
- 65% tried alcohol, mostly with friends or family.
- Over 1 in 5 (22%) had non-medical use of a prescription drug.

The Indiana Youth Institute reports⁶⁵ that by the end of high school, 65% of seniors have used alcohol, 40% have smoked tobacco, 38% have smoked marijuana and over 1 in 4 have been offered or sold drugs while at school.

Students are at risk of drug experimentation during stressful situations, such as moving to a new home or school or experiencing parental divorce or a traumatic event. 66 Those at highest risk often have a mental health issue or have an absent or abusive parent.

The effects of alcohol or drugs diminish judgment, memory and motivation, affecting learning and behavior patterns at home and at school.⁶⁷ Those using drugs are more likely to engage in risky sexual or other behaviors, and more likely to be the victims of a physical or sexual assault or a motor vehicle accident.

Chronic Addictions: The Role of Alcohol

An estimated 8,570 youth ages 12-17 in Marion County had a chronic addiction problem, according to the Department of Mental Health and Addictions, or about 10.7% of that age group (2008).⁶⁸ Drug addiction treatment most frequently involved alcohol (54%), marijuana (48%) or cocaine (33%), with more than half of treatments addressing poly-substance abuse in Marion County.

According to the Indiana Center for Health Policy, Indiana adults ages 18 to 25 had the highest rates of addiction (22.6%), followed by youth ages 12- 17 (10.7%).⁶⁹ Nationally, it is estimated that 1 in 14 adolescents ages 12-17, or 7.7% of that age group,⁷⁰ has a drug or alcohol problem that requires treatment, but less than 7% are actually treated.⁷¹ Only 211 youth under 18 were treated in Marion County in 2008, barely 5% of all treated individuals.⁷²

Alcohol is the most frequently used and abused substance. In Hoosiers ages 12 and older, 50.1 percent drank alcohol in the past month, and 22.3 percent engaged in binge drinking.⁷³ Youth between ages 18 to 25 had the highest rates of binge drinking (41.5%) in the past month. Almost 1 in 10 Indiana youth ages 12 to 17 (9.5%) engaged in binge drinking.

Alcohol and Tobacco Sales in Marion County

There are 1,985 licensed liquor vendors and 638 registered tobacco vendors in Marion County,⁷⁴ or 36.3 alcohol vendors and 8.8 tobacco vendors per 1,000 youth ages 12-17.⁷⁵

Marion County had a 20% greater arrest rate for alcohol-related crimes and 50% higher drugrelated arrest rate than the state for 2009. Neither arrest rate for the county was the greatest in the state (Table 31).

Table 31: Drug and Alcohol Arrests, Marion County and Indiana, 2009

	Alcohol arrests/100,000		Drug arrests/100,000	
		Peer county range		Peer county range
	_		_	
Marion County	1,476	[320-2,152]	1,047	[150-1,751]
		mean		mean
Indiana	1,204	1,309	688	555
Rate ratio MC: IN	1.2		1.5	

Source: 2009 FBI Uniform Crime Report data

Prescription Drug Misuse and Other Substance Abuse

The Indiana Prevention Resource Center (IPRC) annually surveys Indiana youth on their substance abuse and other risk behaviors. They began inquiring about abuse of prescription pain medications in 2010 (Figure 3). By 2011, 6.7% of 12th graders in Central Indiana had a monthly misuse of prescription pain killers, and over 16% had a lifetime use. Similarly, eighth graders had 3.5% and 6% usage, respectively, in the same survey (data not shown).

In both cases, painkiller use exceeded tranquilizer and other prescription drug misuse. This preference is also reflected in all-ages usage rates for the state and the nation (Table 32).

Table 262: Lifetime and Past-year Non-medical Use of Psychotherapeutics, All Ages, Indiana 2002-2004 and U.S. 2010

	Lifetime use		Past-year use	
	Indiana	U.S.	Indiana	U.S.
All psychotherapeutics	20.70%	20.40%	7.60%	6.30%
Pain relievers	15.00%	13.70%	6.10%	4.80%
OxyContin	2.50%	2.40%	0.80%	0.70%
Tranquilizers	9.10%	8.70%	2.80%	2.20%
Sedatives	3.90%	3.00%	0.40%	0.40%
Stimulants	8.30%	8.50%	1.70%	1.10%

The Consumption and Consequences of Alcohol, Tobacco and Drugs in Indiana: A State Epidemiological Profile 2011 (National Survey on Drug Use and Health). Indiana rates are based on annual National Survey on Drug Use and Health (NSDUH) averages from 2002 through 2004. U.S. rates are based on 2010 NSDUH survey results.

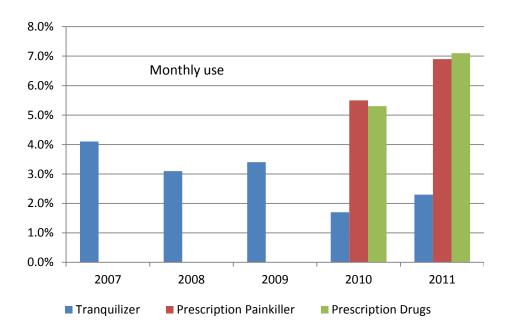
The IPRC found that:

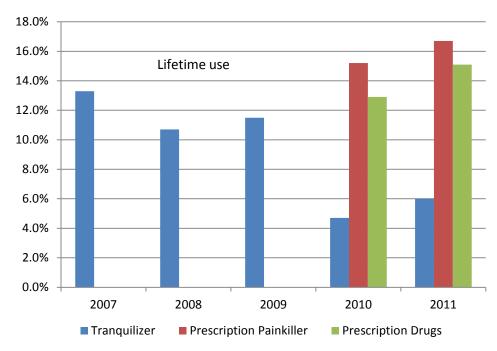
- Pain medication misuse is the most frequently misused category.
- Females are more than twice as likely to misuse all medical prescriptions.
- Whites are 10 times more likely to misuse compared to blacks.

In the past year, 8.2% of Hoosiers ages 12 to 17 used prescription pain medications for non-medical purposes, compared to 6.5% of U.S. teens.⁷⁷

In a 2012 comparison, Central Indiana 12th graders reported significantly lower lifetime substance abuse then their state peers⁷⁸ regarding tobacco (35% vs. 39.9%) and alcohol (60% vs. 65%). However, rates for marijuana use (37%), prescription drug misuse (13.2%), cocaine use (4%) and other illicit drug use were similar.

Figure 3. Monthly and Lifetime Use of Tranquilizer, Prescription Painkiller and Prescription Drugs, Central Indiana Self-Report by 12th Graders, 2007-2011





Source: Indiana Prevention Resource Center (IPRC), Indiana Youth Survey Annual Monograph.http://www.drugs.indiana.edu/indiana-youth-survey/indianasurvey

Prescription Drug Poisoning Deaths

Nationally, the rate of poisoning deaths from prescription medications has been increasing rapidly. Between 2000 and 2009, poisoning death rates for teens ages 15-19 increased by 91%, from 1.7 to 3.3 per 100,000.⁷⁹ In contrast, unintentional injury deaths declined by 33% in the same period for that age group (from 33.4 to 22.3 per 100,000), mostly as a result of a 41% decline in motor vehicle death rates.⁸⁰

Among U.S. youth ages 10-14, poisoning death rates increased 30% between 2000 and 2009.⁸¹ The percentage of poisoning deaths among those ages 15-19 years with prescription drugs as a contributing cause increased from 30% to 57%. Strategies to reduce the misuse of prescription drugs include appropriate prescribing, proper storage and disposal, discouraging medication sharing, and state-based prescription drug monitoring programs.

Asthma, Respiratory Disease and Smoking

In the 2012 Community Health Assessment survey, adult respondents who reported on a child ages 12-17 in their household noted that 22% of that age group had currently been diagnosed with asthma (Table 33). 82 The prevalence of current asthma for county children ages 12-17 is double the national rate for that age group (11.4%). 83 The Indiana 2011 YRBS found that 23.7% of Indiana high school students had been diagnosed with asthma; 67% of those students still had asthma (current asthma). 84

In addition, 19% of adult respondents with children ages 12-17 reported that the household had someone who smoked inside the home. Moreover, 29% of the respondents were themselves current smokers. This indicated a high likelihood that even if young people are themselves non-smokers, at least 1 in 4 is exposed at some time to secondhand smoke.

Table 33: Chronic Diseases, Marion County Adolescents Ages 12-17, and Adult Respondents, CHA 2012

Has a health provider ever told you that has	% Adult respondent, reporting child's diagnosis
Asthma (current)	22
ADHD/ADD	15
Diabetes or pre-diabetes	4.3
Hypertension	0.9
Depression or anxiety	16
Other chronic condition	17
Has one condition of above	26
Has two or more conditions of above	19

Source: DR1983 CHA Survey 2012

Emergency Department (ED) Use for Respiratory Conditions

The leading primary diagnoses in ED visits are two categories: injury and poisoning, and respiratory visits (1 in 5 visits each) for ages 0-14 and 15-24. The younger age group has 1 in 8 visits due to nervous <u>conditions</u> and 1 in 15 due to infectious diseases. The older age group has 1 in 10 visits each for genitourinary causes and pregnancy complications.⁸⁵

Children 14 years old or younger accounted for an average of 78,000 emergency department visits per year, for a rate of 4,129 per 10,000 persons (2009-2011)(Table 34). The leading causes were injury/ poisoning and respiratory conditions, each contributing 1 in every 4.5 visits, or over 17,000 visits per year for each cause. Nervous system disorders (1 in 8), and infectious and parasitic diseases (1 in 15) were also major reasons for visits.

Males have about a 30% higher rate of visits for injury and poisoning than females, and slightly higher respiratory visit rates. Females have a threefold increased rate of visits over males for genitourinary conditions.

Table 34: Emergency Department Visits, Marion County Ages 0-14, 2009-2011

Ages 0-14	Visits per year	Rate/10,000 population
Total (all causes)	78,432	4,129.4
Injury and poisoning (1 in 4.5 visits)	17,280	909.8
Respiratory system (1 in 4.5)	17,275	909.5
Symptoms, signs and ill-defined conditions	15,588	820.7
Nervous system and sense organs (1 in 8)	9,304	489.8
Infectious and parasitic diseases (1 in 15)	5,187	273.1
Skin and subcutaneous tissue	4,314	227.1
Digestive system	3,014	158.7
Musculoskeletal system and connective tissue	1,686	88.8
Diseases of the genitourinary system	1,490	78.4
Conditions originating in the perinatal period	516	27.2
Mental disorders	350	18.4
Endocrine, nutritional immunity disorders	339	17.9

Source: DR1953—Principal Diagnosis for ED visits; chart reflects 97% of ED visits

Residents ages 15- to 24-years-old had an average of 69,000 annual visits for the period 2009-2011, for an average rate of 5,260 per 10,000 persons (Table 35). The most common cause was injury and poisoning, making up 1 in 5 visits (20%). Next most common were respiratory conditions (10%), with nearly 7,000 visits per year, followed by genitourinary conditions (9%) and childbirth-related issues (8.5%).

Males had a 20% higher rate of injury and poisoning visits than females. Otherwise females had generally higher rates of visits for all conditions than did males, especially for infectious and parasitic diseases, respiratory and genitourinary conditions, and complications of pregnancy.

Table 35: ED Ranked Primary Diagnosis by Number of Visits, Marion County Ages 15-24, 2009-2011 Annual Average

	Ages 15-24	Visits per year	Rate/10,000 population
	Total (all causes)	69,001	5,260.9
1	Injury and poisoning (1 in 5 visits)	14,188	1,081.7
2	Symptoms, signs, and ill-defined conditions	13,895	1,059.4
3	Respiratory system (1 in 10)	6,827	520.5
4	Genitourinary system (1 in 10)	6,440	491.0
5	Complications of pregnancy, childbirth, etc.	5,682	433.2
6	Musculoskeletal system and connective tissue	4,702	358.5
7	Digestive system	3,995	304.6
8	Skin and subcutaneous tissue	3,488	265.9
9	Nervous system and sense organs	2,829	215.7
10	Infectious and parasitic diseases	2,397	182.7
11	Mental disorders	2,017	153.8

Source: DR1953—Principal Diagnosis for ED visits; chart reflects 97% of ED visits

Children with Autism Spectrum Disorders (ASD)

The CDC has estimated that 1 in 88 children develop Autism Spectrum Disorders (including autism, Asperger's Syndrome, and related illnesses). While affecting all races and socioeconomic strata, ASD is five times more likely to occur in boys than in girls. Parents who have one child with ASD have a 2%-18% chance of having a second child who is also affected. Such children often have a wide variety of mental health comorbidities.⁸⁶

CDC has monitored ASD across 14 sites and found the prevalence of autism can vary from 1 in 46 to 1 in 150 in children 8 years of age, the average age at which most diagnosed children had sought services. Using this surveillance network, the CDC has estimated that the prevalence of ASD increased 23% during 2006 to 2008, and 78% during 2002 to 2008.

Medical costs for children with ASD are estimated to be six times higher than for children without ASD. In addition to medical costs, intensive behavioral interventions for children with ASD can cost \$40,000 to \$60,000 per child per year. ⁸⁷

A recent CDC estimate (NHIS 2007-2010) reports the overall prevalence of ASD to be 1.1% for the population of 12- to 17-year-olds, up from 0.6% in 2008. Applying that proportion to the over 70,000 Marion County children ages 12-17 results in an estimate of some 790 youth who may be diagnosed with ASD. In Indiana, a convenience sample suggests the ASD incidence rate may be as high as 1 in 77 children (Table 36).

Table 36: Indiana Children with Autism, 1999-2000 and 2010-2011

	Child count in 1999-2000	Child count in 2010-2011	Increase
Age 3-5	456	978	2.1
Age 6-11	1,624	5,302	3.3
Age 12-17	844	4,753	5.6
Age 18-21	153	718	4.7
Age 6-21	2,621	10,773	4.1
Age 3-21	3,077	11,751	3.8

Source: Reported by the State of Indiana Dept. of Education per Section 618 of IDEA to U.S. Department of Education, Office of Special Education Programs

High Risk Populations

Foster children

As of 2012, 10,000 foster children live in Indiana, and 1,963 of them live in Marion County,⁸⁸ making up 0.85% of all Marion County children under age 18.⁸⁹ These are children who have been removed from their homes by the Department of Child Services (DCS) due to abuse or neglect as "children in need of services" (CHINS). Indiana children in foster care have increased by 44.8% from 2002 to 2010, while the national trend has been a decrease of 21.8% in that same period.⁹⁰

According to the Indiana Youth Institute website, 2,690 children in Marion County are designated by the DCS as "substantiated cases of child abuse or neglect" (Table 37).⁹¹ While this number is lower than the nearly 3,000 in 2008, rates per 1,000 resident children under age 18 since 2008 have remained steady at 20-22 per 1,000, up from less than 15 per 1,000 during 2006-2008.

Table 27: Child Abuse and Neglect Rate per 1,000 Children Under Age 18 (Rate Per 1000), Marion County, 2006-2011

	2006	2007	2008	2009	2010	2011
Rate	14.1	12.0	14.9	22.2	21.7	19.7
Number			2,999	3,041	2,982	2,690

Source: IYI http://datacenter.kidscount.org/data/bystate/Rankings.aspx?state=IN&ind=1130&dtm=2467

Unfortunately, it is not clear how many children are returned to their birth families and how many remain in foster care, but it appears that over 70% of those in the substantiated abuse/neglect caseload spend some period in foster care. These foster children are at higher risk than other youth for high rates of unemployment, incarceration, homelessness and reliance on public benefits. Upon emancipation at age 18, foster "alumni" face hardships including: 92

- Only half (54%) of foster care alumni complete high school.
- 22.2% experience homelessness.
- 33.2% have household incomes at or below the poverty line.
- 25% are incarcerated within the first two years of emancipation.
- 25.2% are diagnosed with post-traumatic stress disorder—double the rate of U.S. veterans.

A 2011 pilot initiative between Indiana DCS and the National Center for Youth Law (NCYL) is now focusing on the educational achievement of foster kids. The identified challenges facing these youth are behavior issues, special education, enrollment in appropriate schools or classes, need for academic support, attendance, need for extended educational screen, help for students transitioning to college or career, education support from parent or caregiver, missing education records or credit, early childhood education and extra educational opportunities.

Homeless Youths Under Age 18

In Marion County, 342 youths under age 18 (20% of the 1,599 total) were sheltered during the annual homeless count in January 2013. Over 151 families were sheltered with an average of 2.2 children (334 total children).⁹³ There were also 14 women who were pregnant and sheltered and five who were pregnant and unsheltered. Ninety-six of the homeless population were foster children (28% of homeless youths under 18).⁹⁴

The McKinney-Vento Act requires public schools to identify students without permanent housing, and it allows administrators to immediately enroll this population and transport them to and from their school of origin. Using the McKinney-Vento definition, which includes families who are doubled-up with family or friends, a total of 3,553 county students were living in homeless conditions (85% of these children are doubled-up; 9% are in shelters or unsheltered).

Of the local school districts, Indianapolis Public Schools and Wayne and Washington township districts contain 38%, 13.5% and 13% of the county's homeless children, respectively, roughly proportional to their student population sizes. Forty percent of the homeless students were ages 13-18.

Children who are homeless for over a year are four times more likely to experience developmental delays than their peers, are twice as likely to repeat a grade and are twice as likely to be identified with learning disabilities."⁹⁵

Intimate Partner Violence

In Indiana, 40.4% of women and 26% of men reported experiencing rape, physical violence and/or stalking by an intimate partner during their lifetimes. ⁹⁶ These rates do not differ significantly from national rates. Forty percent of women rape victims experienced their first rape before age 18. One quarter of male rape victims were first raped before age 10.

Within these figures, nearly 1 in 5 (18.3%) women and 1 in 71 men (1.4%) reported being raped in their lifetimes.

In the 2011 Youth Risk Behavior Surveillance Survey (YRBSS) of Indiana high school students,⁹⁷ 1 in 10 reported being "physically forced to have sexual intercourse when [they] didn't want to" (9.8% overall). Of the 50% of all students who were sexually active, 30.2% (15% of all high school students) had already had four or more partners, putting them at high risk of mental and physical health problems.

Sexually Transmitted Infections

HIV/AIDS

HIV/AIDS is the 10th leading cause of death among Marion County males ages 15-24. HIV incidence exceeds U.S. rates among late adolescents, especially among young adult males. HIV incidence rates among 15- to 19-year-olds are more than twice that of the U.S. (Table 38) and rising (Figure 4). Among younger residents, HIV and AIDS prevalence in those under age 13 is nearly twice that of the U.S. (Table 38 and 39). Black youths have both incidence and prevalence rates three times greater than whites in the county.

Table 38: HIV Incidence and Prevalence Per 100,000, Marion County, 2009-2011

	HIV incidence per 100,000 – 2009-2011					
Age (years)	Marion	County	•		MC vs. US	
Age (years)	Cases	Rate	Cases	Rate	Rate ratio	
12-17	<15	5.1	1	_	1	
Under 13	< 5	0.2	602	0.4	*	
15-19	46	24.5	6,161	9.8	2.5	
Total, ages 0-19	47	6.2	6,827	9.0	0.7	
		HIV prevalence per 100,000 – As of 31-Dec-2011				
		HIV prevaler	nce per 100,000	0 – As of 31-Dec	c- 2011	
	Marion	HIV prevaler County		0 – As of 31-Dec	-2011 MC vs. US	
Age (years)	Marion Cases					
Age (years) 12-17		County	U	.S.	MC vs. US	
	Cases	County Rate ^y	U	.S.	MC vs. US	
12-17	Cases 8	County Rate ^y 11.2	Cases	.S. Rate ^v –	MC vs. US Rate ratio	

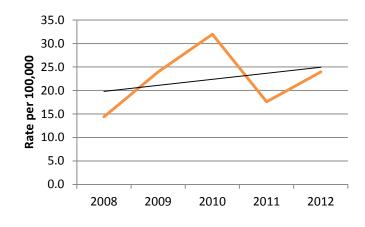
DR1960 Dept. Of Epidemiology *Did not meet criteria for statistical significance

Table 39: AIDS Incidence and Prevalence per 100,000, Marion County, 2009-2011

	AIDS incidence per 100,000 – CY 2009-2011						
Ago (voors)	Marion	U.	MC vs. US				
Age (years)	Cases	Rate	Cases	Rate	Rate ratio		
12-17	< 5	0.5	-	-	-		
Under 13	< 5	0.2	47	0.1	*		
15-19	7	3.7	1,273	6.4	0.6		
Total, ages 0-19	8	1.1	1,448	1.9	0.6		
	AIDS	prevalence per 10	00,000 – As	of 31-Dec-20	011		
Ago (voors)	Marion County		U.	MC vs. US			
Age (years)	Cases	Rate	Cases	Rate	Rate ratio		
12-17	6	8.4	-	-	_		
Under 13	2	1.2	353	0.7	1.7		
5-19	8	12.8	2,216	10.5	1.2		
Total, ages 0-19	10	4.0	3,293	4.0	1.0		

DR1960 Dept. Of Epidemiology *Did not meet criteria for statistical significance

Figure 4: HIV Incidence (Any Stage), Marion County Youths Ages 15-19, 2008-2012



Source: DR2152

Unfortunately, young residents have the lowest prevalence of HIV testing; some 60% of U.S. HIV-infected youth ages 15-25 do not know their HIV status.⁹⁸ A disproportionate number of new HIV infections occur among youth, especially minorities and men who have sex with men (MSM). Some recent findings from this 2012 report:⁹⁹

- 26% of new HIV infections were among youths: 57% among blacks, 20% among Latinos, and 20% among whites (2010).
- Nearly 75% of the 12,200 new HIV infections among youths were attributable to male-to-male sexual contact.
- Young males who have sex with males are at increased risk for HIV because of high rates of HIV in potential sex partners. They are also more likely to engage in HIV-related risk behaviors (e.g., unprotected sexual intercourse and injection drug use) than other male or female high school students.

Syphilis and Chlamydia

Marion County incidences of sexually transmitted infections (STI) continue to be high. Its rates of syphilis and chlamydia have led the nation at times. The Maternal, Infant and Child work group reported on the high rates of chlamydia infection in delivering mothers in the county. It is known that early sexual debut, multiple partners, exchange of sex for drugs, and unprotected sexual intercourse increase the potential for co-STI infections, as well as the acquisition of HIV.

Chlamydia is used as an indicator of access to care and health behavior for the County Health Rankings website. In 2012, Marion County had an all-ages rate of 753 chlamydia infections per 100,000, which was higher than the national average of 587 per 100,000, but within the range of five other peer Midwestern counties (568-1,040)¹⁰⁰. All-ages chlamydia rates per census tract are mapped below, indicating the higher risk tracts in the center of the county (Figure 8). The 15- to 19-year-old population made up less than 15% of all county cases.¹⁰¹

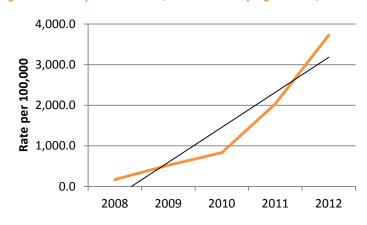
Tables 40 and 41 indicate the county's rate of chlamydia infection in ages 10-19 (2,310.8 per 100,000) and a similarly high rate for gonorrhea (455.4), though these rates appear to be only slightly higher than the U.S. levels. Syphilis rates for this age group, on the other hand, appear to be lower than the U.S. rates (Table 42). However, rates of all three STIs have increased in ages 15-19 since 2008 (Figure 5, Figure 6, Figure 7).

Table 40: Chlamydia Incidence, Marion County and U.S., Ages 10-19, 2011

Ago (voors)	Marion	County	U.S.		MC vs. US
Age (years)	Cases	Rate ^y	Cases	Rate ^y	Rate ratio
10-14	8	13.4	15,405	134.6	0.1
15-19	1,446	2,310.8	459,029	2,082.7	1.1
Total, ages 10-19	1,446	2,310.8	459,029	2,082.7	1.1

Source: DR1960

Figure 5: Chlamydia Incidence, Marion County Ages 15-19, 2008-2012



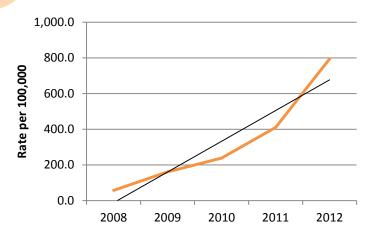
Source: DR2152

Table 41: Gonorrhea Incidence, Marion County and U.S., Ages 10-19, 2011

Ago (voors)	Marion	County	U.S.		MC vs. US
Age (years)	Cases	Rate ^y	Cases	Rate ^y	Rate ratio
10-14	0	0.0	3,223	-	N/A
15-19	285	455.4	88,139	399.9	1.1
Total, ages 10-19	285	233.5	91,362	272.8	0.9

Source: DR1960

Figure 6: Gonorrhea Incidence, Marion County Youth Ages 15-19, 2008-2012



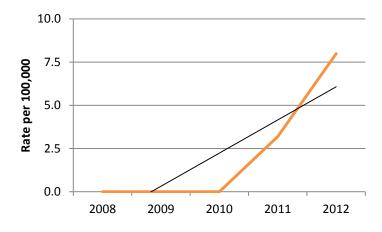
Source: DR2152

Table 42: Primary and Secondary Syphilis Incidence by Age, Marion County and U.S. Ages 10-19, 2011

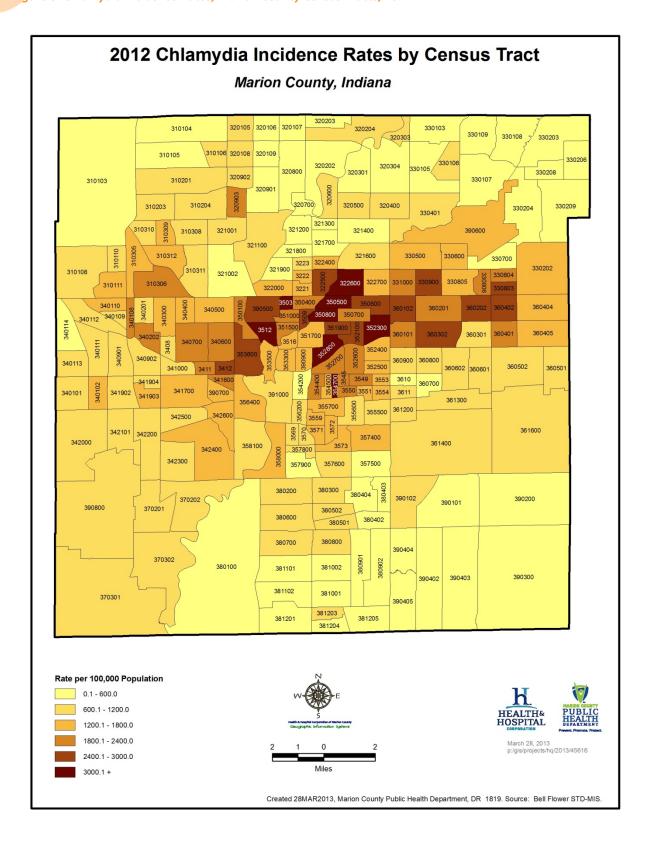
Ago (Voors)	Marion	County	US		MC:US
Age (Years)	Cases	Rate ^y	Cases	Rate ^y	Rate Ratio
10-14	0	0.0	15	0.1	-
15-19	< 5	1.6	864	3.9	0.4
Total, ages 10-19	< 5	0.8	879	2.6	0.3

Source: DR1960

Figure 7: Syphilis Incidence (Primary/Secondary), Marion County Youth Ages 15-19, 2008-2012



Source: DR2152



Summary and Conclusions

The work group ranked the following as the three most pressing issues for ages 12-17:

- High prevalence of youth poverty and hunger
- High violent death rates (homicide), with high rates of disparities, including bullying and assaults in school
- High rates of diagnosed depression, seen in national and CHA survey results (and related issues such as suicide and substance abuse).

Secondary issues included motor vehicle accidents and accidental injury; high rates of substance abuse, asthma/respiratory disease and smoking; high rates of autism diagnosis; poor health and social outcomes among foster and homeless children; and sexual violence, sexual risk taking and STI transmission. Ensuring the well-being of our adolescents requires that we continue efforts to relieve the poverty and violence in their lives and provide them with medical, mental and educational assistance.

This report, with others from the assessment, will form a baseline for the Community Health Improvement Plan, which is being developed.

Appendix 1: Community Health Assessment Work Group, Ages 12-17

Name: Representing:

Catrina Anderson Department of Child Services

Jeff Catlett Midtown Mental Health, Children and Adolescents

Ernest Davis MCPHD Voice Tobacco program

Katy Ellis MCPHD Tobacco

Christina Ferroli Purdue Extension

Dennis Fortenberry, MD, MS IU School of Medicine, Adolescent Medicine

Anne Graves YMCA of Greater Indianapolis

Roberta Hibbard, MD Riley Hospital, Marion County Child Fatality Review Team

Rolanda Jones MCPHD Action Health Center

Byron Johnson MCPHD Violence Prevention

Tiffany Nichols Minority Health Coalition

Jen Pittman IndyParks

Ann Snarski; Miranda Camara MCPHD Action Health Center

Wanda Spann Roddy HHC Future Promises

Gina Weathers Indianapolis Metropolitan Police Dept.

Rick Whitten; Lee Ann Harris Boys and Girls Clubs of Indianapolis

Greg Zimet, PhD IU School of Medicine, Adolescent Medicine

Staff:

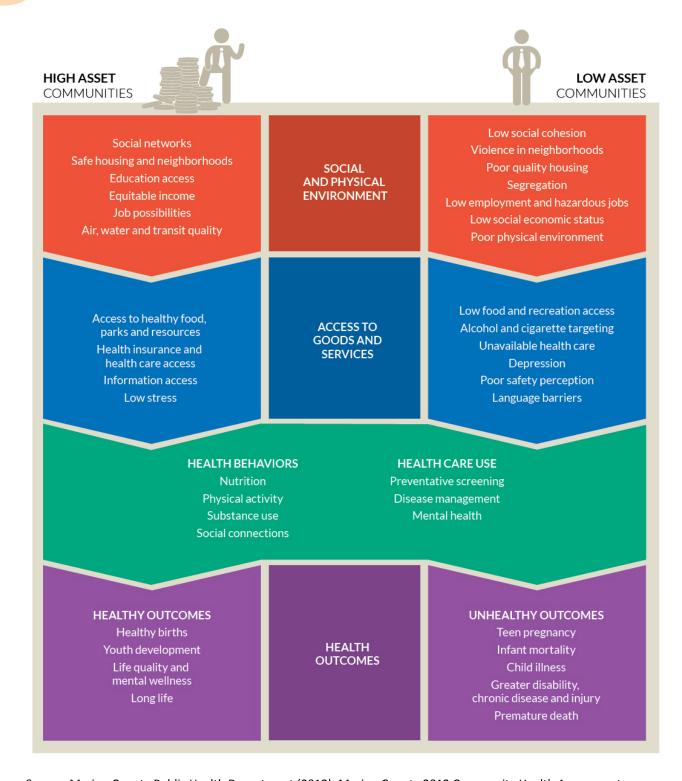
Joe Gibson, PhD

Millie Fleming-Moran, PhD

Shandy Dearth, MS

Tammie Nelson, MPH

Appendix 2: Social Determinants of Health



Source: Marion County Public Health Department (2012). Marion County 2012 Community Health Assessment.

Appendix 3: 2012 Marion County: County Health Rankings

	Marion County	Margin of error	National benchmark*	Indiana	Rank among 92 counties
Health Outcomes			benemiark		82
Mortality					81
Premature death (Years of Potential Life Lost)	9,229	9,008-9,450	5,466	7,687	
Morbidity					75
Poor or fair health	18%	17-19%	10%	16%	
Poor physical health days	3.6	3.4-3.9	2.6	3.6	
Poor mental health days	3.8	3.6-4.1	2.3	3.6	
Low birth weight	9.2%	9.0-9.4%	6.0%	8.1%	
Health Factors					85
Health Behaviors					70
Adult smoking	26%	24-27%	14%	24%	
Adult obesity	30%	29-32%	25%	31%	
Physical inactivity	26%	25-28%	21%	27%	
Excessive drinking	16%	15-18%	8%	16%	
Motor vehicle crash death rate	12	11-13	12	15	
Sexually transmitted infections	753		84	341	
Teen birth rate	67	66-68	22	44	
Clinical Care					19
Uninsured	18%	17-19%	11%	16%	
Primary care physicians	602:1.0		631:1.0	889:1.0	
Preventable hospital stays	74	72-75	49	78	
<u>Diabetic screening</u>	81%	79-82%	89%	82%	
Mammography screening	63%	62-66%	74%	64%	
Social & Economic Factors					91
High school graduation	81%			84%	
Some college	58%	57-59%	68%	58%	
<u>Unemployment</u>	10.0%		5.4%	10.2%	
Children in poverty	31%	28-34%	13%	22%	
Inadequate social support	23%	22-25%	14%	20%	
Children in single-parent households	45%	44-47%	20%	32%	
<u>Violent crime rate</u>	1,155		73	367	
Physical Environment	-			-	92
Air pollution-particulate matter days	7		0	2	
Air pollution-ozone days	7		0	3	
Access to recreational facilities (% population)	10%		16	10	
Limited access to healthy foods (%population)	5%		0%	7%	
Fast food restaurants (% of total restaurants)	55%		25%	50%	

Source: DR1724

Appendix 4: Health Priorities Ranked by Work Group, June 27, 2013

Ages 12-17 Priority Ranks	High Priority	Medium Priority	Need Data
Diagnosed chronic substance abuse	2		
Nonmedical use of prescription medications			
Smoking and asthma/respiratory disease	1		
Binge drinking			
Depression (including suicide, bullying)	4		
ADHD			3
Health risks and issues in foster children	2		
Sexual violence	2		1
Sexual risk taking, sexually transmitted infections	1		1
Motor vehicle accidents	1		
Violence, homicide	4		
Poverty, hunger	5		

Appendix 5: Hospitalizations (2009-2011) Vs. U.S. (2009)

Marion County Ages 0-14: Hospitalizations 2009-2011 Vs. U.S. 2009

Principal Diagnosis (period 2009-2011)				
AGEGROUP 0-14	MC cases	MC Rate	US Rate	MC:US Rate
Rate per 10,000	N (AVG)			Ratio
Total (All Causes)	5552	292.31	326.0	90
Diseases of the respiratory system	1735	91.4	86.1	106
Mental disorders	487	25.6	20.1	128
Symptoms, signs, and ill-defined conditions	428	22.5	*	
Injury and poisoning	424	22.3	24.9	90
Conditions originating in the perinatal period	373	19.7	28.5	69
Diseases of the digestive system	351	18.5	29.2	63
Congenital anomalies	248	13.0	*	
Diseases of the skin and subcutaneous tissue	218	11.5	12.0	96
Infectious and parasitic diseases	210	11.1	17.7	63
Diseases of the nervous system and sense organs	204	10.8	18.3	59
Diseases of the blood and blood-forming organs	180	9.5	8.7	109
Diseases of the genitourinary system	178	9.4	10.9	86
Endocrine, nutritional, metabolic diseases, immunity disc	174	9.2	21.3	43
Diseases of the musculoskeletal system	77	4.1	*	
Diseases of the circulatory system	63	3.3	*	
Neoplasms	55	2.9	*	
Complications of pregnancy, childbirth, puerperium	24	1.3	*	
Supplementary classifications	120	6.3	9.6	66

Source: DR1941, Marion County residents' hospitalizations, revised August 2013

Principal diagnosis, hospitalizations 2009-2011	Marion Co., 15-44 years (N)	Marion Co., 15-44 years, rate per 10,000	U.S., 15-44 years, rate per 10,000 (2009)	M.C.: U.S. rate ratio
Total (all causes)	3,462	759.64	838.8	0.91
Infectious and parasitic diseases	154	20.93	15.2	1.38
Neoplasms	238	13.69	19.1	0.72
Endocrine, nutritional and metabolicimmunity disorders	123	26.96	31.5	0.86
Diseases of the blood and blood-forming organs	51	12.51	9.5	1.32
Mental disorders	191	74.53	85.4	0.87
Diseases of the nervous system and sense organs	201	13.49	19.3	0.70
Diseases of the circulatory system	223	29.42	33	0.89
Diseases of the respiratory system	127	28.02	32.5	0.86
Diseases of the digestive system	252	49.84	74.3	0.67
Diseases of the genitourinary system	144	23.75	36.3	0.65
Complications of pregnancy, childbirth, and the puerperium	383	37.36	39.8	0.94
Diseases of the skin and subcutaneous tissue	66	13.4	17.4	0.77
Diseases of the musculoskeletal system and connective tissue	204	12.52	22.7	0.55
Congenital anomalies	64	1.7	3	0.57
Certain conditions originating in the perinatal period	3	.04	**	
Injury and poisoning	869	51.64	64	0.81
Supplementary classifications	58	9.61	330.8	0.03
** No US data given				

Source: DR1941, Marion County residents' hospitalizations, revised August 2013

Appendix 6: Marion County Injury-Related ED Visits, Ages 12-17 (2009-2011)

ICD9 INJURY/POISONING OR E-CODE			
Ages 12-17 (2009-2011)	N	Rate/ 10,000	% total visits
Total (All Causes) (n) (E-codes)	33,173	5594.3	
Sprains and strains of joints.	6665	1124.0	20.1%
Contusion with intact skin surface	5268	888.4	15.9%
Fracture of upper limb	3472	585.5	10.5%
Certain traumatic complications	2322	391.5	7.0%
Open wound of head, neck, and trunk	2198	370.7	6.6%
Open wound of upper limb	2037	343.5	6.1%
Superficial injury	1865	314.5	5.6%
Fracture of lower limb	1252	211.1	3.8%
Open wound of lower limb	1155	194.8	3.5%
Intracranial injury, excluding skull fracture	872	147.0	2.6%
Other and unspecified effects of external causes	832	140.3	2.5%
(E)Other accidents	823	138.8	2.5%
Poisoning by drugs, meds, bio'l substances	717	120.9	2.2%
(E)Accidental falls	538	90.8	1.6%
Dislocation	480	81.0	1.4%
(E)Motor vehicle traffic accidents	417	70.3	1.3%
Toxic effects chiefly nonmedicinal	352	59.3	1.1%
Burns	303	51.2	0.9%
Fracture of skull	288	48.6	0.9%
Effects of foreign body entering via body orifice	255	43.0	0.8%
Complications of surgical/medical care	212	35.7	0.6%
(E)Homicide and injury purposely inflicted	180	30.4	0.5%
(E)Drugs, meds, & bio'l substancesadverse effects in therap[y]	113	19.1	0.3%
Fracture of neck and trunk	93	15.7	0.3%
(E)Accidental poisoning by othersubstances	75	12.7	0.2%
Other	52	8.7	0.2%
(E)Other road vehicle accidents	47	7.9	0.1%
(E)Accidents due to natural/environmental factors	45	7.6	0.1%
(E)Legal intervention	45	7.6	0.1%
Crushing injury	38	6.5	0.1%
(E)Surg medical procedures caus[ing]abnormal reaction	33	5.6	0.1%
(E)Suicide and self-inflicted injury	32	5.3	0.1%
Internal injury of thorax, abdomen, pelvis	25	4.2	0.1%
Late effects of injuries, poisonings, toxic effects	17	2.8	0.1%

Source: DR2028 Injury related ED visits (E) E-codes for injury related ED visits

Appendix 7: CHA Survey Results, Ages 12-17: Child Health Habits

Health Status of Child

The adult respondents reported 39% of the randomly selected children 12-17 were overweight or at risk of overweight. Other risk factors: Nearly all these children (90%) watched over two hours of recreation screen time per day (for an average of over four hours per day), and 29% of the respondents who resided in the home were current smokers.

Weight	%
% underweight	4.4
% normal weight	56.0
% at risk of overweight	19
% overweight	20
Watches 2+ hours recreational screen time/day	89.9
Average hours / day	4.3
Is active 60+ minutes per day	92
Someone smokes in [child's] home (yes)	19
Adult respondent is a smoker	29

Source: DR1983

Sources

http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39

http://www.countyhealthrankings.org/#app/indiana/2012/marion/county/1/overall

http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=41#285350

LHI TU 1.2 Tobacco use by adolescents. 18.1% adolescents in grades 9-12 smoked cigarettes in the past 30 days (2011). Target: 16.0%.

¹ From: Healthy People.gov http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39
"Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Conditions (e.g., social, economic, and physical) in these various environments and settings have been referred to as 'place.' In addition... the patterns of social engagement and sense of security and well-being are also affected by where people live. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins. Understanding the relationship between how population groups experience 'place' and the impact of 'place' on health is fundamental to the social determinants of health—including both social and physical determinants."

² Violence-Related Firearm Deaths Among Residents of Metropolitan Areas and Cities --- United States, 2006—2007, MMWR Weekly / Vol. 60 / No. 18 May 13, 2011 http://www.cdc.gov/mmwr/PDF/wk/mm6018.pdf

³ HP2020 MHMD-4.1 Reduce the proportion of adolescents aged 12 to 17 years who experience major depressive episodes (MDEs). Baseline: 8.3 percent of adolescents aged 12 to 17 years experienced a major depressive episode. 2008. Target: 7.4 percent. Data Source: National Survey on Drug Use and Health (NSDUH), SAMHSA. MDE defined as having at least 5 of 9 depressive symptoms in a 2 week period, in the past 12 months.

⁴ ISDH 2011 Youth Risk Behavior Survey Results: Indiana High School Survey -- Detailed Tables.

⁵ ISDH 2011 Youth Risk Behavior Survey Results: Indiana High School Survey -- Detailed Tables.

⁶ DR1960.

⁷ A program of the U.S. Justice Department in several cities to reduce urban gun violence and gang-related activities.

⁸ See note 1. From: Healthy People.gov.

⁹ From: *Stats Indiana*-- 2010 Census Data, Counties, U.S. Census Bureau on February 10, 2011. http://www.stats.indiana.edu/topic/census.asp

¹⁰ RWJF County Health Rankings website, Marion County, 2012.

¹¹ DHHS, Community Health Status Indicators (CHSI) 2009 (most recent year), Marion County, IN. http://communityhealth.hhs.gov/Demographics.aspx?GeogCD=18097&PeerStrat=3&state=Indiana&county=Mario

n Peer Midwestern urban counties are Louisville (Jefferson Co.) KY, Cincinnati (Hamilton Co.) OH, Columbus (Franklin Co) OH, Nashville (Davidson Co.) TN, and Milwaukee (Milwaukee Co.) WI, as suggested by the CHSI website, above.

¹² HP2020 D-3 Reduce the diabetes death rates: Target: 66.6 deaths per 100,000. U.S. baseline: 74.0 deaths per 100,000 population were related to diabetes in 2007http://www.healthypeople.gov/2020/topics-objectives/topic/diabetes/objectives

¹³ HP2020 Adult Obesity NWS-9. Reduce the proportion of adults who are obese. Baseline: 33.9 percent of persons ages 20 years and older were obese in 2005–2008 (age adjusted to the year 2000 standard population). Target: 30.5 percent.

¹⁴ HP2020 Tobacco Use TU 1.1.

¹⁵ HP2020 PA-1. Reduce the proportion of adults who engage in no leisure-time physical activity. Baseline: 36.2 percent of adults engaged in no leisure-time physical activity in 2008 (age adjusted to the year 2000 standard population). Target: 32.6 percent.

¹⁶ HP2020 LHI Binge drinking, SA-14.3. Reduce the proportion of persons 18 and older engaging in binge drinking during the past 30 days. Baseline: 27.1% percent of adults aged 18 years and older (2008). Target: 24.4 percent.

- ¹⁷ DHHS, Community Health Status Indicators (CHSI) 2009 (most recent year), Marion County, IN. http://communityhealth.hhs.gov/Demographics.aspx?GeogCD=18097&PeerStrat=3&state=Indiana&county=Mario
- n Peer Midwestern urban counties are Louisville (Jefferson Co.) KY, Cincinnati (Hamilton Co.) OH, Columbus (Franklin Co) OH, Nashville (Davidson Co.) TN, and Milwaukee (Milwaukee Co.) WI, as suggested by the CHSI website, above.
- ¹⁸ Census 2010, Table Summary File 2, PTC3.
- ¹⁹ Census 2010, Table CPH-1-16 Summary of Population and Housing Characteristics, Indiana, Marion County.
- ²⁰ CDC, 2012, Health Insurance Coverage: Early release of estimates from the National Health Insurance Survey, January-September 2011, by Martinez ME, Cohen RA, NCHS, released 3/20/2012. "Public" coverage includes Children's Health Insurance (CHIP), Medicaid, and state sponsored plans.
- ²¹ Indiana Youth Institute, Marion County.
- ²² U.S. Department of Education, National Center for Education Statistics, Homeschooling in the United States: 2003; and Parent Survey (Parent: 1999) and Parent and Family Involvement in Education Survey (PFI:2003 and PFI:2007) of the National Household Education Surveys Program.
- ²³ IDOE-definition, IYI website. "Drop-outs" include all students in grades 6-12 who: leave school before graduation without transferring to another school; fail to return when expelled; transfer to adult programs, technical schools, GED programs, or to programs not leading to a high school diploma; and students who are incarcerated in adult institutions. It is not known what proportion of students in this category enroll in Graduate Equivalency Diploma (GED) programs.
- ²⁴ IPS, Lawrence Warren, and Speedway districts all lost enrollment population over the 5-year period, with an overall loss of 1,241 K-12 students. IPS lost over 5,000 students to other districts and charter schools.
- ²⁵ The number and percentage of students who graduated in four years or less. Does not include charter schools in county level aggregates due to DOE reporting. Indiana Department of Education, http://www.doe.in.gov/improvement/accountability/data-center
- ²⁶ HP2020 AH-5.1. Increase the proportion of students who graduate with a regular diploma 4 years after starting 9th grade. Target: 82.4 percent.
- ²⁷ Heron M. Deaths: Leading causes for 2009. National vital statistics reports; vol 61 no 7. Hyattsville, MD: NationalCenter for Health Statistics. 2012.
- ²⁸ Violence-Related Firearm Deaths Among Residents of Metropolitan Areas and Cities --- United States, 2006—2007, MMWR Weekly / Vol. 60 / No. 18 May 13, 2011 http://www.cdc.gov/mmwr/PDF/wk/mm6018.pdf
 ²⁹ Ihid
- ³⁰ DR1998, Deaths Due to Firearm injury, Marion County.
- ³¹ ISDH 2011 Youth Risk Behavior Survey Results: Indiana High School Survey -- Detailed Tables.
- 32 DR1937, death rates calculated for 1998-2002 and compared to 2002-2012.
- ³³ Violence-Related Firearm Deaths Among Residents of Metropolitan Areas and Cities --- United States, 2006—2007, MMWR, May 13, 2011 / 60(18);573-578.
- ³⁴ The largest MSAs make up 54% of the U.S. population.
- ³⁵ Violence-Related Firearm Deaths Among Residents of Metropolitan Areas and Cities --- United States, 2006—2007, MMWR, May 13, 2011 / 60(18);573-578
- ³⁶ DR1998, Deaths due to firearm injury, Marion County.
- ³⁷ DR1953 ED and injury related visits.
- ³⁸ ISDH 2011 Youth Risk Behavior Survey Results: Indiana High School Survey -- Detailed Tables.
- ³⁹ National rates: ages12-17, 12.8% with major depressive episode (NHIS 2007-2010).
- ⁴⁰ HP2020 MHMD-4.1. Reduce the proportion of adolescents aged 12 to 17 years who experience major depressive episodes (MDEs). Baseline: 8.3 percent of adolescents aged 12 to 17 years experienced a major depressive episode. 2008. Target: 7.4 percent Data Source: National Survey on Drug Use and Health (NSDUH), SAMHSA. MDE defined as having at least 5 of 9 depressive symptoms in a 2 week period, in the past 12 months.
- ⁴¹ Alcohol use disorder is defined as alcohol dependence or abuse, based on definitions found in DSM-IV. 4th ed, text revision. Washington, DC: American Psychiatric Association; 2000 (Source: American Psychiatric Association).

- ⁴² Illicit drug use disorder is defined as illicit drug dependence or abuse, based on definitions found in DSM-IV. Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used non-medically, including data from original methamphetamine questions but not including new methamphetamine items added in 2005 and 2006.
- ⁴³ Nicotine (cigarette) dependence is based on criteria from the Nicotine Dependence Syndrome Scale or the Fagerstrom Test of Nicotine Dependence. (Source: Substance Abuse and Mental Health Services Administration. Results from the 2009 National Survey on Drug Use and Health. Vol II. Technical appendices and selected prevalence tables. Rockville, MD: US Department of Health and Human Services; 2010.
- ⁴⁴ Heron M. Deaths: Leading causes for 2009. National Vital Statistics Reports; vol 61 no 7. Hyattsville, MD: National Center for Health Statistics. 2012.
- ⁴⁵ All rates are age adjusted using the 2000 U.S. standard population (all races, both sexes). NVDRS exists in 16 states: Alaska, Colorado, Georgia, Kentucky, Maryland, Massachusetts, New Jersey, New Mexico, North Carolina, Oklahoma, Oregon, Rhode Island, South Carolina, Utah, Virginia and Wisconsin.
- ⁴⁶ Mental Health Surveillance among Children—United States, 2005-2011. MMWR May 17, 2013 supplement. Vol 62/Number 2.
- ⁴⁷ Ibid.
- ⁴⁸ ISDH 2011 Youth Risk Behavior Survey Results: Indiana High School Survey -- Detailed Tables
- ⁴⁹ Crosby AE, Han B, Ortega LA, et al. Suicidal thoughts and behaviors among adults over 18 years—United States, 2008-2009. MMWR, 2011:60(13).
- ⁵⁰ Mental Health and Substance Abuse Needs Assessment for Marion County, 2010 Center for Health Policy, pg 9.
- ⁵¹ Mental Health Surveillance among Children—United States, 2005-2011, Op. Cit.
- ⁵² DR1953.
- ⁵³ DR1941.
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- ⁵⁵ Lubell KM, Harber-Singer H, Gonzalez B. State suicide prevention planning: a CDC research brief. Atlanta, GA: 2008.
- ⁵⁶ DR1941 Hospitalizations for 2009-2011 for Marion County. National Hospital Discharge Survey, 2009, Age standardized to US Census 2000.
- ⁵⁷ American Community Survey, 2012.
- ⁵⁸ DR2077.
- ⁵⁹ DR1724 Marion County Health Ranking website, 2011.
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Data Source: Indiana Department of Education, http://www.doe.in.gov/improvement/accountability/data-center

- ⁶¹ Indiana Youth Institute, Issue Brief, Youth Drug Use in Indiana. May 2012. IYI.org
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- ⁶³AT&T Teen Driver Survey http://www.att.com/Common/about us/txting driving/att teen survey executive.pdf
- ⁶⁴ ISDH 2011 Youth Risk Behavior Survey Results: Indiana High School Survey -- Detailed Tables.
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- ⁶⁶ Indiana Youth Institute, Issue Brief, Youth Drug Use in Indiana. May 2012. IYI.org.
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- ⁶⁸ Center for Health Policy, IUPUI, Mental Health and Substance Abuse Needs Assessment for Marion County, 2010. 10H03.
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- ⁷⁰ T.P. Mulye et al., Trends in Adolescent and Young Adult Health in the United States, Journal of Adolescent Health 45 (2009) 8–24.
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- ⁷² Mental health and Substance Abuse Needs Assessment for Marion County, 2010 Center for Health Policy. TEDS, 2008.
- ⁷³ Binge drinking is defined as having five or more drinks on the same occasion at least once in the past month.
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- ⁷⁵ At present 11 hookah bars can be identified in Marion County, and they are licensed by the Department of Code Enforcement. The bars are clustered in 3 major areas of the county: Broad Ripple, downtown Indianapolis and the Lafayette Road area. Their effect on youth smoking behavior is unknown.
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- ⁷⁷ The Consumption and Consequences of Alcohol, Tobacco and Drugs in Indiana: A State Epidemiological Profile 2011. Indiana State Epidemiology and Outcomes Workshop, Indiana University, Center for Health Policy, Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2012.
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- ⁸² The survey is weighted such that prevalence findings for children represent all children in the county.
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- ⁸⁹ Marion County had an estimated population of 228,998 children under age 18 in 2011. Indiana Youth Institute, Marion County: http://www.iyi.org/resources/pdf/marion.pdf
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- ⁹¹ Indiana Youth Institute, Marion County: http://www.iyi.org/resources/pdf/marion.pdf
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⁹⁸ Vital Signs: HIV Infection, Testing, and Risk Behaviors Among Youths — United States, MMWR 2012 61(47);971-

⁹⁹ Ibid.

¹⁰⁰ The peer counties include Columbus, OH (Franklin Co.), Cincinnati, OH (Hamilton Co.), Louisville, KY (Jefferson Co.) and Milwaukee, WI (Milwaukee Co.). ¹⁰¹ DR1784.



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Executive Summary

In the spring of 2012, the Marion County Public Health Department (MCPHD) called together a steering committee of providers, consumers and experts in the field of public health to guide MCPHD in producing a countywide Community Health Assessment (CHA). The goals of the CHA are to:

- 1) Describe the community health status of Marion County, with comparisons to its urban peers and to national standards
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health and the pathways between social determinants of health, intermediate outcomes and final health outcomes
- 4) Prioritize the identified issues.

The CHA is divided into reports on specific age ranges. Each report is the product of a work group of topical experts, community-based partners and MCPHD staff who identified problems, trends, and factors for the leading causes of mortality and morbidity for an age group, and determined how the county's performance differed from national indicators. Each identified issue represents a specific population group, risk factor(s) or access to care issue that may require unique intervention strategies. The reports, taken together, will inform the Community Health Improvement Plan of MCPHD.

The objective of this report is to focus attention on issues affecting Marion County residents ages 18-34. The work group identified three issues that deserved the highest priority for community action:

 High impact of violent death rates, especially in individuals ages 18-24, and the disruption of individual and community lives through high incarceration rates.

Homicide is the leading cause of death for the county's 18- to 24-year-olds, occurring at three times the U.S. rate. While declining over the past decade, homicide remains the second leading cause of death for 25- to 34-year-olds, occurring at twice the U.S. rate and exceeding the rates of many other large, urban metropolitan statistical areas (MSAs). Both age groups have homicide rates four to six times the Healthy People 2020 (HP2020) objective of 5.5 per 100,000. During 2009-2011, 15- to 24-year-olds accounted for more than 700 homicide-related emergency department (ED) visits each year. An additional 1,000 per year involved 25- to 44-year-olds.

Marion County suicide rates for this age group are 20% to 30% higher than the U.S. rate and are the third leading cause of death. Firearms were involved in 24% of suicides and 67% of homicides in this age group. The public health burden of suicide, apart from the 1.5 deaths per 1,000 population each year, includes 8.6 persons per 1,000 who are hospitalized, and nearly 15 persons in 1,000 who visit EDs annually. About half of those who engage in suicidal behaviors do not seek help from health care services.²

Homicide rates exhibit high racial inequalities, disproportionately affecting black males, who are six to 13 times more likely to die from homicide than white males. The county experiences 8.4 aggravated assault arrests per 1,000 population, with the highest rate and greatest increase (from 2007 to 2012) seen in Center Township. Over 4,000 ex-offenders are released back into Marion County each year, the majority of whom have mental health, substance abuse and low education impediments for re-entering the workforce.

High prevalence of depression and poor mental health days, and high rates of prescription painkiller abuse.

In the 2012 CHA survey, 17% of 18- to 34-year-old respondents reported a medical diagnosis of depression and stated that they had had four to five poor mental health days in the past month. Behavioral Risk Factor Surveillance System (BRFSS) survey data from 2008-2010 show 47% of Marion County 18- to 25-year-olds reporting at least 14 poor mental health days in the previous month, which is four times the U.S. rate.

About 14% of Marion County's 18- to 25-year-olds abuse painkilling drugs, similar to the U.S. rate. Lifetime and past year non-medical abuse of any prescription drug is highest in Indiana's 18-25 age group, 12.1% and 6.1%, respectively, followed by the 25-34 age group, at 5.9% and 1.8%, respectively.³ Misuse of painkillers was statistically higher in the state for both groups than their U.S. peers. Over 4% of 18- to 34-year-old CHA survey respondents reported that a member of their household abused prescription drugs.

• High levels of poverty indicators are concentrated in this age group.

The CHA 2012 survey showed that 50% of this age group had only a high school or lower education, 19% were unemployed (distinct from those not in the labor force due to student or homemaker status), 34% lacked health insurance, and over 30% reported food insecurity in their households. One-third (31%) of the households of respondents ages 18-34 met 100% of the federal poverty threshold (FPT). In addition, about 1 in 5 households had annual incomes below \$20,000 and another fifth had incomes of \$20,000 to \$25,000.

The 2010 American Community Survey found 1 in 4 (25.8%) of the county's 18- to 34-year-olds met 100% of FPT, including one-third of the 18- to 24-year-olds (33.7%). Poverty rates have

been increasing as well. County residents of all ages under 100% of FPT grew from 11.4% in 2000 to 21% in 2012.

Moderate priority issues include:

- High prevalence of sexually transmitted infections
- Obesity
- Self-reported health risk factors
- High smoking rates
- Specific high-risk populations.

A Call to Action

Young adults have lost ground, financially and in health status, compared to their older peers. The recent recession has reduced available employment and post-secondary education opportunities, increasing poverty and neighborhood instability and increasing the likelihood of violence.

Community efforts to retain adolescents in high school, employ area graduates and promote their further education needs must be redoubled if areas of high poverty in Marion County are to reverse these indicators.

Current initiatives

- Eskenazi Health, in partnership with local police, criminal justice, mental health and
 housing agencies, is breaking the cycle of gun-related violence and death in young
 adults with "Prescription for Hope" (RxH). It enrolls youth hospitalized with
 gunshot/knife injuries and provides them with "wrap-around" services, reducing
 recidivism and injury and promoting successful re-integration into their communities.
- Providers such as Eskenazi Health and Midtown Mental Health are increasing their depression screenings, as are certain workplaces, such as the Chamber of Commerce.

Next Steps

All CHA reports will form a baseline for the Community Health Improvement Plan. This report is being disseminated among MCPHD's programs and partners and other public health organizations. It will be posted on the MCPHD website as well as on partner sites. The Epidemiology Department will work with partners to develop and monitor vital statistics for birth and death changes, hospitalization rates and injury data to track population health status changes.

Community Health Assessment Goals & Process

When MCPHD convened a steering committee to help assess the health of Marion County residents, members agreed to a series of person-centric (age group) reports that would be advised by work groups of Steering Committee members, topical experts, MCPHD staff and community-based partners.

Each work group helped identify problems, trends, causal factors and existing resources to address those factors for a defined population. They prioritized the identified issues and planned the dissemination of the report.

This report presents the most impactful health issues affecting Marion County residents ages 18 to 34. Work group members are listed in Appendix 1.

The goals of the CHA are to:

- 1) Describe the community health status of Marion County, with comparisons to its urban peers and, where appropriate, to national standards
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health and the pathways between social determinants of health,⁴ intermediate outcomes and final health outcomes
- 4) Prioritize the identified issues.

Work groups studied population-based data from county resident birth and death certificates, hospitalizations and emergency department discharges, and literature sources. Comparative data for each of these sources were developed from national vital statistics, national hospital discharge studies, Behavioral Risk Factor Surveillance System surveys, the County Health Rankings website, and the Healthy People 2020 Objectives. In addition, a telephone survey was conducted with 5,000 county residents in 2012 to assess the health of the community.

Following review of the data, each work group met to identify and prioritized the lead health issues. They: 1) reviewed data concerning people in that age group; 2) discussed the issues that

Purpose of CHA

- Increase awareness of community health issues
- Describe social determinants & risk factors
- Compare Marion County to peer cities and nation
- Identify health disparities in county
- Prioritize community health needs
- Provide database for MCPHD's Community Health Improvement Plan
- Provide basis for planning programs& policies
- Engage coalitions and partners
- Improve health status of community

arose from that information, considering their own expertise and experience; and 3) prioritized those issues.

Each work group was charged with identifying three top priority issues for its age group using the following criteria:

- Number of people affected
- Severity of the impact
- Degree of disparity or inequity
- Any trend of increasing impact
- Availability of resources and proven solutions
- Degree of secondary impacts
- Potential for measurable change within five years
- Community lack of awareness and resources.

Some of these considerations may conflict with each other, such as an issue that needs more resources but already has the public's attention. Balancing these considerations was left to the judgment of the work group after a thorough discussion of the information available.

The findings of the work groups will be used to develop a Community Health Improvement Plan with significant involvement of community members. The plan will describe how our community will address the high priority issues identified in the CHA.

Social Determinants of Health

Social factors of low educational achievement, reduced employment opportunities and family income, and low family stability and security tend to cluster as precursors to poor health patterns and outcomes. These "social determinants of health" tend to influence a broad spectrum of health measures across all ages (Appendix 2).

Educational status in particular affects health both directly, through ability to understand health risks and health care directives, and indirectly, through reduced disposable income and access to health care. Poverty and low education status are associated with teen pregnancy, substance abuse, high proportions of female-headed households and social instability. High school completion rate (indicated by proportion of 9th graders who graduate from high school in four years) is listed among the social and economic factors contributing to health in the County Health Rankings (Appendix 3).

From 2000-2010, Marion County's population grew by 5% to 903,393, while the proportion of its citizens living in poverty and/or not covered by health insurance both increased.⁵ These two

social determinants of health are reflected in the County Health Rankings⁶ and used by MCPHD as primary indicators of health status. The Health Rankings include social determinants such as education, employment levels, community poverty level and health care access, as well as key health indicators such as infant mortality and adult obesity rates.

Social indicator measures from the County Health Status Indicator website are compared to those of five Midwestern urban counties whose populations range between 500,000 and 1 million (Table 1) to place Marion County in context with other large urban areas. The peer urban counties are Louisville, KY (Jefferson Co.), Cincinnati, OH (Hamilton Co.), Columbus, OH (Franklin Co.), Nashville, TN (Davidson Co.) and Milwaukee, WI (Milwaukee Co.).

Table 1: Social Context Indicators, Marion County and Peer Counties, 2006-2010

Indicator	2010	2006-2010 change	Peer county range
Adults >25 years old with high school diploma or passed General Educational Development Test (GED) (2010)	84.1%	NA	84.1- 89.5
Total poverty rate	20.8%	+5.2%	15.7-19.9
Cost-burdened homeowners ^d (>30% of income in housing)	26%	NA	24.0 - 28.8
Individuals with Supplemental Security Income (SSI) ^a	4.7%	+ 1.7%	_
Families with food stamps (SNAP)	14.1%	-	NA
Person with disabilities (2010) ^b	12.7%	-	NA
Unemployment rate (2005-2010) ^c	10%	+ 5.0%	8.1- 10.7
Median income (2010)	\$39,393	- 6.4% (Marion County)	-4.0 - 14.1%
Person with health insurance coverage (%)	83.3%	- 0.8%	81.8 - 87.7

Source: Indyindicators.iupui.edu, pg 9. ^a ACS 2006-2009. ^b ACS 2009-10. ^c IN Dept. of Workforce Development. ^d ACS 2005-2009.

Other comparisons used in this report reflect comparisons of Marion County death rates (Table 2) and health indicators (Table 3) with published rates for the U.S. and HP2020 target objectives for certain health conditions. Where appropriate, rates are compared using rate ratios (RR).

Table 2: Mortality Rates, Marion County and U.S. 2010, and Healthy People 2020 Objectives

Mortality Indicator (per 100,000)	MC 2010	U.S. 2010	HP2020
Homicide	12.0	5.3	5.5
Motor vehicle injury	10.4	11.3	12.4
Coronary heart disease	116.6	113.6	100.8
Lung cancer	61.0	47.6	45.5
Female breast cancer	24.0	22.1	20.6

Source: Indyindicators.iupui.edu--CDC WONDER 2010; NVSR "Deaths: Final Data for 2010." vol 61 no 4, Table 16. Age-adjusted Rates per 100,000.

Table 3: BRFSS Health Indicators, Marion County and U.S. Prevalence, and Healthy People 2020 Objectives

Indicator	MC 2008-2010	U.S. 2010-2011	HP2020
Adults with BMI => 30 (obesity) ⁸	35.6%	27.8% (2009- 2010)	30.5%
Diabetes (2010)	11.2%	9.2%	NA
Current smoker (% of adults >18 years of age)	29.6%	21.2%	12%
Adults age 20+ who report no leisure physical activity ⁹	30.7%	26.2%	32.4%
Eat 5+ fruits and/or vegetables per day (2009)	24.5%	27.3%	NA
Binge drinking ¹⁰	20.5%	18.3%	24.4%

Source: Indyindicators.iupui.edu— BRFSS Survey Data 2011. http://apps.nccd.cdc.gov/brfss-smart/MMSACtyRiskChart.asp?yr2=2009&CtyCode=38&cat=FV&MMSA=39&qkey=4415&grp=0

County Health Rankings is a collaborative project developed by The Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. The rankings measure health outcomes and health factors for counties in each of the 50 states. Of the multiple risk factors available, Marion County is at the top of the range of five Midwestern urban counties in the areas of smoking prevalence, rates of homicide, teen births and sexually transmitted infections (STIs), and lowest in median household income and graduation rates (Table 4).¹¹

Among Indiana counties, Marion County ranks as high as 13th (on access to care) and as low as 92nd (on air quality). Of the 15 factors measured, ¹² Marion County's ranking improved in seven categories, remained unchanged in three, and declined in five (health factors, education status, diet and exercise, access to care, and quality of care), between 2010-2011.

Understanding where the county encounters challenges, and exceeds national objectives, helps to frame the priorities set for improving health in our population.

Table 4: County Health Rankings Indicators, Marion County and Peer Counties, 2011

Indicator*	Marion County	Peer county* range
Adult smoking (%)	26	20-26
Adult obesity (%)	30	27-32
Adults not physically active (%)	27	25-28
Diabetes (%)	10	9-12
Adult STI (chlamydia) rate/100,000	860	97-860
Motor vehicle accident death rate/100,000	12	9-16
Homicide rate/100,000	14	9-14
Adult binge drinking (%)	15	12-22
9th grade cohort graduation (%)	60	60-75
Children in poverty (age 0-18) (%)	24	20-27
Teen birth rate (women age 15-19) a	68	47-68

Source: DR2099 *Peer counties include Louisville (Jefferson Co.), KY; Cincinnati (Hamilton Co.), OH; Columbus (Franklin Co.), OH; Nashville (Davidson Co.), TN and Milwaukee (Milwaukee Co.), WI. *Years of data used for each indicator may vary, or be aggregated across several years.

http://www.countyhealthrankings.org/app/#/indiana/2013/marion/county/outcomes/overall/snapshot/by-rank

Background

Population Profile: Ages 18-34

The 18-34 age group (population 233,558) makes up approximately 26% of the county's total population, with a breakdown of roughly 10% ages 18-24, 8.5% ages 25-29 and 7.5% ages 30-34 (Table 5). Males make up 48% of the 18-34 age cohort. The population is 57.7% white, 24.9% black, and 12.3% Hispanic (Table 6).

Table 5: Population by Age Group, Marion County, 2010

Population	Count	% of total population
Age 18 to 24	89,077	9.9%
Age 25 to 29	77,151	8.5%
Age 30 to 34	67,330	7.5%
Age group total	233,558	25.9%
Total population	903,393	

Source: US Census 2010 Summary File 1, STATS Indiana, and ACS B170001, 2010

^a County health ranking data for teen birth rate is for 1,000 live births among women ages 15-19. At healthindicators.gov, birth rates for ages 15-19 for 2008 were: national, 41.4, Indiana, 43.7, and Marion County, 62.7.

Table 6: Population by Ethnicity, Marion County, 2010

Age	Wh	White		Black		anic	То	tal
(years)	N	%	N	%	N	%	N	%
18-19	14,036	54.0%	8,031	30.9%	2,539	9.8%	26,007	10.9%
20-24	39,742	57.9%	17,476	25.5%	7,825	11.4%	68,582	28.7%
25-29	45,975	59.6%	17,442	22.6%	9,733	12.6%	77,151	32.3%
30-34	38,143	56.7%	16,538	24.6%	9,335	13.9%	67,330	28.2%

Source: U.S. Census 2010 Summary File 1, STATS Indiana, and ACS B170001, 2010

Marion County social indicators of health: 2013

All counties in Indiana are ranked annually for various health indicators and social determinants of health by the Robert Wood Johnson Foundation. In 2013, the CHR website shows several "Challenges to the Community" for the county, including rates of teen pregnancy, chlamydia, violent crime, graduation and child poverty, as well as adult smoking and obesity prevalence (Table 7).

Compared to the state as a whole, Marion County has nearly three times the prevalence of human immunodeficiency virus (HIV) cases, 2.5 times the homicide rate, 17% greater premature mortality, and 20% greater infant mortality. Economically, the county has a lower median income than the state (\$39,957 vs. \$46,410) and 20% more uninsured adults, and it accounts for over half of the schoolchildren eligible for free/reduced lunch programs.

Table 7: Measures from the County Health Rankings, Marion County and Indiana, 2013

County Health Rankings reporting year: 2013*	Marion County	Indiana
Health Outcomes	•	•
Diabetes	10%	10%
HIV prevalence rate/100,000	465	156
Premature age-adjusted mortality (YPLL-75)	448	382
Infant mortality/100,000	1,052	768
Child mortality/100,000	90	64
Health Care		
Mental health providers	2,513:1	3,861:1
Health care costs	\$9,848	\$9,934
Uninsured adults	24%	20%
Uninsured children	10%	9%
Could not see doctor due to cost	16%	15%
Social & Economic Factors		
Median household income	\$39,957	\$46,410
High housing costs	36%	29%
Children eligible for free lunch	56%	39%
Homicide rate/100,000	13	5
Physical Environment		
Commuting alone	82%	83%
Access to parks	28%	27%

Source: Marion County 2013 County Health Rankings. *Years of data used for each indicator may vary, or be aggregated across several years.

http://www.countyhealthrankings.org/app/#/indiana/2013/marion/county/outcomes/overall/snapshot/by-rank

Employment

According to the U.S. Census Bureau's American Community Survey (2011), the unemployment rate among Marion County 20- to 24-year-olds was 17%, and 11% for those ages 25-44 (Table 8). The county's overall unemployment rate increased from 5.2% in 2006 to 10.5% in 2010.

Table 8: Employment Status, Age 16 and over, Marion County, 2011

Age (years)	Total pop.	MOE	In labor force	MOE	Employed	MOE	Unemployment rate	MOE
16 to 19	47,362	+/-2,023	36.3%	+/-3.5	23.5%	+/-2.8	35.3%	+/-6.0
20 to 24	68,538	+/-567	76.6%	+/-3.3	63.7%	+/-3.2	16.9%	+/-2.9
25 to 44	265,374	+/-1,093	85.7%	+/-1.4	76.0%	+/-1.5	11.2%	+/-1.2

Source: American Community Survey, S2301, Work Status, 2011 one-year estimate. MOE= margin of error.

Community Health Survey

Of the county's 18- to 34-year-olds, 65% were currently employed, 17% were currently students, 14% were out of work and 3.8% were unable to work. 13 Low educational attainment may be related to this high level of unemployment: 1 in 5 (20%) of this group had not completed high school; another 30% had completed only high school. 14

According to the 2010 American Community Survey, just over 1 in 4 among this age group met 100% of the federal poverty threshold, with 1 in 3 meeting poverty definitions in the age 18-24 group (33.7%) (Table 9). In 2012, the CHA survey had 31% of respondents in the 18-34 group reporting household incomes that met poverty definitions.¹⁵

Table 9: Poverty Estimates, Marion County, 2010

	Below poverty	% in poverty	Total age group population
Ages 18-24	30,032	33.7%	89,077
Ages 25-34	30,254	20.9%	144,457
Total 18-34	60,286	25.8%	233,534

Source: 2010 American Community Survey 1-Year Estimates, Table 17001: POVERTY STATUS IN THE PAST 12 MONTHS: Population for whom poverty status is determined.

Between 2000-2010, the proportion of county residents under 100% of the FPT grew to 18.8% overall, including 27.7% of working-age (18-64) adults. As in many urban areas, family households meeting poverty standards included 26.2% of black families and 35.7% of Hispanic families compared to 14.3% of white families.

Employment is a major indicator associated with health insurance coverage. The U.S. Census Bureau's Small Area Health Insurance Estimates reports that of Marion County's working-age (18-64) population earning 200% or less of federal poverty levels, approximately 40% were uninsured in the past year (2010). Of the 18- to 34-year-olds responding to the CHA survey, 1 in 3 (34%) did not have health care coverage in the past year.¹⁷

Table 10: Insurance Status of Those Earning 200% or Less of Federal Poverty Threshold, Marion County, 2010

Marion County 2010	Ages 18-64	Uninsured	% uninsured
200% of poverty	222,707	89,656	40.30%

Source: http://www.census.gov/did/www/sahie/data/interactive/

High Priority Issues

According to the work group, the three highest priority topics for the 18- to 34-year-old population are:

High impact of violent death rates, especially in ages 18-24.

Homicide is the leading cause of death in the county's 18- to 24-year-olds, occurring at three times the U.S. rate. While declining over the past decade, homicides remain the second leading cause of death for 25- to 34-year-olds, occurring at twice the U.S. rate and exceeding the rates of many other large, urban metropolitan areas. Homicide rates also exhibit high racial inequalities, disproportionately affecting black males, who are six to 13 times more likely to die from homicide than white males.

Suicide rates are 20%-30% higher than the U.S. rates and are the third leading cause of death. Firearms were involved in 24% of suicides and 67% of homicides in this age group. Over 700 homicide-related emergency department visits per year occurred for 15- to 24-year-olds and nearly 1,000 visits for 25- to 44-year-olds (2009-2011). 18

• High degree of poverty indicators concentrated in this age group.

The CHA 2012 survey shows that 50% of this age group have only a high school or lower education level. In addition, ages 18-34 have a 19% unemployment rate (not including those not in the labor force by choice, such as students and homemakers), 34% are not covered by health insurance, and about 30% report food insecurity in their households.

 High prevalence of depression and poor mental health days in the past month for this age group, and high rates of abuse of prescription painkillers. About 17% of respondents to the CHA survey ages 18-34 reported a medical diagnosis of depression as well as 4-5 poor mental health days in the past month. In the BRFSS survey (2008-2010), 47% of Marion County 18- to 25-year-olds reported frequent poor mental health days (14 or more in the past month), which is four times the U.S. rate.

Some 14% of Marion County 18- to 25-year-olds abuse painkilling drugs, similar to U.S. figures. Overall, lifetime and past year non-medical abuse of any prescription drug is highest in the 18-25 age group, at 12.1% and 6.1%, respectively, followed by the age 25-34 group, at 5.9% and 1.8%, respectively. 19

High Priority Issue A: Violent Deaths and Incarcerations

Table 11: Violence Summary Table, Marion County, 2008-2012

Issue	Per 10,000 people	Notes	Statistics
Violence	84 aggravated assaults (2012) 14 homicides (2008-2012) 108 incarcerations	Homicide: Marion County rates are 2-3 times U.S. rates. 2 nd leading cause of death; declined 20-30% past decade. Homicides: 98 in 2010 (SAVI, 2012). Incarcerations from 2009	1,700 homicide ED visits (ages 15-44). Incarcerated: 3,400 MC adults (2012). 2,454 parolees per month (2013).

Overall, mortality rates have declined by 20% to 30% for the 18-34 population since 1998-2002. Major exceptions include a 25% to 90% increase in accidental deaths, and a 40% increase in heart disease deaths among 25- to 34-year-olds.

Ages 15-24: Over the decade between 2000 and 2010,²⁰ the five leading causes of death for ages 15-24 remained the same: homicide, accidents, suicides, cancers and heart disease. During the same period, however, the total all-cause death rate declined by 30%, from 151 to 101 deaths per 100,000. Most leading cause rates also declined, with the exception of accidents, which increased 25% over the 10-year period (Table 12).

Ages 25-34: Over the 10-year period, accidents, homicides, suicides, heart disease and cancers made up the five leading causes of death at the beginning and end of the decade, and violent deaths declined. By 2008-2012, however, accidental deaths increased to nearly twice their previous rate (RR 1.9) and heart disease increased 40% (RR 1.4). All other causes declined by 10% to 30% over the decade, for an overall decline of 20% in mortality rate (134 vs. 174 per 100,000) (Table 13).

Table 12: Leading Causes of Mortality for Ages 15-24, Marion County, 1998-2002 and 2008-2012

Marion County ranked cause of death, 2008-2012	Rate per 100,000 (2008-2012)	Rate per 100,000 (1998-2002)	Rate ratio	10 year averaged period change in rates +/-
1 Assault (homicide)	31	39	0.8	•
2 Accidents	30	24	1.25	
3 Intentional self-harm (suicide)	14	21	0.7	•
4 Malignant neoplasms	5	6	0.8	•
5 Diseases of the heart	2	4	0.5	•
6 Chronic lower respiratory diseases	1	(differing cause)		
7 Congenital malformations, deformations & chromosomal abnormalities	1	2	0.5	•
Total for age group	101	151	0.7	•

Source: DR1934, revised August 2013, death certificates. Rate ratios less than 1.0 indicate a lower rate, those equal to 1.0 mean no change, and ratios greater than 1.0 indicate an increasing rate between the two time periods.

Table 13: Mortality Rate Change for Age Group 25-34, Marion County, 1998-2002 and 2008-2012

Marion County ranked cause of death 2008- 2012	2008-2012 Rate/100,000	1998-2002 Rate/100,000	Rate ratio	10 year averaged period change in rates +/-
1. Accidents	32	17	1.9	
2. Assault (homicide)	20	30	0.7	•
Intentional self-harm (suicide)	17	19	0.9	•
4. Diseases of heart	11	8	1.4	
5. Malignant neoplasms	11	14	0.8	•
6. HIV disease virus (HIV) disease	4	6	0.7	•
Total for age group	134	174	0.8	•

DR1935, revised August 2013. Rate ratios less than 1.0 indicate a lower rate, those equal to 1.0 mean no change, and ratios greater than 1.0 indicate an increasing rate of mortality between the two time periods.

Leading causes of death

The leading causes of death for ages 15-24 were similar to rankings for the U.S. overall. However, Marion County overall had a 50% higher mortality rate than the U.S. (101 vs. 67.7 per 100,000).

Homicide accounted for 1 in 3 deaths locally for this age group, which was nearly three times higher than the U.S. rate. Accidental deaths (also 1 in 3), suicides (1 in 7) and heart disease deaths were 20% to 40% lower than the U.S. Table 14 is shaded to indicate where county rates are significantly higher (pink) or lower (green) than U.S. rates.

Table 14: Mortality for Ages 15-24, Marion County, 2008-2012, and U.S., 2010

Ranked causes of death	MC rate (number)	U.S. rate (2010)	MC:U.S. Rate ratio
1. Assault (homicide)	31 (152)	10.9	2.8
2. Accidents	18 (149)	28.3	0.6
3. Intentional self-harm (suicide)	8 (69)	10.5	0.8
4. Malignant neoplasms	5 (24)	3.7	1.35
5. Diseases of heart	2 (10)	2.4	0.8
6. Chronic lower respiratory diseases	1 (6)	0.3	3.3
7. Congenital malformations, deformations, abnormalities	1 (5)	0.9	1.1
8. Legal intervention	1 (3)	0.2	5
9. Nephritis, nephrotic syndrome & nephrosis	1 (3)	0.2	5
All causes (rates per 100,000)	101 (500)	67.7	1.5

Source: DR1934 revised August 2013, and National Vital Statistics Report (NVSR) "Deaths: Final Data for 2010." Volume 61, Number 4

County rates for accidental deaths were 40% lower than 2010 U.S. rates. However, motor vehicle accidents make up a large portion of accidental deaths in the early adult period. As of 2009, motor vehicle accident fatality rates in the Indianapolis metro area were higher than that of the U.S. and five other Midwestern peer areas (Table 15).

Table 15: Motor Vehicle Accident Fatality Rates per 100,000 for Ages 15-24, Indianapolis and U.S., 2009

Ages 15-24 (2009)	Number	Rate per 100,000
U.S. total	7,451	17.3
Peer metro areas (n=5)		13
Major cities (n=63)		10.9
Indianapolis – Carmel, Indiana	43	19.2
Indianapolis (balance)	31	19.6

Source: Motor Vehicle Crash Deaths in Metropolitan Areas — United States, 2009 MMWR / July 20, 2012 / Vol. 61 / No. 28:523-38. The five peer metro areas are Louisville, KY; Columbus, OH; Cincinnati, OH; Milwaukee, WI and Nashville, TN.

In the ages 25-34 group, the Marion County all-cause death rate is 30% higher than in similarly aged U.S. residents. The county leads the U.S. with twice the rates for homicide (20 per 100,000) and HIV-related deaths (4 per 100,000), a 40% greater rate of heart disease deaths and 20% greater rates for suicide and cancer deaths. Accidental deaths are 10% lower than the U.S. rate.

Table 16: Leading Causes of Death for Ages 25-34, Marion County, 2008-2012, and U.S., 2010

Marion County (2008-2012)	MC Ages 25-34 Rate/100,000 (deaths)	US 25-34 (2010) Rate/100,000	MC:US Rate Ratio
1. Accidents	32 (193)	35.5	0.9
2. Assault (homicide)	20 (158)	10.4	2.0
3. Intentional self-harm (suicide)	17 (100)	14.0	1.2
4. Diseases of heart	11 (68)	7.8	1.4
5. Malignant neoplasms	11 (64)	8.8	1.25
6. Human immunodeficiency virus (HIV) disease	4 (22)	1.8	2.2
7. Influenza and pneumonia	2 (11)	1.5	1.3
8. Chronic liver disease & cirrhosis	2 (10)	NA	
9. Diabetes	1 (8)	NA	
Total from all causes	134 (799)	102.9	1.3

Source: MCPHD DR1932 death certificates, Census 2010 population estimates, and National Vital Statistics Report "Death rates by age and age-adjusted death rates for the 15 leading causes of death in 2010 – US data." Table 9. (NVSR Volume 61, Number 4) All deaths are Marion County residents. Green shading indicates a positive Marion County comparison; pink indicates a negative comparison to US rates.

Mortality disparities by age, gender and race

Among those 25- to 34-years-old, males were more than three times as likely to die of accidental causes than were females, and six times more likely to die from homicide. Suicide rates were not only higher among ages 25-34 than among ages 15-24, but the disparity in male deaths also increased in the older age group (Appendix 4).

The homicide rate for males ages 15-24 was over six times that of females, and male risk of accidental and suicide deaths were over three times that of females. The total mortality rate for all males ages 15-24 was over three times that for females.

Regarding years of potential life lost, homicide was the top-ranked cause of death in 15- to 24-year-olds, occurring chiefly among black males. White males appear to lead in accidents and

suicides (Appendix 3). For total mortality, blacks ages 15-24 are twice as like to die as whites, 13 times more likely to die from homicide, and two to three times more likely to die from cancer and heart disease. Whites, on the other hand, are 20% more likely to die from accidents and suicides than blacks.

Blacks ages 25-34 have twice the risk of mortality as whites in the same age group (RR 1.9). They have four times the rate of heart disease and HIV-related deaths, twice the rate of cancer and over eight times the rate of homicide. However, they have only a 1 in 5 chance of accidental death – the leading cause for this age group – compared to whites.

Hispanics, on the other hand, have a 30% lower mortality rate than similarly aged whites (RR: 0.7), and a 40% lower rate of accidental deaths than whites. At fewer than five deaths each, no other ranked cause of death has a large enough number of events to make a meaningful comparison (Appendix 4).

National homicide rate

Homicide is the second leading cause of death in 14- to 30-year-olds nationwide and the leading cause among black males. Rates were halved from 1990 to 2000 (9.8 to 5.5 per 100,000) and held steady until 2007. This "stable" trend hides an increasing rate of gun violence in some populations. In large metropolitan populations, homicide rates increased 12% for white men ages 25-34 and increased 31% for black men ages 25-44. Recent research shows homicide rates are not associated with unemployment or lead-contaminated environments. 22

Indianapolis was included in the Strategic Approaches to Community Safety Initiative, which covered 10 cities through Project Safe Neighborhoods. Gun violence was closely examined, and geographic concentration allowed police to focus on gang-related violent activity. This led to a significant decline in homicides prior to 2006. Multi-agency cooperation and deterrence messages were communicated directly to youth by justice officials, the U.S. attorney's office and social support agencies. The initiative used gun-associated violent crime statistics to threaten gang-related offenders and their associates with prosecution for illegal gun possession, while encouraging "Peace in the Streets" to reduce violent retributions and impulsive violent attacks.²³

Firearms-related deaths

In 2008-2012, ages 18-34 contributed two-thirds of all firearms-related homicides and deaths due to legal intervention. By contrast, they contributed only 1 in 4 suicides due to firearms. A total of 346 deaths due to firearms occurred in this age group, or an average of 69 deaths per year during the period (Table 17).

The Smith Level I Shock Trauma Center at Eskenazi Health entered into partnership with local police, criminal justice, mental health and housing agencies to attempt to break the cycle of gun-related violence and death in young adults ages 14 to 30 with its intervention "Prescription for Hope" (RxH). Focusing on the "teachable moment" to enroll youth hospitalized with gunshot/knife injuries, and providing "wrap-around" services to some 60 young adults per year, the program reduced recidivism and injury in its clients. It also promoted successful reintegration of these youth with their families, schools and communities, and independence from gang-related organizations.²⁴

The program reported police department data from January-June 2013 on non-fatal gunshot incidents in Indianapolis (Table 18). In those six months, of the 194 non-fatal incidents, nearly 90% of both victims and suspects were male, and over 85% did not have a permit for the gun in the incident. Over 75% were non-white and between ages 15 and 35. These data indicate that for every one firearm homicide, there are about four shooting victims who survive an armed assault (Table 18).

Table 17: Deaths Due to Injury by Firearms, Marion County, 2008-2012

Category	Age 18 to 24	Age 25 to 34	Total age 18-34 deaths	% all-age deaths, by category	All-age firearm deaths
Accidental	1		1	14.3%	7
Suicide	28	43	71	24.1%	295
Homicide	127	135	262	63.6%	412
Undetermined intent	2	2	4	66.7%	6
Legal intervention	3	5	8	72.7%	11
Total	161	185	346	47.3%	731

Source: DR1998

Table 18: Marion County Non-fatal Gunshot Incidents: January-June 2013

Total incidents	Victims	Suspects
194	194	49
% male	89%	86%
% non-white	77%	79%
% age 15-34	76%	85%
No gun permit	89%	84%
Aggravated assault - gun	74%	

Source: DR2155

Hospitalizations

Overall, Marion County had fewer than 3,500 hospitalizations per year (2009-2011) among ages 15-44, which was 9% lower than the U.S. rate (760 vs. 839 per 10,000 population) (Appendix 5). The county had a 40% greater rate per 10,000 for infectious disease, and a 34% greater rate for diseases of the blood/blood-forming organs for this age group. Otherwise, the county had 20% to 35% lower discharge rates for all other principal diagnoses, including injury and poisoning, than did the U.S.

Hospitalization discharge rates for non-Hispanic blacks (RR: 1.53) and "others" (RR: 2.0) were twice as high as white discharge rates. Leading disparities for black residents included diseases of blood/blood-forming organs (RR: 13.6), circulatory diseases (RR: 2.0) and endocrine-related diseases including diabetes (RR: 1.9), and 70% greater discharge rates for respiratory, infectious and cancer-related admissions. "Others," principally Hispanics, had two to three times the discharge rate of whites for endocrine, blood/blood-forming organs and pregnancy complications-related admissions.

Men in this age group had a 40% higher discharge rate than women of the same age. The major exceptions were women had a 37% higher discharge rate due to diseases of the skin and circulatory system, and a 50% higher injury and poisoning discharge rate.

Emergency department use

Marion County 15- to 24-year-olds had an annual average of about 70,000 ED visits, or 5,260 visits per 10,000 population (2008-2011). The 25- to 34-year-olds had slightly more visits per year, 76,274, for a rate of 5,279 per 10,000 (Appendix 6). Both age groups had over 1 in 5 ED admissions for injury/poisonings (about 14,000 visits in each age group).²⁵

Injury-related ED visits during 2009-2011 numbered nearly 87,000 for 18- to 24-year-olds (6,636 per 10,000) and 150,000 for 24- to 35-year-olds (5,659 per 10,000 population). Sprains and strains of joints and muscles led both age groups, accounting for roughly 1 in 4 injury-related visits, or about 22-27% in each age group. Next were intact-skin contusions and open wounds, also prevalent in both groups. Superficial injuries and unspecified complications followed, with upper-limb fractures accounting for 4% to 5% of visits for both age groups (Appendix 7).

For the 15- to 24-year-olds, motor vehicle accidents and drug overdoses each made up 2% to 3% of injury-related visits (or 2,200-2,400 visits, 189 per 10,000). There were over 720 visits associated with assault/homicide (55 per 10,000) and 55 visits for intentional self-harm/suicide (4.2 per 10,000).

While the overall rate of injury-related ED visits was lower among 25- to 44-year-olds (5,659 per 10,000), accidental falls led with over 5,000 visits, or 3.5% of the total, in this age group (264

per 10,000). Homicide rates were also lower among 25- to 44-year-olds; nonetheless, they accounted for nearly 1,000 injury-related visits.

Marion County arrest rates and substance abuse

Substance abuse is associated with a variety of offenses. Of more than 58,000 Marion County arrests during 2007, over 14,000 (25%) were classified as directly related to substance abuse.²⁶ However, substance abuse also fuels violent and anti-social outcomes. For example, the Centers for Disease Control and Prevention (CDC) estimates that almost half (47%) of homicides and nearly a quarter of suicides (23%), are attributable to alcohol.²⁷

The Marion County rate for violent crime is almost three times that of the state, and its rate for property crime exceeds the state's by 65% (Table 19). And even though the county had a lower alcohol-related arrest rate (10.4 per 1,000) than the state in 2007, by 2009 this had increased by 50% to 15 per 1,000 (Table 20). Both state and county rates of drug-related arrests had increased by 2009, to 7 and 10 per 1,000, respectively). It should be noted that Marion County did not have the highest county arrest rate in the state for either offense (Table 20).

Table 19: Arrests by Cause, Marion County and Indiana, 2007

UCR, 2007 ²⁸		Property crimes	Violent crimes	Prostitution	Alcohol- related offenses ²⁹	Drug offenses	Total ³⁰
Marion	Number	7,320	3,507	1,667	8,988	5,770	58,513
County	Rate/100,000	8.5	4.1	1.9	10.4	6.7	67.6
Indiana	Rate/100,000	5.5	1.4	0.3	11.0	4.6	43.5

Source: National Archive of Criminal Justice Data, Uniform Crime Reporting Program 2007.

Table 20: Alcohol- and Drug-related Arrest Rates, Marion County and Indiana, 2009

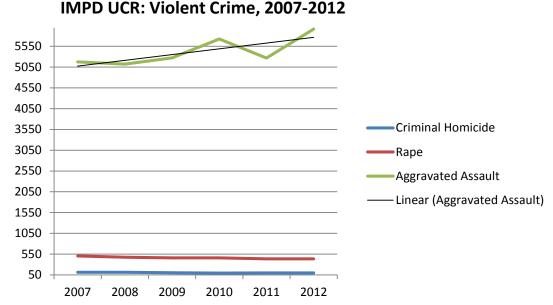
UCR, 2009	Alcohol- related arrests	Alcohol- related: Rate/1,000 persons	Drug-related arrests	Drug-related: Rate/1,000 persons
Marion County	1,476	15	1,047	10
Indiana	1,204	12	688	7
Indiana county (min-max)	[276-2,152]	[3-22]	[150-1,723]	[1-17]

Source: DR2106, FBI Uniform Crime Reports, 2012

Aggravated assaults: an increasing trend

In the past five years, the number of homicides in the county has diminished slightly, from 114 in 2007 to fewer than 100 per year since 2010. The number of rapes also has fallen, from 505 in 2007 to 436 in 2012. Meanwhile, aggravated assaults have risen in the county from about 5,100 in 2007 to nearly 6,000 in 2012 (Figure 1).

Figure 1: Violent Crimes from the Uniform Crime Report, Indianapolis Metropolitan Police Department, 2007-2012



Source: DR2021, IMPD-UCR reports 2013

In 2010, Marion County averaged 8.4 aggravated assaults per 1,000 population, but this varied by census block, from zero to over 45 assaults per 1,000 population that year. Center Township led the county in aggravated assault rate in this period (Table 21).

While most townships in the county had a relatively stable rate of 5.2 or fewer aggravated assaults per 1,000 population (2007 to 2012), Warren and Center townships were exceptions, with rates that increased from 6.4 to 13.1 (Warren) and 7.4 to 16.3 (Center) assaults per 1,000 population (Figure 2). Both townships also had the highest homicide rates per 1,000 in the county.

Two mitigating factors may explain these trends: the increasing rates of unemployment and poverty, especially in Center Township, during the recent recession.³¹ In 2012, less than 100 homicides occurred in Marion County (n=97) (Table 22). Homicide rates among 18- to 34-year-olds have declined by about 60% over the past decade.³²

Table 21: Aggravated Assaults and Homicides per 1,000 Population, Marion County Townships, 2012

Township	Aggravated assaults	Homicides
Center Township	16.3	0.28
Warren Township	7.35	0.101
Decatur Township	5.16	0.062
Pike Township	4.29	0.077
Washington Township	3.61	0.053
Perry Township	3.05	0.055
Franklin Township	1.59	0.018

Source: SAVI, Marion Co. IMPD 2012 data

Figure 2: Aggravated Assaults per 1,000 Population, Marion County Townships, 2007-2012

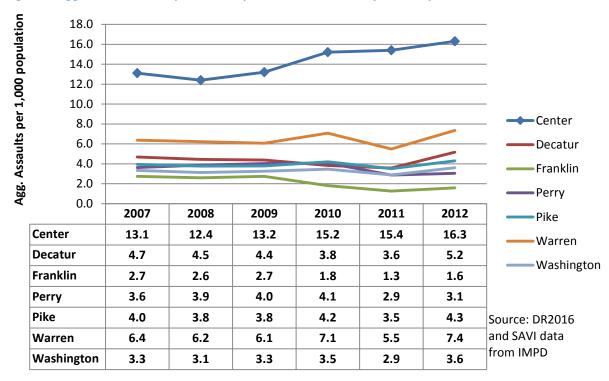


Table 22: Violent Crime Counts and Rates per 100,000 Population by Category: Marion County, 2012

Violent crime	Count	Rate	Property crime	Count	Rate
Homicide	97	10.6	Burglary	14,774	1607.7
Rape	436	47.4	Larceny	27,525	2995.2
Robbery	3,442	374.5	Vehicle theft	4,598	500.3
Aggravated assault	5,967	649.3			

Source: DR2120. Rates per 100,000 calculated based on 2012 population estimate.

Marion County incarcerated populations and offenders released to the community

In 2012, approximately 3,400 Marion County adults were incarcerated by the Indiana Department of Corrections (Table 23).³³ In the same year, nearly 4,400 were released. These figures reflect the county where the individual was committed to prison, not necessarily his or her home county (Table 24).

Between 2005 and 2012, the number of men incarcerated in IDOC facilities declined from around 4,000 to about 3,000 per year; women offenders have maintained a steady 500 per year. Men are nearly six times more likely than women to be incarcerated in state facilities (Figure 3). Men are also more likely to re-enter the community via parole (51% vs 40%).

Table 23: New Prison Admissions and Adult Releases, Marion County, 2012

Gender	New admissions	Adult releases
Men	2,902	3,811
Women	488	537
Total	3,390	4,348

Source: DR2107. Numbers based on most serious offense and includes internments for new crimes only, while parole violators are excluded.

Table 24: Incarcerations per 10,000 Population and Length of Sentence, Indiana, Lake and Marion counties, 2009

Geography	Incarceration rate	Average years of incarceration
State	59.2	19
Lake County	39.4	29.9
Marion County	108.1	21.3

Source: DR2107, IDOC website presentation

The number of persons released to a county is reflected partially in the monthly tally of felony offenders who must report to a parole officer. These individuals have committed more serious crimes and must report their whereabouts and activities regularly. Only 1 in 10 parolees come from non-IDOC prisons.

On average, Marion County incarcerates 1 in 100 residents, a rate 70% greater than the state's (2009) (Table 24). The average period of incarceration is under two years, slightly longer than the state average.

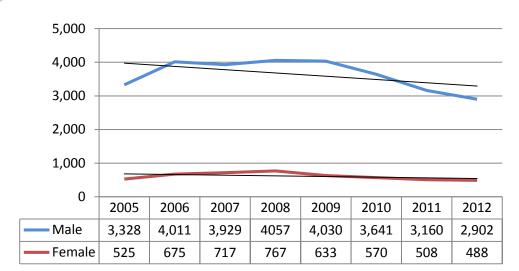


Figure 3: Newly Incarcerated Marion County Residents to IDOC Facilities, 2005-2012

Source: DR2020. Parole violators and those held for diagnostics not included.

Marion County contains three adult prisons, two IDOC state facilities and the Marion County Jail administered by the Sheriff's Office (Table 25). The state Women's Prison in Indianapolis houses 600 female prisoners. The Re-Education Center, a new facility that began operations in 2006, houses over 300 lower-risk male prisoners and helps them transition back to the community. Both facilities have seen increases in average population over the past two years. The County Jail (comprised of three sites in the county) has a monthly average of 1,190 prisoners. However, the jail population varies widely: In the past three years, it has processed as many as 5,670 arrestees in a month (May 2010) and as few as 3,212 (June 2012) (Figure 4). 34

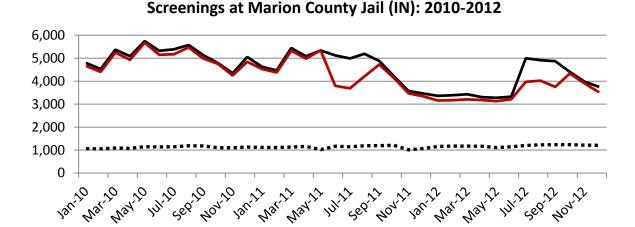
Overall, as estimated from IDOC data, about 10% of all inmates are women. Of these, 31% are black and 4% are Hispanic. The median age at intake in IDOC populations is 32 years. Over 50% of inmates are between ages 18-34.³⁵

Table 25: Average Daily Population, Marion County Jail, Indiana Women's Prison, and Re-education Center, 2011 and 2013

	County Jail	IN Women's Prison	Re-Entry Re-Education Center
Security level	Minimum/ Medium	Maximum	Level 1R
Avg daily population (2011)	NA	589	335
CY 2013	1,190	619	373

DR2107 Source IDOC website: Facilities in Marion County, 2013, DR2120 CY=Calendar Year





Individuals Processed, Average Population and Intake Health

Source: DR2120. December 2010 data unavailable. Estimates for that month were imputed by taking the mean count from six months prior to and six months after the missing month.

Intake Health Screenings

Avg. Population

Recidivism rates

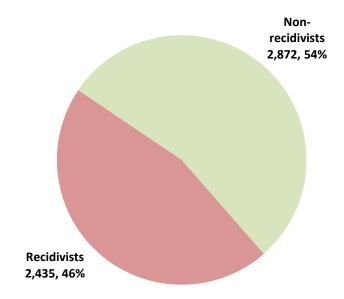
No. Processed

The IDOC calculates offender recidivism rates over a three-year follow-up period from the time a prisoner is released, and the results are applied to the county from which the prisoner is committed to prison. This is not necessarily the individual's county of residence either prior to or after incarceration. A re-interned offender may have committed a new offense or violated conditions set by the court on his/her release. In total, 46% of Marion County offenders released in 2009 were re-interned within three years; one-third (31%) were arrested for a new offense (Figure 5).³⁶

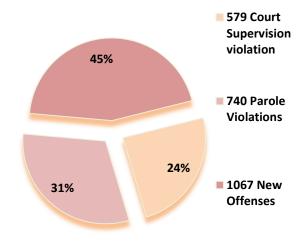
Marion County has one of the highest recidivism rates in the state, but it is not the only county that had almost half of offenders returned to jail. Overall, higher rates of recidivism occur among offenders released on probation (55%) than those paroled, discharged, or released to community transition programs (30% to 46%). Males and females have similar rates of recidivism. By ethnicity, Hispanics have less than half the recidivism rate (18%) of other ethnic groups (45% to 47%).

Major offenses (300 or more cases) of state prisoners returned to Marion County include burglary, dealing cocaine or other narcotics, forgery, possession of cocaine or other narcotics, and theft or receiving stolen property.³⁷

Figure 5: Total Recidivism Rate, Marion County, 2009 Releases Followed to 2012



Types of recidivism, 2012



Source DR2107, IDOC 2012 Recidivism Report

Health of incarcerated populations

The IDOC³⁸ reports that in 2009, three-quarters of offenders in Indiana had substance abuse problems, 15% to 20% had emotional/mental health disorders, 18% had hepatitis and 1.1% had HIV/AIDS.

According to national estimates, 31% of women and 15% of men in state prisons have serious mental illness, and nearly 50% of all prisoners suffer substance abuse.³⁹ Females have high rates of mental illness and sexually transmitted diseases. Mental health problems, including post-traumatic stress disorder, are highest in whites (71%) and in women. High rates of relapse on release from prison are seen, especially in substance abuse cases, due to poor discharge planning and discontinuity of care.⁴⁰

Prison populations have increased due at least in part to closure of mental health institutions in the 1970s and failure to provide community-level mental health and addiction services. Drug addiction is often viewed as a moral weakness rather than a medical issue. The drug wars of the 1980s strengthened this concept in that over 80% of drug arrests were for possession (vs. sale) of narcotics, with marijuana possession making up 45% of drug arrests.⁴¹

Many of these offenders have other substance abuse dependencies, and there is little community treatment available. An estimated 68% of inmates have drug dependence as defined by the Diagnostic & Statistical Manual of Mental Disorders-IV (DSM-IV) compared to 9% of the U.S. population. Nationally, about half of these inmates (48%) are dependent on alcohol, and the remainder on other drugs. The prevalence of alcohol dependence among male inmates is similar to corresponding age groups in the U.S. population at 18% to 30%, depending on age. Female inmates, however, have two to four times the national prevalence of alcohol dependence.⁴²

An estimated 70% to 85% of inmates need drug treatment, but only 10% to 15% receive care while incarcerated. Most drug treatment is self-help or 12-step programs, not medical detoxification or methadone treatment. Addiction is often left off the list of required treatment for "medical conditions" in corrections facilities. 43

Nationally, high rates of syphilis infection occur in prison, more so among females (28%) than males (10%). Further, an estimated 17% of all U.S. HIV/AIDS cases pass through incarceration facilities each year. Jails play an important public health screening function for these diseases, including Hepatitis C infection, where the jail populations have infection rates eight to 20 times higher than the general population.⁴⁴

In addition, prison populations, which doubled between 1990 and 2012, are growing older, presenting the need for chronic disease screening. The most frequently encountered conditions are hypertension, asthma and diabetes. Though there are rarely screenings for these conditions, an estimated 40% of inmates have at least one of them. Local studies often find inmates have similar chronic disease patterns to the general population from which they came. Smoking prevalence in jails is 60% to 80%, but few medical smoking cessation programs are offered.⁴⁵

Community poverty, incarceration and return to community

Released offenders face many hurdles upon return to their communities. Beyond their criminal records, former inmates frequently bear a history of mental health and addiction and lack support for low-income housing and medical attention. Nearly half of ex-offenders are black, and 20% are Latino or Asian.

Ex-offenders are further handicapped by poor education and employment experience when they attempt to re-enter the workforce. ⁴⁶ This is due in part to 70% of inmates and ex-offenders being high school dropouts. ⁴⁷ Further barriers to employment include policies that allow employers ready access to an applicant's criminal record and a resistance to hiring former felons. ⁴⁸

High Priority Issue B: Poor Mental Health

Table 26: Summary of Mental Health Issues for Ages 18-34, Marion County, 2012

Mental Health	1,700 persons diagnosed with depression	4-5 poor mental health days in the past month (CHA 2012). 48% report frequent poor mental health days: 4X U.S. rate (BRFSS). Age 18-25: abuse of painkilling drugs: 13.9% (similar to U.S.).	Depression (CHA 2012) Whites: 21.7% Blacks: 12.7%, Hispanics: 14.3%
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In the 2012 CHA Survey, 17% of 18- to 34-year-old respondents reported that they had been diagnosed by a health professional with depression. This is a leading chronic condition in this age group and is highest among whites (Table 27). Additionally, they reported five poor mental health days (defined as those that interfered with daily activities) during the previous 30 days.

White respondents reported higher prevalence of diagnosed depression (21.7%), but it is unclear to what degree the diagnosis might be influenced by greater insurance coverage and access to a usual source of care. In other risk factors for adverse health outcomes, whites reported greater prevalence of a firearm presence (27.2%) and prescription medication addiction in the household (4.4%), while Hispanics reported greater prevalence of violence victimization (8.9%).

Table 17: Mental Health and Other Chronic Diseases for Age Group 18-34, Marion County, 2012

CHA 2012 18- to 34-year-olds: health status	All	White (n=334)	Black (n=207)	Hispanic (n=148)	Other (n=57)
Current smoker	28%	37.3%	20.6%	14.4%	34.4%
Ever diagnosed with:					
Depression	17%	21.7%	12.7%	14.3%	16.0%
Health care access:					
Health care coverage (yes)	66%	72.7%	62.5%	57.9%	60.8%
No MD visit in past year due to cost	26%	28.7%	25.0%	20.8%	24.9%
No Rx in past year due to cost	28%	34.7%	25.6%	18.7%	22.9%
Visited DDS with oral pain in past year	24%	26.2%	27.0%	22.3%	23.8%
Other risk factors:					
Firearm in home		27.2%	17.0%	3.3%	16.7%
Household has case of Rx addiction		4.4%	2.1%	1.9%	4.3%
Violence victim in household, past year		6.3%	4.9%	8.6%	2.6%
Health function:					
# days poor mental health in past 30 days		5.0	4.1	3.7	6.5
# days poor physical health in past 30 days		2.0	1.7	2.4	2.7

Source: DR2104 (CHA Survey 2012, age 18-34 respondents)

Behavioral Risk Factor Survey

Nearly half (47%) of Marion County 18- to 25-year-olds reported frequent poor mental health days (14 of past 30 days), or four times the U.S. rate (Table 28). ⁴⁹ This age group is also more than four times more likely to report overall fair-to-poor health status (32.4% vs. 7.6%).

Table 28: Mental Health Measures Ages 18-25, Marion County, 2008-2012, and U.S., 2010

General and mental health	MC 2008-2012	US 2010	RR
Adults who reported fair or poor general health	32.4%	7.6%	4.3
Get social and emotional support: always/usually	35.2%	79.8%	0.4
Frequent bad mental health (14+ days in past month)	47.0%	11.6%	4.1
Frequent bad physical health (14+ days in past month)	32.4%	4.5%	7.2
Frequent poor (physical or mental) health prevented from doing usual activities (14+ days in past month)	5.8%	3.3%	1.7

Source: DR1939 (BRFSS, 2008-2012)

Mulye and colleagues reported on mental health and substance abuse among U.S. adults ages 18-25⁵⁰ and found that nearly 9% were medically diagnosed with a major depressive episode, and that almost twice as many (17.9%) had been diagnosed with serious psychological distress

(Table 29). Both categories are described in the DSM-IV. In the same review, this age group's most prevalently abused drug was alcohol, with 41.8% reporting binge drinking, followed by 1 in 3 individuals reporting regular cigarette use (36.2%) and 1 in 5 reporting other illicit drug use (20.7%). 51

Table 29: Mental Health and Substance Abuse for Ages 18-25, U.S., 2009

Mental health:	U.S. ages 18-25
Major depressive episode	8.9%
Serious psychological distress	17.9%
Substance abuse (2007): ⁵²	
Cigarettes	36.2%
Binge drinking	41.8%
Heavy alcohol use	14.7%
Illicit drug use	20.7

Source: Mulye et al. 2009

The ratio of mental health providers to population in Marion County is 2,513:1, compared to an Indiana average of 3,861:1. Nonetheless, major portions of the county have been declared underserved by mental health care services, according to the Health Resources Services Agency (HRSA).⁵³ Approximately 3% of emergency department visits per year (2,000 for ages 15-24, 2,300 for ages 24-44) were for mental disorders.⁵⁴

Mental health and prescription drug misuse

The National Institute on Drug Abuse (NIDA) lists the three most commonly abused types of prescription medications as opioids (pain medications), central nervous system depressants (sedatives and tranquilizers) and stimulants (prescribed for narcolepsy, obesity and ADHD). Over half of the 1.45 million prescriptions purchased in the county in 2010 were opioids (53%), over a quarter (28%) were for CNS depressants, over one-tenth 10 (11%) were for sedatives, and 7.6% were for other controlled substances.

These figures represent *prescribed* medical use of these drugs. To estimate non-medical abuse, survey results from the National Survey on Drug Use and Health are used for self-reported drug misuse. In 2011, 15% of Hoosiers over the age of 12 reported that they had abused pain medications in their lifetime, and 6% had abused these drugs in the past year (Table 30). Opioids are the highest category of drug type abused in both the state and nation. No statistical significance was noted between state and U.S. rates of misuse. ⁵⁷

Hoosiers ages 18-25 had higher rates of abuse of painkilling drugs in the past year than any other age group: 13.9%, or over three times the rate of adults over 25 (4%).⁵⁸ Males were more likely to misuse opioid drugs than females and to use opioids that were prescribed for others.

Table 30: Lifetime and Past-Year Non-medical Use of Psychotherapeutics: All Ages, Indiana and U.S., 2011

	Lifetime use		Past-year use	
	Indiana	U.S.	Indiana	U.S.
All psychotherapeutics	20.7%	20.4%	7.6%	6.3%
Pain relievers	15.0%	13.7%	6.1%	4.8%
Oxycodone	2.5%	2.4%	0.8%	0.7%
Tranquilizers	9.1%	8.7%	2.8%	2.2%
Sedatives	3.9%	3.0%	0.4%	0.4%
Stimulants	8.3%	8.5%	1.7%	1.1%

The Consumption and Consequences of Alcohol, Tobacco and Drugs in Indiana: A State Epidemiological Profile 2011 (National Survey on Drug Use and Health)

The abuse of prescription drugs begins early. The Indiana Prevention Resource Center (IPRC) began tracking this issue in 2010⁵⁹ and found that among Central Indiana high school seniors:

- Pain medication is the most frequently misused category of prescription medication, with 7% of seniors reporting monthly abuse of painkillers.
- Females are more than twice as likely to misuse all medical prescriptions.
- Whites are 10 times more likely to misuse prescriptions compared to blacks.

Lifetime (12.1%) and past year (6.1%) non-medical abuse of any prescription drug is highest among 18- to 24-year-olds, followed by 25- to 34-year-olds, at 5.9% and 1.8%, respectively. 60 Misuse of pain medication was statistically higher in Indiana for ages 12-17 and ages 18-24 than for similar ages in the U.S. (Table 31).

Table 31: Prevalence of Past Year Misuse of Prescription Pain Medication, Indiana and U.S., 2009

All Pain Rx Abuse	12-17	18-24	25+
Indiana	8.2%	13.9%	4.0%
U.S.	6.5%	11.9%	3.4%
Indiana			

Indiana Patients in Treatment	All Rx drugs	Pain meds	Sedatives	Stimulants
Male	15.8%	11.3%	5.9%	1.0%
Female	25.7%	18.4%	10.9%	1.2%
White	22.4%	16.1%	8.9%	1.1%
Black	3.9%	2.2%	1.3%	0.6%
18-24 years	22.5%	15.2%	9.5%	1.1%
25-34 years	24.5%	18.2%	9.3%	1.2%
Indiana treated: All Ages	19.1%	13.6%	7.6%	1.0%
U.S. treated: All Ages	16.2%	11.9%	4.9%	1.3%

Source: National Survey of Drug Use and Health, Substance Abuse and Mental Health data archive, 200961

Pain medications account for more admissions to treatment than any other substance.⁶² The overall rate of treatment for all-prescription medication abuse was significantly higher for Indiana (19.1%) vs. the U.S. (16.2%) (Table 31). Furthermore, abuse of pain medications and sedatives has increased from 2000 to 2009 in both the state and nation.⁶³ Females, whites and those ages 25-34 were more likely to seek treatment for pain medication abuse than any other age or gender categories.⁶³

Individuals can illegally obtain prescription medications through doctor shopping and over-prescription, illegal online purchases, theft and burglary, and illicit receipt of drugs from family or acquaintances. Arrests for possession of illicit pain medication increased threefold in Indiana between 2000 and 2007 but have remained steady at 0.2 per 1,000 population since that period.⁶⁴

High Priority Issue C: Poverty Indicators in Young Adults

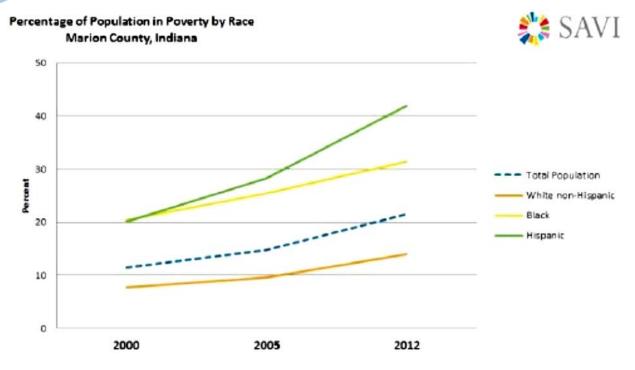
In 2013, the Polis Center at IUPUI reported on the growth of poverty in Marion County from 2000 to 2012.⁶⁵ For many federal and social services programs, poverty is defined by the size of families and their total annual incomes. In 2012, a family of four earning \$23,496 or less per year was defined as meeting 100% of the federal poverty threshold (FPT). One in five Marion County families (21%) met this definition in 2012, and poverty rates have grown over the past decade.

The Polis Center report outlined education, income, race, employment and geographic risk factors for being in poverty. Some important points on poverty in Marion County:

- Poverty affects an estimated 194,163 residents of all ages.
- Rates increased faster than in either the state or the nation, from 11.4% in 2000 to 21.5% in 2012.
- Hispanics have the highest prevalence at 42%, followed by blacks at 31% (Figure 6). Marion County Hispanics are more likely to be in poverty than Hispanics statewide, where prevalence is 29%, or nationally, where prevalence is 25%. The poverty rate in Hispanics doubled between 2000 and 2012 (20% to 42%).
- Over 1 in 3 persons without a high school diploma (37%) lives in poverty. This is more than twice the rate of those with a high school diploma (17.8%), and more than five times the rate of those with at least a bachelor's degree (5.6%) (Figure 7).
- High poverty rates are concentrated in six central ZIP codes in the county (over 28%)
 (Figure 8). Compared to the low poverty ZIP codes at the corners of the county (outlined in blue in Figure 9), the high poverty ZIP codes (outlined in red) had seven times the prevalence of poverty, three times the unemployment rate and five times the crime rate.

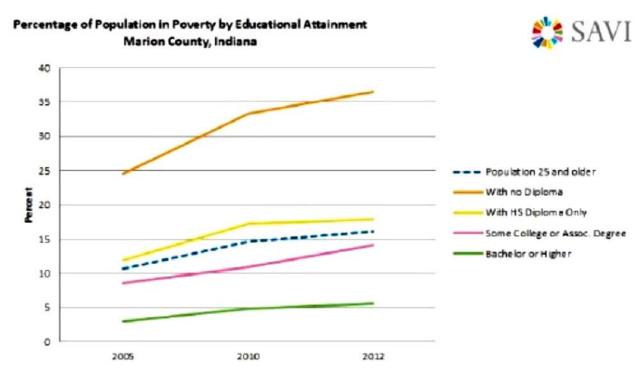
Those areas with the lowest poverty also had the highest concentration of persons with post-secondary education and the fewest people lacking a high school diploma. The overall Marion County poverty rate in 2011 was 18.3%, but some census tracts had over 75% of their population living in poverty. These high poverty neighborhoods are illustrated in Figure 10.

Figure 6: Population in Poverty by Race, Marion County, 2000-2012



Source: Kandris and Colbert, 2013

Figure 7: Population in Poverty by Educational Attainment, Marion County, 2000-2012



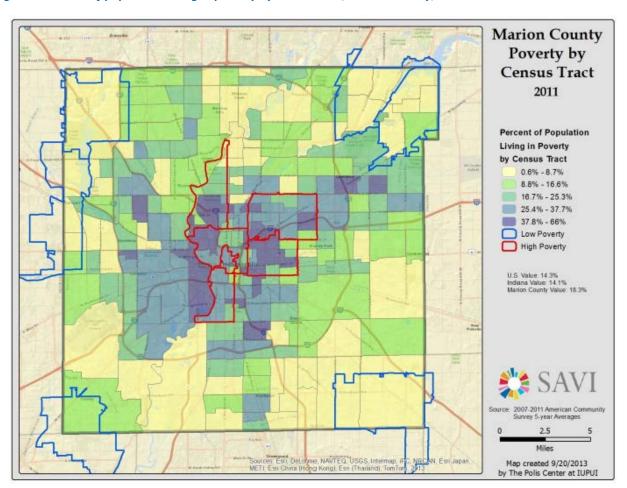
Source: Kandris and Colbert, 2013

Figure 9: 71D Codes with Highest Percent of Population Meeting Federal Poverty Guidelines, Marion County, 2012

Highest Poverty (2012)						
ZIP	Approximate Area	2012 Poverty Rate				
46201	Near Eastside	36.9				
46204	Downtown	33.6				
46218	Martindale Brightwood	33.4				
46225	Near Southside Garfield Park	32.5				
46202	Area west, north, and east of downtown	29.8				
46208	Crooked Creek	28.8				

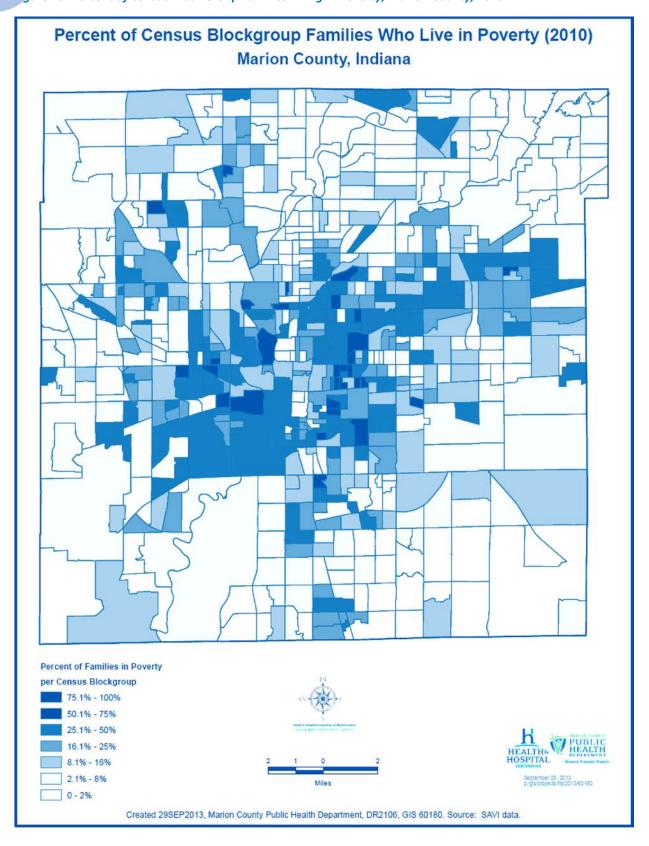
Source: Kanaris and Colbert, 2013

Figure 9: Percent of population living in poverty by census tract, Marion County, 2011



Source: Kandris and Colbert, 2013

Figure 10: Percent of Census Block Group Families Living in Poverty, Marion County, 2010



As a proxy for poverty, Marion County school districts' percentages of students qualifying for the federal free and reduced lunch program are shown below, illustrating the across-the-board increases in low-income status between 2005 and 2010. Rates of free/reduced lunches ranged between 35% and 81% of students in 2010, and their proportions increased 9% to 22% in all districts except Speedway and Wayne Township (Table 32).

Table 32: School District Free and Reduced Lunch Recipients as Percent of District Population, Marion County, 2005-2010

School system	2005/6	2006/7	2007/8	2009/10*
IPS	76%	75%	79%	81%
FTCSC	24%	24%	26%	35%
MSD Decatur	47%	51%	51%	60%
MSD Peny	48%	50%	49%	57%
MSD Pike	46%	45%	46%	59%
MSD Lawrence	37%	38%	47%	52%
MSD Washington	37%	38%	47%	55%
Beech Grove	39%	45%	55%	61%
Town of Speedway	46%	42%	49%	45%
MSD Warren	53%	55%	63%	66%
MSD Wayne	69%	69%	76%	70%
State Avg.	37%	38%	40%	45%

Source: Indiana Dept of Education website; * for 2009/10, categories on website were listed as "Free Meals" and "Reduced Meals" only; textbooks not mentioned

CHA phone survey 2012: poverty among young adults

One in 5 (20%) of this age group had not completed high school, and 30% had completed only high school, with no postsecondary education. Seventeen percent of these respondents were currently students, 19% were out of work, and 3.8% were unable to work (Table 33). The 65% who were currently employed represented the lowest percentage of employed in all the adult age groups.

About one-third of respondents ages 18-34 (31%) had households below 100% of federal poverty guidelines, with 1 in 5 households having annual incomes below \$20,000, and another fifth having incomes between \$20,000 and \$25,000. Over 60% of respondents have one or more children in the household, and nearly 20% have three or more children.

One-third of these respondents' households used food stamps (SNAP) (33%), and 29% of them reported that they sometimes or often experienced food insecurity. Nearly 1 in 10 (9%) relied on a food pantry in the past month, and 5.3% used a community kitchen as a supplemental food resource. About 66% reported having a full-service grocery within walking distance of home, with 34% reported doing their primary grocery shopping at a large discount store.

Table 33: Characteristics of 18- to 34-year-olds by Race, Marion County, CHA Survey 2012

CHA 2012 demographics	All	White (n=334)	Black (n=207)	Latino (n=148)	Other (n=57)
% of CHA 18-34 population	100%	45%	27%	20%	8%
% of 18-34 population under age 25	41%	36.4%	47.4%	42.9%	45.6%
Total number in household	3.6	3.5	3.3	4.3	3.7
Household at or below 100% of poverty	31%	21.3%	35.8%	51.3%	21.7%
% unemployed	19%	12.7%	19.7%	8.5%	17.3%
% less than high school education	20%	16.2%	11.2%	39.8%	20.5%
% households food insecure	29%	26.8%	30.5%	33.4%	29.1%
Used food stamps, past year	33%	27.2%	42.3%	36.5%	29.9%
Used WIC past year	15%	10.5%	12.9%	28.9%	11.7%

Source: DR2104, CHA 2012. Highlighted sections represent highest prevalence among ethnic groups.

Only half of these young adults had a usual source of care, and 34% of respondents did not have health care coverage (Table 34). Over one-quarter (26% to 28%) did not seek needed care and/or did not fill a prescription due to cost. One-fourth of respondents saw a dentist due to pain, indicating lack of preventive dental visits.

Table 34: Access to Care for Ages 18-34, Marion County, CHA Survey 2012

Indicator health care access: ages 18-34 (CHA 2012)	% [95% CI]
Have health care coverage	66 [62.0-70.2]
Have one usual health care provider	50 [45.6-54.0]
Feels respected by health care provider	91 [87.2-94.2]
Needs help reading medical instructions (occasionally or more often)	23 [18.9-26.9]
Did not get health care due to cost in past 12 months	26 [22.2-29.5]
Did not fill prescription due to cost in past 12 months	28 [24.3-32.0]
Saw dentist due to pain in past 12 months	25 [21.9-29.0]

Source: DR1983 CHA Survey Respondents 18-34

Disparities in health status and access to care by race can be noted in the ages 18-34 population. Health behaviors show over 1 in 3 (37%) whites smokes, compared to 14% to 20% of their non-white counterparts. Nearly three-fourths (70%) of Hispanics are above normal weight for height (BMI over 25) compared to about half (55%) of whites (Table 35).

The most frequently diagnosed condition in this age cohort is depression (17%), led by whites (21.7%). Blacks report higher current asthma (15.1%), hypertension (12.4%), and diabetes (4.8%) prevalence than other groups. Hispanics were more likely to report any form of heart disease or event (2.5%).

Overall, less than 60% Hispanics had health care coverage, only slightly below the 62.5% of blacks, but over 1 in 3 or 4 (28.7% to 34.7%) of non-Hispanic whites reported forgoing medical care or prescriptions due to cost in the past year.

Table 35: Health Status and Access to Care for 18- to 34-Year-Olds, Marion County, CHA Survey 2012

CHA 2012 18-34 year olds: health status	All	White (n=334)	Black (n=207)	Latino (n=148)	Other (n=57)
Current smoker	28%	37.3%	20.6%	14.4%	34.4%
BMI > 25 (over normal BMI)	60%	54.9	63.5	69.9	37.9%
Ever diagnosed with:					
Depression	17%	21.7%	12.7%	14.3%	16.0%
Asthma		18.4%	21.6%	12.8%	21.3%
Current asthma	11%	10.4%	15.1%	6.2%	15.0%
High cholesterol	6.3%	8.4%	4.3%	5.6%	2.8%
High blood pressure	9.7%	8.9%	12.4%	7.0%	11.5%
Heart event	1.1%	0.9%	0.2%	2.5%	2.4%
Diabetes	3.0%	2.7%	4.8%	1.4%	2.1%
Health care access:					
Health care coverage (yes)	66%	72.7%	62.5%	57.9%	60.8%
No MD visit past yr. due to cost	26%	28.7%	25.0%	20.8%	24.9%
No Rx past yr. due to cost	28%	34.7%	25.6%	18.7%	22.9%
Visit DDS with oral pain past yr.	24%	26.2%	27.0%	22.3%	23.8%

Source: DR2104, CHA 2012

Moderate Priority Issues

Sexually Transmitted Infections

During 2012, Marion County had fewer than five deaths directly attributable to HIV/AIDS in males ages 18-34, and no deaths among females of the same age. ⁶⁶ Due to low numbers of HIV-related deaths, most mortality rates could not be reported with confidence. The only reportable rate was for males of all ages combined, at 4.6 per 100,000 population (Table 36).

The lack of reported deaths during this period is encouraging as HIV/AIDS appeared among the top 10 leading causes of death when 2008-2012 data were aggregated. Nevertheless, some populations bear the brunt of HIV mortality. In 2012, HIV mortality in males was more than three times that of females (RR: 3.6). Racial disparity is even more pronounced. The total 2012 HIV mortality rate in blacks nearly doubled that for whites, at 4.6 vs. 2.4 per 100,000 (RR: 1.9).

When comparing the 2010 Marion County HIV mortality rate to those reported by peer counties, the local rate was twice that of Franklin County, OH, at 4.1 vs. 2.0 per 100,000.⁶⁷ Similarly, the local rate was higher than the national rate for the same period, at 4.1 vs. 2.6 per 100,000.⁶⁸ The HP2020 objective is to reduce age-adjusted HIV mortality to no more than 0.7 deaths per 100,000 annually.⁶⁹

Table 36: STI Rates per 100,000 for Ages 18-34 by Gender and Age, Marion County, 2012

	Males			Females			
Age groups, ages 18-34	18-24	25-34	All ages	18-24	25-34	All ages	
HIV/AIDS mortality (N)	(0)	* (<5)	4.6 (20)	(0)	(0)	* (6)	
HIV/AIDS prevalence (N)	399.2 (181)	790.6 (560)	820.1 (3,573)	83.3 (41)	239.0 (176)	182.8 (855)	
HIV incidence (N)	24.3 (11)	91.8 (65)	36.7 (160)	16.2 (8)	13.6 (10)	8.1 (38)	
Syphilis incidence (primary/secondary) (N)	86.0 (39)	55.1 (39)	27.8 (121)	8.1 (<5)	* (<5)	* (<5)	
Chlamydia incidence (N)	3,253.3 (1,475)	1,475.3 (1,045)	711.1 (3,098)	8,196.8 (4,037)	2,324.6 (1,712)	1,478.9 (6,917)	
Gonorrhea incidence (N)	1,354.3 (639)	800.5 (570)	362.9 (1,581)	1,774.6 (891)	678.9 (504)	363.1 (1,698)	

Source: DR1960. *Rate did not fall within the 95% confidence interval. Data on 2012 HIV-related deaths was collected in April 2013, at which time it was expected to be 99% complete.⁷⁰

Prevalence of HIV/AIDS is considerably higher among men than among women. In fact, the rate in males ages 18-24 is nearly five times the rate among females of the same age (RR: 4.8); the rate in males ages 25-34 is more than three times that of same-age females (RR: 3.3) (Table 36).⁷¹ Black residents bear the greatest burden of HIV/AIDS prevalence, just as they do in Franklin County, OH, and nationally (Appendix 8a).^{72,73} When compared to Franklin County and U.S. rates, Marion County prevalence is higher throughout the lifespan, peaking at ages 45-49 (Appendix 8a).

From 2008-2012, HIV incidence for all age groups remained relatively stable in Marion County (21-22 cases per 100,000) and was similar to rates for Franklin County. However, some

increases have occurred among blacks and Hispanics (Appendix 8a) and for the 20-24 age group (data not shown). The HP2020 objective for this health issue is to decrease HIV incidence to 3.5 cases per 100,000, based upon the number of people living with HIV/AIDS in the county.

Chlamydia (Chlamydia trachomatis)

Chlamydia is the most common bacterial sexually transmitted disease in the U.S.⁷⁴ The rate of chlamydia infection is one indicator that often places Marion County at a lower ranking than other Indiana counties in the County Health Rankings index.

Chlamydia rates were high among the 18-34 age group for both genders. However, among women ages 18-24, the rate is over twice that of men and nearly quadruple that of women ages 25-34 (Appendix 8b).

Rates decline considerably for both genders as they pass their mid-20s (Appendix 8b). For ages 18-24, the chlamydia incidence rate was higher in Marion County than rates in the U.S. Incidence was higher in black males and females than in any other race (Appendix 8b). There is no established HP2020 objective at this time.

Syphilis (Treponema pallidum)

At incidences of 45.5 per 100,000 for ages 18-24 and 27.7 per 100,000 for ages 25-34, Marion County's syphilis rates are more than three times national rates (Appendix 8b). Primary and secondary syphilis is found predominantly among men in Marion County, and men who have sex with men are its most prevalent risk factor. It is found most often in those ages 18-34 (Appendix 8b).

The county's upward trend in syphilis incidence (8.3 per 100,000 in 2008 vs. 14.2 in 2012) is similar to other peer urban counties. It is increasing at a rapid rate among Marion County's black men, whose rates are three times the national incidence rates. Roughly half of syphilis infections are co-incident with new HIV infections in the county.

Overall, syphilis incidence is increasing, and the local rate is higher than peer and national rates (Appendix 8b). The HP2020 objective is to reduce primary and secondary syphilis incidence in males to 6.7 cases per 100,000 annually. The objective for females is to reduce incidence to 1.3.

Gonorrhea (Neisseria gonorrhoeae)

Gonorrhea is second only to chlamydia in terms of high STD incidence in Marion County. Unlike chlamydia and syphilis, however, gonorrhea incidence has been decreasing recently. Incidence has decreased from 408.3 per 100,000 in 2008 to 356.8 in 2012 (Appendix 8b). Despite this positive news, gonorrhea remains a concern not only due to its high prevalence, but also to the emergence of antibiotic resistance.

Those ages 18-24 experience the highest gonorrhea incidence, followed by those ages 25-34 (Appendix 8b). As with HIV and other sexually transmitted infections, there is a very significant racial disparity in gonorrhea incidence. Black residents contracted gonorrhea at a rate more than eight times that of any other race (Appendix 8b). The HP2020 objective is to reduce gonorrhea incidence to 194.8 cases per 100,000 in males, and to 251.9 cases per 100,000 in females.

Obesity and Self-Reported Health Status

According to the BRFSS survey, Marion County was similar to the U.S. in terms of overweight and obesity in the 18-25 age group. However, county residents were less likely to exercise or get their cholesterol checked and were much more likely to smoke or have a diagnosis of hypertension than their U.S. counterparts (Table 37).

In the 25-34 age group, Marion County mortality due to heart disease and cancers was 25% to 40% greater than U.S. rates, and there was a 40% increase in heart disease deaths in the past decade.⁷⁵

Table 37: BRFSS Chronic Disease Risk Factors, Ages 18-24 Marion County, 2008-2010 and U.S., 2010

BRFSS chronic disease risk factors:	MC (2008-2010)	US 2010	RR
Overweight (25 <= BMI < 30)	16.5%	24.0%	0.7
Obese (BMI >= 30)	17.2%	17.4%	1.0
Exercise in past 30 days	75.1%	82.3%	0.9
Cholesterol checked, high (2009 data available)	10.6%	12.9%	0.8
Consumed fruit/vegetables 5+ times per day (2009 data available, MC and U.S.)	37.4%	21.6%	1.7
Current smoker	29.5%	19.3%	1.5
Quit smoking one day or more in the past year	70.0%	67.4%	1.0
Diagnosed high blood pressure (2009 data available)	10.2%	7.3%	1.4

Source: DR1939

In the 2012 CHA survey, about one-third of the 910 respondents ages 18-34 were determined to be overweight or obese. Hypertension (9.7%) was the most prevalent obesity-related chronic condition reported in this age group (Table 38) followed by high cholesterol (6.3%) and diabetes (3%). Less than 1.1% had had a cardiovascular event. By race, whites were more likely to have been diagnosed with high cholesterol (8.4%) while blacks had higher prevalence of hypertension and diabetes (Table 39).

Table 38: Obesity Related Conditions for Ages 18-34, Marion County, CHA Survey 2012

Age 18-34 ever been diagnosed with (CHA, 2012)	% [95% CI]
Hypertension/high blood pressure, not in pregnancy	9.7 [7.1-12.3]
High blood cholesterol	6.3 [4.2-8.4]
Diabetes or high blood sugar, not in pregnancy	3.0 [1.7-4.2]
Heart attack, angina or coronary heart disease	1.1 [0.2-2.1]

DR1983 CHA survey respondents age 18-34

Table 39: Obesity-Related Conditions for Ages 18-34 by Race, Marion County, CHA Survey 2012

CHA 2012 18-34 year olds: health status	All	White (n=334)	Black (n=207)	Latino (n=148)	Other (n=57)
Ever diagnosed with:					
High cholesterol	6.3%	8.4%	4.3%	5.6%	2.8%
High blood pressure	9.7%	8.9%	12.4%	7.0%	11.5%
Heart disease	1.1%	0.9%	0.2%	2.5%	2.4%
Diabetes	3.0%	2.7%	4.8%	1.4%	2.1%

DR2107 CHA survey respondents age 18-34

Smoking Rates in Young Adults

Overall, more than 1 in 4 (28%) 18- to 34-year-olds smokes. Among whites, more than 1 in 3 (37.3%) respondents reported current smoker status, which was 1 in 5 (20.6%) among blacks. Overall, 1 in 10 of these young adults suffer from current asthma and hypertension, both smoking-related diseases (Table 40). The highest asthma and hypertension prevalence is reported by blacks (15.1% and 12.4%, respectively).

Compared to national BRFSS figures, Marion County young adults are 50% more likely to smoke and 40% more likely to be hypertensive than their U.S. counterparts (Table 41).

Table 40: Smoking Status by Race and Related Health Outcomes: CHA Respondents Ages 18-34, Marion County, 2012

CHA 2012	All	White (n=334)	Black (n=207)	Latino (n=148)	Other (n=57)
Current smoker	28%	37.3%	20.6%	14.4%	34.4%
Ever diagnosed with:					
Depression	17%	21.7%	12.7%	14.3%	16.0%
Current asthma	11%	10.4%	15.1%	6.2%	15.0%
High blood pressure	9.7%	8.9%	12.4%	7.0%	11.5%

Source: DR2107, CHA respondents, ages 18-34

Table 41: Chronic Disease Risk Factors for Ages 18-24 BRFSS Respondents: Marion County, 2008-2010 and U.S., 2010

Chronic disease risk factors:	MC (2008-2010)	US 2010	RR
Current smokers	29.5%	19.3%	1.5
Quit smoking one day or more in the past year.	70.0%	67.4%	1.0
Diagnosed high blood pressure (2009 MC data available)	10.2%	7.3%	1.4

Source: DR1939 (BRFSS 2010-2012)

A total of 15% of all Marion County mothers ages 18-34 smoke in pregnancy (Table 42), which is related to adverse outcomes of low birth weight and premature births. White mothers ages 18-34 continue to have the highest percentage of smoking during pregnancy of all age-race groups, hovering between 23% to 25% since 2008. On the other hand, Hispanic mothers, with 2.7% smoking prevalence in pregnancy, most approach the HP2020 objective (2.4%).

Table 42: Birth Outcomes for Mothers Ages 18-34, Marion County, 2008-2012

Marion County birth statistics	2008	2009	2010	2011	2012	HP 2020
Low birth weight (LBW)	9.5%	10.3%	9.8%	9.5%	9.1%	7.8%
Very low birth weight (VLBW)	1.8%	2.3%	2.1%	2.1%	1.9%	1.4%
Prematurity	11.3%	11.7%	10.2%	10.2%	10.2%	11.4%
Smoking during pregnancy	16.6%	16.3%	16.6%	15.7%	15.3%	◊98.6%
White, non-Hispanic	25.0%	24.4%	24.8%	23.0%	23.3%	◊98.6%
Black, non-Hispanic	13.5%	12.4%	13.5%	12.5%	12.6%	◊98.6%
Hispanic	2.5%	3.3%	2.7%	3.7%	2.7%	◊98.6%

Source: DR1935, Marion County birth certificates. Abstain in pregnancy

Special At-Risk Populations

As noted earlier, conditions of low educational achievement, reduced employment opportunities and family income, and low family stability and security tend to cluster as precursors to poor health patterns and outcomes. These "social determinants of health" tend to influence a broad spectrum of health measures across all ages (See Appendix 2).

High school dropouts

Educational status in particular affects health both directly, through ability to understand health risks and health care directives, and indirectly, through reduced income and access to care. Dropout rates are associated with other factors such as teen pregnancy, substance abuse, high poverty rates and high proportion of female-headed households.

High school completion rate (indicated by proportion of 9th graders who graduate from high school in four years) is listed among the social and economic factors contributing to health in the County Health Rankings (Appendix 3). School dropouts are defined as all students in grades 6-12 who leave school before graduation without transferring to another school, who fail to return when expelled, or who transfer to adult programs, technical schools, GED programs or other programs not leading to a high school diploma. It also includes students who are incarcerated in adult institutions. ⁷⁶

The highest dropout rate (2009-2010 is the most recently available data) occurs in the largest public school corporation, Indianapolis Public Schools (IPS), at 13.5 per 1,000 enrollment (Table 43).⁷⁷ The district has held this distinction over the past several years. The numbers of dropouts have improved since 2007 in many of the districts, including IPS, Wayne, Warren and Lawrence.

Table 43: School Dropouts by District, All Grades, Marion County, 2009-2010

District	District enrollees	No. dropouts	Rate*
IPS	33,080	445	13.5
Decatur	6,435	42	6.5
Warren	11,741	42	3.6
Lawrence	15,464	52	3.4
Franklin	8,952	30	3.4
Pike	11,074	29	2.6
Perry	14,423	35	2.4
Beech Grove	2,628	6	2.3
Washington	11,155	24	2.2
Wayne	16,003	32	2.0
Speedway	1,509	0	0.0

Source: DR2128, Drug Free Marion County 2011 Report, Table 5-3h. *Rate per 1,000.

Greater school retention and graduation rates should help ensure improved community stability and higher employment opportunities for young adults.

Emancipated foster-care youth

As of 2012, 10,000 foster children live in Indiana, 1,963 of them in Marion County,⁷⁸ making up 0.85% of all Marion County children under age 18.⁷⁹ These are children who have been removed from their homes by the Department of Child Services (DCS) due to abuse or neglect.

The number of Indiana children in foster care increased 44.8% from 2002-2010, while the national trend decreased 21.8% during the same time. ⁸⁰ Table 44 indicates how many children in Marion County are designated by the DCS as "substantiated cases of child abuse or neglect." ⁸¹

Table 44: Child Abuse and Neglect Rate per 1,000 Children under Age 18, Marion County, 2006-2011

	2006	2007	2008	2009	2010	2011
Rate	14.1	12.0	14.9	22.2	21.7	19.7
Number			2,999	3,041	2,982	2,690

http://datacenter.kidscount.org/data/bystate/Rankings.aspx?state=IN&ind=1130&dtm=2467

Unfortunately, it is not clear how many children are returned successfully back to their birth families or who are moved to foster care, but it appears over 70% of the substantiated abuse/neglect caseload spends some period in foster care.⁸²

It is estimated that 65-75 foster children "age-out" of the system in Marion County each year. These foster children are at higher risk of unemployment, incarceration, homelessness and reliance on public benefits than other youth. On emancipation (at age 18), foster "alumni" face hardships including:⁸³

- Over 22% experience homelessness, and 17% receive public assistance⁸⁴
- 50% experience unemployment
- 33.2% have household incomes at or below the poverty line
- 25% are incarcerated within the first two years of emancipation⁸⁵
- 25.2% are diagnosed with post-traumatic stress disorder double the rate of U.S. veterans.⁸⁶

A 2011 pilot initiative between Indiana DCS and the National Center for Youth Law (NCYL) is focusing on the educational achievement of foster children.⁸⁷ The challenges facing these youth include behavior issues, special education, enrollment in appropriate school or classes, needed

academic support, attendance issues, transition to college or career, education support from caregiver, missing education records or credit, and missed educational opportunities.

Since 2011, the program, FosterEd: Marion County, has provided 2,500 foster children living in Marion County with the educational supports they need, given multiple transitions from foster home to foster home and school to school. Without a constant adult to support their education, they fall behind. Many drop out before finishing high school. Studies show that, in addition:⁸⁸

- 67% of foster children become suspended, and 17% are expelled from school over three times the general population.
- They are twice as likely as their peers to drop out of school.⁸⁹
- Those who attend public schools score 16 to 20 percentile points below non-fostered youth on statewide standardized tests.
- Only half (54%) complete high school.⁹⁰
- Only 1.8% completes a bachelor's degree (vs. 24% of the general population).

Emancipated foster youth are poorly equipped to support themselves as adults. FosterEd aims to strengthen their futures by strengthening their educations. It provides technical assistance to a coalition of agencies and organizations to improve the academic success of Marion County foster children through improved inter-agency collaboration, providing educational champions to children and creating a network of foster youth education liaisons. A growing body of evidence suggests each of these strategies is effective in school success:

- Disadvantaged children who receive educational championing are more likely to remain enrolled in school.⁹¹
- Children served by youth education liaisons are less likely to be suspended or expelled, and they are more likely to experience significant GPA improvements and graduate.⁹²

FosterEd: Marion County serves as a model for similar efforts nationwide. It was recently awarded a \$50,000 USA Funds grant and a \$50,000 Community Crime Prevention grant to improve the educational outcomes of Indianapolis foster children and reduce the number of those who enter the justice system.

Homeless young adults

In 2013, Marion County recorded 1,647 homeless individuals.⁹³ It ranks in the middle of our peer counties in the rate of homeless per 10,000 population (17.9).⁹⁴ In 2013, 21.2% of the recorded homeless persons were individuals ages 18-34.

Marion County's most recent annual homeless count, completed in January 2013, found that 342 of 1,599 homeless persons (21%) were youth under age 18.95 There were 151 families sheltered, with an average of 2.2 children each, accounting for 334 total children.96 Fourteen women who were pregnant were sheltered, and five women who were pregnant were unsheltered. Of the 342 homeless youth reported, 96 were foster children (28%).

Summary and Conclusions

The work group identified three high priority issues for young adults: high rates of violent death, poverty, depression and substance abuse.

Homicide is the leading cause of death in the county's 18- to 24-year-olds, and it is the second leading cause of death for ages 25-34. In addition, this age group is among the poorest in the county, which affects its access to health care and impacts other health indicators. It is also among the most depressed of the age groups, with 47% of 18- to 25-year-olds reporting 14 or more poor mental health days in the past month.

Recent interventions hold promise, including Prescription for Hope/Peace in the Streets, which seeks to stem the cycle of violence in this population, and FosterEd: Marion County, which provides educational and other support to foster youth who often face unemployment and poverty upon emancipation. While improving graduation rates will help other Marion County youth enter adulthood with more promise, more help is needed to assure self-sufficiency for these young adults already trying to make their ways in the world.

Acknowledgments

The Epidemiology staff would like to thank the work group and other contributors for their enthusiasm, expertise and willingness to undertake difficult topics in a very short period of time. Additionally, we thank Franciscan St. Francis Health and their representative, Fred Bagg, for sharing the 2009-2011 county hospital ED data for this Community Health Assessment.

Our thanks also to Steven Jacobs, who facilitated meeting schedules, lists of key participants and other tasks by the dozens, and MPH intern Crystal O'Donnell for her assistance with the Health Assessment.

Appendix 1: Members, Community Health Assessment Work Group Ages 18-34

Name: Representing:

Bill Allen, M.D. St. Vincent Women's Hospital

Lee Bernard, N.P. IUPUI Student Health Services

Deidra Coleman Indianapolis Urban League

Sandra Cummings MCPHD Chronic Disease Division

Karen Dees Domestic Violence Network

Brian Dixon Indianapolis Metropolitan Police Department

Paula French Step Up, Inc.

Pastor John E. Girton, Jr. Indiana Healthy Marriage and Family Coalition

Angela Goode Minority Health Coalition of Marion County

Jason Grisell Health Foundation of Greater Indianapolis, Inc.

William Jenkins City of Indianapolis, Offender Re-entry Program

Byron Johnson MCPHD Violence Prevention

Marcia Jordan LifeCare

Regina Marsh Director, Forest Manor Multi-Service Center

Anthony Smith Brothers United

Julie Szempruch Midtown Mental Health

Teena Turner Bethlehem House

Sarah Wiehe, M.D. IU School of Medicine, Adolescent Medicine,

Childrens Services Research Center

Clif Whitson Ivy Tech Student Life and Development

Staff:

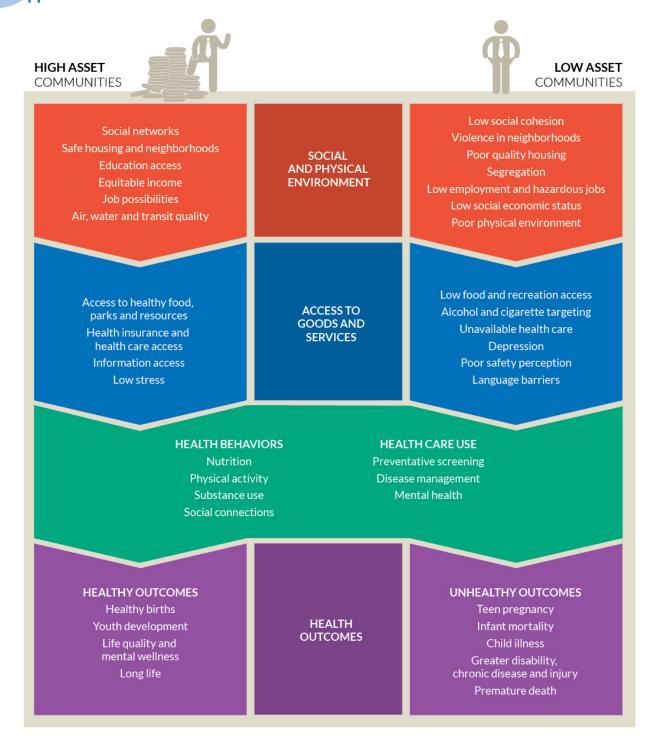
Joe Gibson, Director, Epidemiology

Millie Fleming-Moran, Epidemiologist Researcher

Stephen Clarke, Epidemiology Programmer

Tammie L. Nelson, Epidemiologist

Appendix 2: Social Determinants of Health



Source: Marion County Public Health Department (2012). Marion County 2012 Community Health Assessment.

Appendix 3: County Health Rankings, Marion County, 2012

2012 County Health Rankings	Marion County	Error margin	Indiana	National benchmark*	Trend	Rank (of 92)
Health Outcomes						79
Mortality						78
Premature death (Years of Potential Life Lost before age 75)	9,042	8,826- 9,259	7,520	5,317		
Morbidity			•			73
Poor or fair health	17%	16-19%	16%	10%		
Poor physical health days in past month	3.6	3.4-3.8	3.6	2.6		
Poor mental health days in past month	3.8	3.5-4.0	3.6	2.3		
Low birth weight	9.4%	9.3-9.6%	8.3%	6.0%		
Health Factors						87
Health Behaviors						73
Adult smoking	26%	24-27%	24%	13%		
Adult obesity	30%	29-32%	31%	25%		
Physical inactivity	26%	25-28%	27%	21%	N	
Excessive drinking	16%	15-18%	16%	7%		
Motor vehicle crash death rate per 100,000	11	10-12	13	10		
Sexually transmitted infections (chlamydia per 100,000)	808		351	92		
Teen birth rate (per 1,000 females age 15-19)	60	59-61	41	21		
Clinical Care						22
Uninsured	20%	19-21%	17%	11%		
Primary care physicians**	1,298:1		1,557:1	1,067:1		
Dentists**	1,422:1		2,165:1	1,516:1		
Preventable hospital stays [◊]	68	66-70	76	47	X	
Diabetic screening	82%	81-84%	83%	90%	N	
Mammography screening	63%	61-65%	64%	73%	X	
Social & Economic Factors						91
High school graduation** (9th grade cohort graduation in 4 years)	81%		86%			
Some college	58%	57-60%	59%	70%		
Unemployment	9.4%		9.0%	5.0%	\approx	

2012 County Health Rankings	Marion County	Error margin	Indiana	National benchmark*	Trend	Rank (of 92)
Children in poverty	32%	29-35%	23%	14%	×	
Inadequate social support	23%	22-25%	20%	14%		
Children in single-parent households	46%	44-47%	32%	20%		
Violent crime rate (per 100,000)	1,146		327	66		
Physical Environment						73
Daily fine particulate matter (PPM)	13.1	12.9-13.3	13.0	8.8		
Drinking water safety	0%		2%	0%		
Access to recreational facilities	10%		9%	16%		
Limited access to healthy foods**	8%		6%	1%		
Fast food restaurants	55%		50%	27%		

^{* 90}th percentile, i.e., only 10% are better.

Note: Blank values reflect unreliable or missing data;

figures in red: "Challenges to Community" noted in CHR website.

^{**} Data should not be compared with prior years due to changes in definition.

[♦] Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees.

Appendix 4: Mortality Disparities by Race and Gender

Mortality Rate by Rank and Cause of Death in Ages 15-24, Marion County, 2008-2012

Rank	Cause of death	Male 15-24 rate* (deaths/yr.)#	Female 15-24 rate* (deaths/yr.)#	Male : Female rate ratio
1	Assault (homicide)	33 (133)	5 (19)	6.6
2	Accidents	29 (117)	8 (31)	3.6
3	Intentional self-harm (suicide)	13 (51)	4(18)	3.3
4	Malignant neoplasms	3 (13)	3 (11)	1.0
5	Diseases of heart	1 (5)	1 (5)	1.0
Total rate		96	29	3.3

DR1934. Created 26MAR2013 11:11, Marion County Public Health Department, Epidemiology. Source: Census, birth and death certificates. *Rate per 100,000 population. #Five-year average number of deaths per year.

Mortality Rate by Rank and Cause of Death in Ages 25-34, Marion County, 2008-2012

Rank	Cause of death	Male 25-34 rate*	Female 25-34 rate*	Male : Female rate ratio
1	Accidents	100	40	2.6
2	Assault (homicide)	100	16	6.3
3	Intentional self-harm (suicide)	59	13	4.5
4	Diseases of heart	30	18	1.7
5	Malignant neoplasms	20	26	0.8
Total rate		419	160	2.6

DR1934. Created 26MAR2013 11:11, Marion County Public Health Department, Epidemiology. Source: Census, birth and death certificates. *Rate per 100,000 population.

Mortality Rate by Rank and Cause of Death in Ages 15-24, Black and White Residents, Marion County, 2008-2012

Rank	Cause of death	White 15-24 rate* (deaths/yr.)#	Black 15-24 rate* (deaths/yr.)#	Black : White rate ratio
1	Accidents	19 (92)	15 (34)	0.8
2	Intentional self-harm (suicide)	9 (42)	7 (15)	0.8
3	Assault (homicide)	4 (20)	52 (117)	13.0
4	Malignant neoplasms	2 (9)	4 (9)	2.0
5	Congenital malformations, deformations & chromosomal abnormalities (white); Diseases of heart (black)	1(4)	3 (6)	N/A
Total rate		47	96	2.0

^{*}Rate per 100,000 population. *Deaths averaged for 5-year period.

Mortality Rate by Rank and Cause of Death in Ages 25-34, Black and White Residents, Marion County, 2008-2012

Rank	Cause of death, ranked by number of white deaths	White 25-34 rate*	Black 25-34 rate*	Black : White rate ratio
1	Accidents	84	20	0.2
2	Intentional self-harm (suicide)	44	32	0.7
3	Malignant neoplasms	20	37	1.9
4	Assault (homicide)	20	171	8.6
5	Disease of heart	14	54	3.9
6	Chronic liver disease & cirrhosis	4	N/A	N/A
7	Human immunodeficiency virus (HIV) disease	4	15	3.8
8	Congenital malformations, deformations & chromosomal abnormalities	3	N/A	N/A
9	Chronic lower respiratory diseases	3	N/A	N/A
Total rate		253	469	1.9

Source: DR1935 MC death certificates. *Rate per 100,000 population. N/A = Cells have too few cases to calculate a stable rate.

Mortality Rate by Rank and Cause of Death in Ages 25-34, Latino and White Residents, Marion County, 2008-2012

Rank	Cause of death, ranked by number of white deaths	White 25-34 Rate*	Latino 25-34 Rate [*]	Latino : White rate ratio
1	Accidents	84	50.0	0.6
2	Intentional self-harm (suicide)	44	6.0	0.1
3	Malignant neoplasms	20	15.0	0.8
4	Assault (homicide)	20	29.0	1.5
5	Diseases of heart	14	26.0	1.9
6	Chronic liver disease & cirrhosis	4	N/A	N/A
7	Human immunodeficiency virus (HIV) disease	4	12.0	3.0
8	Congenital malformations, deformations & chromosomal abnormalities	3	N/A	N/A
9	Chronic lower respiratory diseases	3	N/A	N/A
Total rate		253	169	0.7

Source: DR1935 MC death certificates. *Rate per 100,000 population. N/A = Cells have too few cases to calculate a stable rate.

Appendix 5a: Hospitalizations Ages 15-44, Marion County and U.S., 2009-2011

Principal diagnosis	Marion Co. (N)#	Marion Co. rate [*]	U.S. (2009) rate [*]	MC : U.S. rate ratio
Total (all causes)	3,462	760.6	838.8	0.9
Infectious and parasitic diseases	154	21.4	15.2	1.4
Neoplasms	238	14.7	19.1	0.8
Endocrine, nutritional and metabolic immunity disorders	123	27.6	31.5	0.9
Diseases of the blood and blood- forming organs	51	12.7	9.5	1.3
Mental disorders	191	75.1	85.4	0.9
Diseases of the nervous system and sense organs	201	13.6	19.3	0.7
Diseases of the circulatory system	223	31.8	33.0	1.0
Diseases of the respiratory system	127	29.2	32.5	0.9
Diseases of the digestive system	252	51.3	74.3	0.7
Diseases of the genitourinary system	144	24.2	36.3	0.7
Complications of pregnancy, childbirth, and the puerperium	383	37.4	39.8	0.9
Diseases of the skin and subcutaneous tissue	66	13.6	17.4	0.8
Diseases of the musculoskeletal system and connective tissue	204	13.6	22.7	0.6
Congenital anomalies	64	1.7	3.0	0.6
Certain conditions originating in the perinatal period	3	.03	**	**
Injury and poisoning	869	52.3	64.0	0.8
Supplementary classifications	58	319.3	330.8	1.0

Source: DR1941. #N=Average number of hospitalizations over the three-year period. *Rate per 10,000. **No U.S. data given.

Appendix 5b: Hospitalizations for Ages 15-44 by Gender, Marion County and U.S., 2009-2011

Principal diagnosis, Marion County hospitalizations, 2009-2011	Female (N) [#]	Male (N) [#]	Female rate [*]	Male rate*	M : F ratio
Total (all causes)	22,132	7,882	1,102.1	406.7	0.4
Infectious and parasitic diseases	400	445	19.9	23.0	1.2
Neoplasms	430	151	21.4	7.8	0.4
Endocrine, nutritional and metabolic diseases, and immunity disorders	536	552	26.7	28.5	1.1
Diseases of the blood and blood-forming organs	275	225	13.7	11.6	0.9
Mental disorders	1,460	1,503	72.7	77.5	1.1
Diseases of the nervous system and sense organs	337	198	16.8	10.2	0.6
Diseases of the circulatory system	539	716	26.8	37.0	1.4
Diseases of the respiratory system	657	497	32.7	25.7	0.8
Diseases of the digestive system	1,067	956	53.2	49.3	0.9
Diseases of the genitourinary system	717	239	35.7	12.3	0.4
Complications of pregnancy, childbirth, and the puerperium	1,474	1	73.4	na	
Diseases of the skin and subcutaneous tissue	231	306	11.5	15.8	1.4
Diseases of the musculoskeletal system and connective tissue	264	261	13.2	13.5	1.0
Congenital anomalies	37	31	1.8	1.6	0.9
Certain conditions originating in the perinatal period	2	na	0.1	na	
Injury and poisoning	841	1224	41.9	63.2	1.5

Source: DR 1941, amended October 2013. *N=Average number of hospitalizations over the three-year period. *Rate per 10,000.

Appendix 6: Emergency Department Visits for Ages 15-24 and 25-34, Marion County, 2009-2011

Emergency department visits for Marion County residents 15-24 years: 2009-2011

Principal diagnosis	No. of visits	% of total	Rate*
Total (all causes)	69,001	100%	5,260.88
Injury and poisoning	14,188	20.6%	1,081.72
Diseases of the respiratory system	6,827	9.9%	520.49
Diseases of the genitourinary system	6,440	9.3%	491.01
Complications of pregnancy, childbirth, and the puerperium	5,682	8.2%	433.22
Diseases of the musculoskeletal system and connective tissue	4,702	6.8%	358.52
Diseases of the digestive system	3,995	5.8%	304.57
Diseases of the skin and subcutaneous tissue	3,488	5.1%	265.94
Diseases of the nervous system and sense organs	2,829	4.1%	215.72
Infectious and parasitic diseases	2,397	3.5%	182.73
Mental disorders	2,017	2.9%	153.81
Supplementary classifications	1,543	2.2%	117.64
Endocrine, nutritional and metabolic diseases, and immunity disorders	342	0.5%	26.10
Diseases of the circulatory system	336	0.5%	25.62
Diseases of the blood and blood-forming organs	261	0.4%	19.87
Neoplasms	29	0.0%	2.19
Other	15	0.0%	1.12
Congenital anomalies	13	0.0%	0.97
Certain conditions originating in the perinatal period	3	0.0%	0.25
Symptoms, signs, and ill-defined conditions	13,895	20.1%	1,059.38

Source: DR 1935 ED discharge data. *Rate per 10,000.

Emergency Department Visits for Marion County Residents 25-34 Years: 2009-2011

Principal diagnosis	No. of visits	% of total	Rate*
Total (all causes)	76,274	100%	579.19
Injury and poisoning	13,903	18.2%	962.27
Diseases of the musculoskeletal system and connective tissue	7,673	10.1%	531.07
Diseases of the respiratory system	7,035	9.2%	486.92
Diseases of the genitourinary system	5,781	7.6%	400.14
Diseases of the digestive system	5,708	7.5%	395.09
Diseases of the nervous system and sense organs	3,827	5.0%	264.88
Diseases of the skin and subcutaneous tissue	3,715	4.9%	257.13
Complications of pregnancy, childbirth, and the puerperium	3,696	4.8%	255.84
Mental disorders	2,291	3.0%	158.54
Infectious and parasitic diseases	2,034	2.7%	140.76
Supplementary classifications	1,414	1.9%	97.84
Diseases of the circulatory system	747	1.0%	51.7
Endocrine, nutritional and metabolic diseases, and immunity disorders	596	0.8%	41.27
Diseases of the blood and blood-forming organs	273	0.4%	18.9
Neoplasms	47	0.1%	3.23
Congenital anomalies	16	0.0%	1.13
Other	16	0.0%	1.11
Certain conditions originating in the perinatal period	1	0.0%	0.07
Symptoms, signs, and ill-defined conditions	17,501	22.9%	1211.3

Source: DR1953 ED discharge data. *Rate per 10,000.

Appendix 7: Injury-Related Emergency Department Visits for Ages 15-24 and 25-34, Marion County, 2009-2011

Injury-related emergency department visits, Marion County residents 15-24 years: 2009-2011

	No. of		Rate/
Principal diagnosis	visits	% of total	10,000
Total (all causes)	86,998	100%	6,633.1
Sprains and strains of joints and adjacent muscles	19,862	22.8%	1,514.3
Contusion with intact skin surface	13,760	15.8%	1,049.1
Open wound of upper limb	7,152	8.2%	545.3
Open wound of head, neck, and trunk	6,083	7.0%	463.8
Superficial injury	5,075	5.8%	386.9
Certain traumatic complications and unspecified injuries	4,842	5.6%	369.2
Fracture of upper limb	4,190	4.8%	319.5
Open wound of lower limb	2,488	2.9%	189.7
Poisoning by drugs, medicinal and biological substances	2,480	2.9%	189.1
Other and unspecified effects of external causes	2,385	2.7%	181.8
(E) Other accidents	2,285	2.6%	174.2
(E) Motor vehicle traffic accidents	2,198	2.5%	167.6
Fracture of lower limb	1,908	2.2%	145.5
(E) Accidental falls	1,795	2.1%	136.9
Intracranial injury, excluding those with skull fracture	1,570	1.8%	119.7
Dislocation	1,408	1.6%	107.4
Burns	1,185	1.4%	90.4
Fracture of skull	1,130	1.3%	86.2
Effects of foreign body entering through body orifice	860	1.0%	65.6
Toxic effects of substances, non-medicinal as to source	797	0.9%	60.7
Complications of surgical and medical care	743	0.9%	56.7
(E) Homicide and injury purposely inflicted by other persons	722	0.8%	55.0
(E) Drugs, medicinal and biological substances causing adverse effects in therapeutic use	423	0.5%	32.3
Fracture of neck and trunk	272	0.3%	20.7
(E) Accidents due to natural and environmental factors	158	0.2%	12.1
Crushing injury	150	0.2%	11.4
(E) Accidental poisoning by other solid and liquid substances	147	0.2%	11.2
(E) Surgical and medical procedures as the cause of abnormal reaction of			
patient or later complication	143	0.2%	10.9
Late effects of injuries, poisonings, toxic effects	132	0.2%	10.0
Other	120	0.1%	9.2
Internal injury of thorax, abdomen, and pelvis	118	0.1%	9.0
(E) Other road vehicle accidents	68	0.1%	5.2
(E) Legal intervention	63	0.07%	4.8
(E) Late effects of accidental injury	58	0.07%	4.5
(E) Suicide and self-inflicted injury	55	0.06%	4.2

Source: DR1953, (E) codes are ICD-9 external cause injury coded events. Color highlighting simplifies cause identifications.

Injury-related emergency department visits, Marion County residents 25-44 years of age: 2009-2011

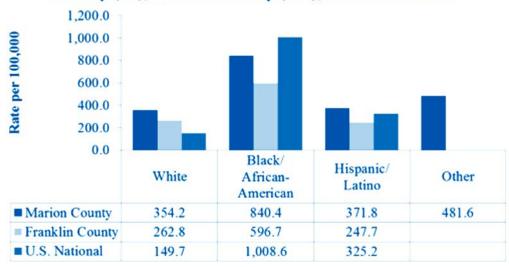
Principal diagnosis	No. of visits	% of total	Rate/ 10,000
total (all causes)	149,088	100%	5,659.0
Sprains and strains of joints and adjacent muscles	40,557	27.2%	1,539.4
Contusion with intact skin surface	22,008	14.8%	835.4
Open wound of upper limb	11,270	7.6%	427.8
Open wound of head, neck, and trunk	8,615	5.8%	327.0
Superficial injury	6,960	4.7%	264.2
Traumatic complications/ unspecified injuries	6,953	4.7%	263.9
Fracture of upper limb	6,045	4.1%	229.5
(E) Accidental falls	5,147	3.5%	195.4
(E) Other accidents	4,968	3.3%	188.6
Fracture of lower limb	4,327	2.9%	164.2
Other and unspecified effects of external causes	4,075	2.7%	154.7
Poisoning by drugs, medicinal and biological substances	3,572	2.4%	135.6
(E) Motor vehicle traffic accidents	3,342	2.2%	126.8
Open wound of lower limb	3,300	2.2%	125.3
Burns	2,438	1.6%	92.6
Complications of surgical/medical care	2,187	1.5%	83.0
Foreign body entering through body orifice	1,692	1.1%	64.2
Dislocation	1,677	1.1%	63.6
Intracranial injury, excluding skull fracture	1,630	1.1%	61.9
Fracture of skull	1,580	1.1%	60.0
Toxic effects of substances, non-medicinal as to source	1,295	0.9%	49.2
(E) Drugs, medicinal and biological substances causing adverse effects in therapeutic use	1,017	0.7%	38.6
Fracture of neck and trunk	1,005	0.7%	38.2
(E) Homicide	980	0.7%	37.2
(E) Surgical and medical procedures as the cause of abnormal reaction of patient or later complication, without mention of misadventure at the time of procedure	322	0.2%	12.2

Source: DR1953 Injury related ED visits. (E) codes are ICD-9 external cause injury coded events. Color highlighting simplifies cause identification.

Appendix 8a: HIV/AIDS

HIV/AIDS Prevalence by Race/Ethnicity, Marion County, Franklin County (OH) and U.S., 2012

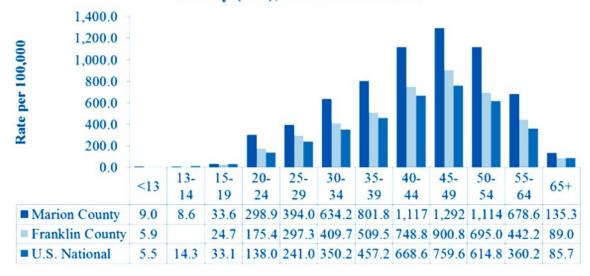
HIV/AIDS Prevalence by Race/Ethnicity, Marion County (IN), Franklin County (OH), and U.S. National



Source: DR1960. Empty cells are due to unavailable data.

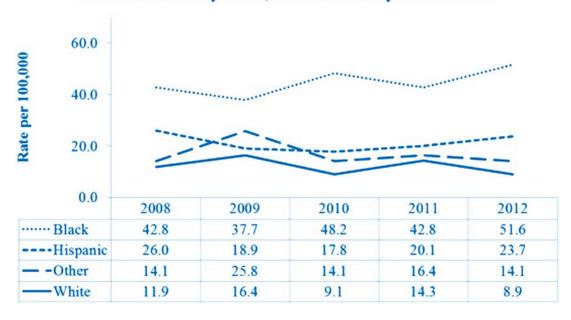
HIV/AIDS Prevalence by Age, Marion County, Franklin County (OH) and U.S., 2012

HIV/AIDS Prevalence by Age, Marion County (IN), Franklin County (OH), and U.S. National



Source: DR1960 U.S. rate for ages 55-64 was broken down to 55-59 and 60-64. In order to create a congruous chart, the average for the two groups was used to form a 55-64 category. Data unavailable in vacant cells.

HIV Incidence by Race, Marion County: 2008-2012

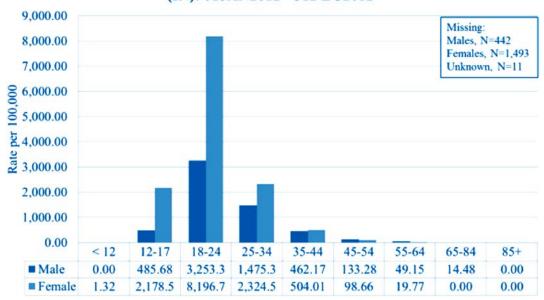


Source: DR1960

Appendix 8b: Sexually Transmitted Infections

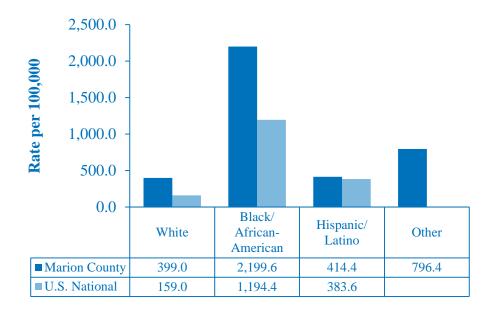
Chlamydia Incidence Rates by Gender and Age, Marion County, Calendar 2012

Chlamydia Incidence Rates by Gender and Age, Marion County (IN): 01JAN2012 - 31DEC2012



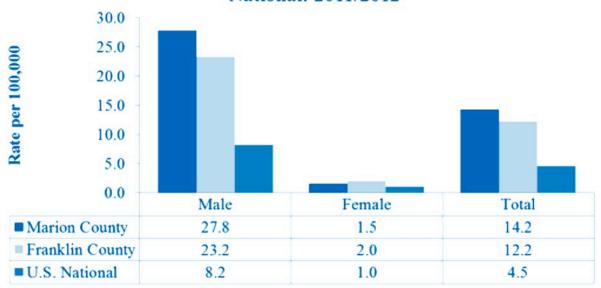
Source: DR1960

Chlamydia Incidence by Race/Ethnicity, Marion County and U.S., 2011-2012



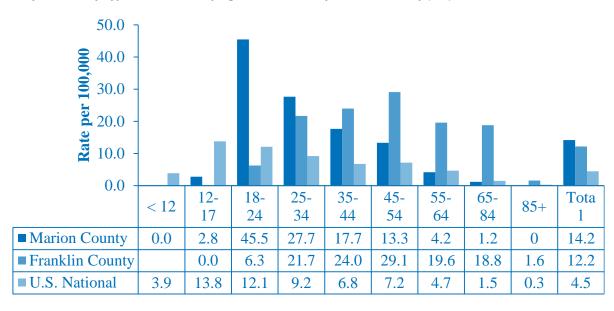
Source: DR1960. Empty cells are due to unavailable data.

Primary/Secondary Syphilis Incidence by Gender, Marion County, Franklin County (OH), and U.S. National: 2011/2012



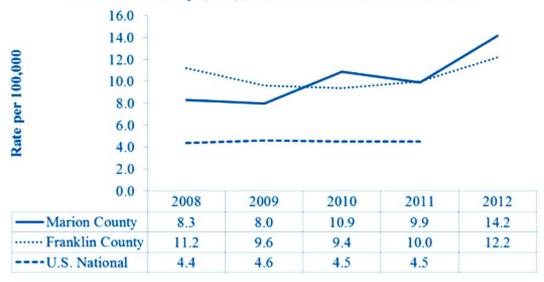
Source: DR1960

Primary/Secondary Syphilis Incidence by Age, Marion County, Franklin County (OH), and U.S., 2011-2012



Source: DR1960. Empty cells are due to unavailable data

Primary/Secondary Syphilis Incidence, Marion County, Franklin County (OH), and U.S. National: 2008-2012



Source: DR1960. Empty cells are due to unavailable data.

Gonorrhea Incidence, Marion County, Franklin County (OH), and U.S., 2008-2012

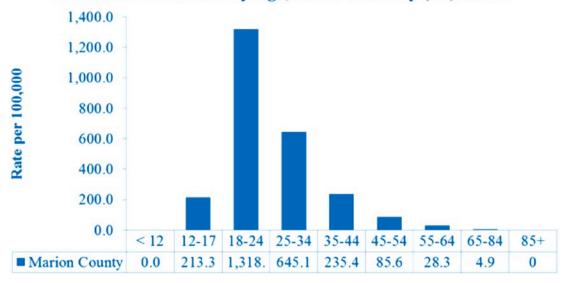
Gonorrhea Incidence, Marion County, Franklin County (OH), and U.S. National: 2008-2012



Source: DR1960. Empty cells are due to unavailable data.

Gonorrhea Incidence by Age, Marion County, 2012

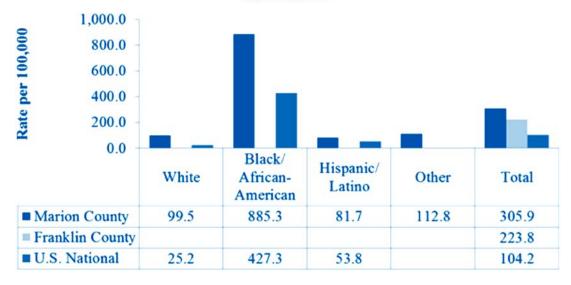
Gonorrhea Incidence by Age, Marion County (IN): 2012



Source: DR1960

Gonorrhea Incidence by Race/Ethnicity, Marion County, Franklin County (OH), and U.S., 2011-2012

Gonorrhea Incidence by Race/Ethnicity, Marion County, Franklin County (OH), and U.S. National: 2011/2012



Source: DR1960. Empty cells are due to unavailable data.

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AGES 35-64

MIDDLE-AGED ADULTS



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Executive Summary

The Marion County Public Health Department (MCPHD) has convened providers, consumers and public health experts for a Community Health Assessment (CHA).

The goals of the CHA are to:

- 1) Describe the community health status of Marion County, with comparison to urban peers and national standards (where applicable)
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health
- Prioritize the identified issues.

The Community Health Assessment reports on the health status of Marion County residents and is divided by age group. Each report is a product of a work group of topical experts, community-based partners and MCPHD staff.

This report is on Marion County adults ages 35-64. The three top priorities for this population were identified as:

High rates of violent deaths.

Suicide and homicide are among the Top 10 leading causes of death in this age group in Marion County. Nationally, suicides now eclipse motor vehicle accidents as a leading cause of death in this age group. Among 35- to 44-year-olds, homicide is responsible for 16 deaths per 100,000 persons; among 45- to 64-year-olds, it accounts for 13 deaths per 100,000.

High prevalence of physical disability.

Physical limitations can affect the ability to earn a living, care for family members, and care for oneself. These rates are associated with the increasing prevalence of obesity, diabetes, heart disease and asthma along with high rates of health-care utilization and increased rates of complications and hospitalizations. This age group is also least likely to have financial access to health care: 22% are uninsured, 50% have a general practitioner, and approximately 25% delayed medical or dental treatment or did not fill a prescription because of cost.

 A high rate of substance abuse, including alcohol, tobacco and prescription medication misuse. Substance abuse contributes to other leading causes of death, such as suicides and accidental poisoning. Racial and gender inequities appear in addictions to different substances as well as in the social outcomes of addiction.

Moderate priority was given to the following issues:

- High prevalence of depression and poor mental health function. One in four persons in the 35-64 age group reported a diagnosis of depression in the 2012 CHA survey. Because depression is a condition related to both substance abuse and poor control of other chronic diseases, it makes continuing management of these diseases more complex for both the practitioner and the patient. Some providers, such as Eskenazi Health and Midtown Mental Health, are increasing their depression screenings, as are certain workplaces, such as the Chamber of Commerce.
- Increasing rates of accidental deaths, including motor vehicle accidents, falls and burns.
 Accidental deaths comprise the leading cause of death for those under age 45, and the rates of accidental death are increasing. The work group believes that accidental deaths and impairments from injury result in a high cost to society but can be easily prevented by positive behavior changes.
- **Burden of caregiving**. Nationally, it is estimated that 90% of adults between the ages of 35 and 64 care for a child under the age of 18 and/or an adult over the age of 50. ² The health of these caregivers is at risk because of their increased susceptibility to depression, physical injury, social isolation and unattended medical issues. The burden of caregiving is projected to increase for this age group as a large portion of the population moves into older age and retires. However, the portion of the population ages 35 to 64 will be significantly smaller than that of care-needing older adults.

A Call to Action

The work group identified a high rate of substance abuse as a major chronic problem for the middle-aged population, many of whom may not get medical and mental health attention. Chronic addictions were linked to the high rate of violent deaths among males, especially suicides among whites and homicides among blacks. Both events have far-reaching effects in their communities. Similarly, chronic diseases and physical disabilities place a large segment of the population at risk for medical complications and dependence on community services. Secondary issues include a high prevalence of depression, accidental deaths and an increasing burden of caregiving for this population.

Current initiatives

- To address the problem of prescription drug abuse, health officials have joined Indiana Attorney General Greg Zoeller in launching the BitterPill campaign.
- On June 1, 2012, the City of Indianapolis updated the 2006 smoke-free ordinance to include most workplace settings, including hotels, motels, bars, taverns, nursing homes, health-care facilities, assisted living facilities, mental health facilities, bowling alleys and theaters.

Next Steps

This report, in conjunction with others from the CHA, will form the baseline for the development of Community Health Improvement Plan. This report is being disseminated among the MCPHD's programs and partners and other public health organizations. It will be posted on MCPHD's and other partners' websites. The Epidemiology Department will work with partners to monitor rates of birth, death, hospitalization and injury in order to track health changes within the population.

Community Health Assessment Goals & Process

When the Marion County Public Health Department convened a steering committee to start the process of assessing the health of Marion County residents, members agreed to create age group-specific reports, each to be advised by a work group of experts, advocates and other community members. Based on their knowledge as well as data from many sources, each work group identified three top priority issues for that age group. The steering committee then identified the highest priority issues for our community as a whole.

These findings will be used to develop a Community Health Improvement Plan, again with significant involvement by community members. The plan will describe how our community will address the high priority issues identified in the CHA.

This report is part of the CHA. It presents the most impactful health issues affecting people ages 35-64. These issues were identified and prioritized by a work group of community members, subject experts and health department staff (Appendix 1). The work group: 1) reviewed information about people in that age group, 2) discussed the issues that arose from that information,

considering their own expertise and experience, and 3) prioritized those issues.

Work group members prioritized issues based on: a) the number of people affected, b) the severity of the impact, c) the degree of any disparities or inequities, d) any trend of increasing impact, e) the availability of resources and proven solutions, f) the degree of secondary impacts, g) the potential for measurable change within five years, and h) community lack of awareness and resources (Appendix 6). Balancing these considerations was left to the judgment of the work group after a thorough discussion of the information available.

Social Determinants of Health

As defined by the World Health Organization, "The social determinants of health are the conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels, which are themselves influenced by policy choices. The social

Purpose of CHA

- Increase awareness of community health issues
- Describe social determinants & risk factors
- Compare Marion County to peer cities and nation
- Identify health disparities in county
- Prioritize community health needs
- Provide database for MCPHD's Community Health Improvement Plan
- Provide basis for planning programs& policies
- Engage coalitions and partners
- Improve health status of community

determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries."³

The MCPHD employs the Indiana County Health Rankings system⁴ to evaluate Marion County's overall health status in terms of key health indicators and social determinants of health, such as education, poverty and health care access (Appendix 2). The Health Rankings (Appendix 3) include social determinants such as education, employment levels, community poverty level and health care access, as well as key health indicators such as infant mortality and adult obesity rates.

County Health Rankings is a collaborative project developed by The Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute to measure health outcomes and health factors for counties in each of the 50 states.

The following tables provide an overview of the context in which Marion County citizens reside.⁵ Where possible, the tables compare Marion County indicators with national rates and the Healthy People 2020 objectives, a national benchmark. In addition, County Health Status indicators⁶ are included for five urban counties in the Midwest with populations between 500,000 and 1 million. The peer counties represented include Columbus, OH (Franklin Co.), Cincinnati, OH (Hamilton Co.), Louisville, KY (Jefferson Co.), Nashville, TN (Davidson Co.), and Milwaukee, WI (Milwaukee Co.).

Table 1: Social Determinants of Health, All-ages Indicators, Marion County Social Context (2006-2010)

Marion County	2010	2006-2010 change	% Peer county range
% adults 25+ who completed high school or GED (2010)	84.1%	(no 2006 data)	84.1- 89.5
Total poverty rate	20%	+ 4.9	15.7-19.9
Cost-burdened homeowners (>30% of income in housing)	26%	NA	24.0 - 28.8
Individuals with SSI ^a	4.7%	+ 1.7	-
Families with food stamps (SNAP)	14.1%	ı	NA
Person with disabilities (2010) ^b	12.7%	-	NA
Unemployment rate (2005-2010) ^c	10%	+ 5.0	8.1- 10.7
Median income (2010) ^d	\$39,343	-7.4% (Marion County)	-4.0 - 14.1
Persons with health coverage	83.3%	-0.8	81.8 - 87.7

Indyindicators.iupui.edu, pg 9 a ACS 2006-09 b ACS 2009-10 c IN Dept. of Workforce Development d ACS 2005-2009

Table 2: Health Outcomes: Marion County vs. U.S. Mortality Rates, All Ages (2010) and Healthy People 2020 Objectives

Deaths per 100,000	MC 2010	US 2010	HP2020
Unintentional injury deaths	36.2	38	36
Homicide rate	12.7	6.0	5.5
Motor vehicle fatality rate	12.8	11.4	12.4
Diabetes death rate	16.7	20.8	66.6
All cancers death rate	203.5	172.8	160.6
Lung cancer	69.6	47.6	45.5
Breast cancer	26.6	22.1	20.6

CDC WONDER 2007-08, NVSR, death rates by age and age-adjusted for 15 leading causes in 2010.

Marion County has twice the national and HP2020 rates of homicide and higher mortality rates for all cancers. However, Marion County meets or exceeds HP2020 goals for mortality rates for accidents, including motor vehicle accidents, and diabetes.

According to the annual Behavioral Risk Factor Surveillance Survey (BRFSS), Marion County adults exceed U.S. rates of smoking by 38%, diagnosed diabetes by 20%, and obesity by 15% (Table 3).

Table 3: Health Indicators: Marion County vs. U.S. All-age Adult Prevalence of Risk Factors

	MC 2010	US 2010	Rate comparison
Obesity (BMI>30)	32%	27.8%	1.15
Diabetes	11%	9.2%	1.20
Current smoker (adults 18+)	23.6%	17.1%	1.38
No leisure physical activity	24.4%	25.3%	.96
Binge drinking ⁷	15.5%	27.0%	.57

Indyindicators.iupui.edu, pg. 6 BRFSS data

The following chart provides an overview of Marion County indicators compared to those of similar Midwestern urban counties.⁸ As highlighted, Marion County performs comparatively worse in smoking prevalence, homicide rates, teen births, sexually transmitted infection rates, median household income and graduation rates (Table 4). These areas tend to lower Marion County's rankings with the five peer counties.

Table 4. Health Ranking Indicators: Marion County and Peer Counties, 2011

Indicator	Marion Co., IN	Peer Co. Range	
Adult smoking (%)	26	20–26	
Adult obesity (%)	30	27–32	
Adults not physically active (%)	27	25–28	
Diabetes (%)	10	9–12	
Adult STI (chlamydia) rate/100,000	860	97–860	
Motor vehicle accident death rate/100,000	12	9–16	
Homicide rate/100,000	14	9–14	
Adult binge drinking (%)	15	12–22	
Median household income	\$43,823	\$43,823–\$51,246	
Uninsured adults (%)	16	11–21	
Unemployed (%)	9.1	8.2-10.3	
9th grade cohort graduation (%)	60	60–75	
Children in poverty (age 0-18) (%)	24	20–27	
Teen birth rate (women ages 15-19)*	68	47–68	

Source: County Health Rankings website

Among the 92 counties in Indiana, Marion County ranks as high as 13th (on access to care) and as low as 92nd (on air quality). Of the 15 factors measured, Marion County's rank improved on seven, was unchanged on three, and declined on five, including diet and exercise and access and quality of care, between 2010 and 2011.

Understanding where the county encounters challenges and exceeds national objectives helps to frame the priorities for improving health in our population.

^{*} County health ranking data for teen birth rate is for 1,000 live births among women ages 15-19. At healthindicators.gov, birth rates for ages 15-19 for 2008 were: national, 41.4, Indiana, 43.7, and Marion County, 62.7.

Background

Population

From 2000 to 2010, Marion County's population grew by 5% to 903,393. The 35-64 age group (Table 5) constitutes the largest percentage of Marion County's residents, numbering 310,910, or 34% of total population.¹⁰ The population is slightly less diverse than the county as a whole: 72% white, 28% black, 5.7% Hispanic, and 0.3% Asian.

Table 5: Marion County Five-Year Cohorts, Ages 35 to 64, 2010

Age	Percentage	Number
35 to 39 years	17.8%	60,991
40 to 44 years	17.0%	57,980
45 to 49 years	18.7%	63,895
50 to 54 years	18.6%	63,509
55 to 59 years	15.7%	53,516
60 to 64 years	12.2%	41,825
		341,716

Source: Indiana Census, 2010¹¹

Unemployment

Of middle-aged adults who are in the civilian labor force, 10.3% were unemployed. From each 10-year cohort (35 to 44, 45 to 54, and 55 to 64), the percent unemployed declined by about 1 percentage point (Table 6). However, the labor force contribution of Marion County's 25-44 age group is expected to grow by only 0.2% over the next 30 years (2010-2040), while the 45-64 age group will decline by 1.7%. The Indiana School of Business Research Center projects only a net increase of 34,960 persons ages 25-64 in the labor force by 2040. ¹³

Table 6: Marion County Labor Force, Ages 16 and Older, American Community Survey, 2011

Marion County	Male		Female		Total	
35 to 64 years:	165,248		176,824		342,072	
Civilian, in labor force:	136,036	100.0%	129,342	100.0%	265,378	100.0%
Employed	121,652	89.4%	116,446	90.0%	238,098	89.7%
Unemployed	14,384	10.6%	12,896	10.0%	27,280	10.3%
35 to 44 years:	58,823		60,127		118,950	
Civilian, in labor force:	52,879	100.0%	48,091	100.0%	100,970	100.0%
Employed	47,484	89.8%	42,028	87.4%	89,512	88.7%
Unemployed	5,395	10.2%	6,063	12.6%	11,458	11.3%
45 to 54 years:	61,270		65,570		126,840	
Civilian, in labor force:	51,964	100.0%	49,856	100.0%	101,820	100.0%
Employed	45,858	88.2%	45,231	90.7%	91,089	89.5%
Unemployed	6,106	11.8%	4,625	9.3%	10,731	10.5%
55 to 59 years:	26,110		29,002		55,112	
Civilian, in labor force:	19,716	100.0%	20,294	100.0%	40,010	100.0%
Employed	17,848	90.5%	18,714	92.2%	36,562	91.4%
Unemployed	1,868	9.5%	1,580	7.8%	3,448	8.6%
60 and 61 years:	8,481		9,761		18,242	
Civilian, in labor force:	5,757	100.0%	5,156	100.0%	10,913	100.0%
Employed	5,148	89.4%	4,910	95.2%	10,058	92.2%
Unemployed	609	10.6%	246	4.8%	855	7.8%
62 to 64 years:	10,564		12,364		22,928	
Civilian, in labor force:	5,720	100.0%	5,945	100.0%	11,665	100.0%
Employed	5,314	92.9%	5,563	93.6%	10,877	93.2%
Unemployed	406	7.1%	382	6.4%	788	6.8%

Source: Table B23001: SEX BY AGE BY EMPLOYMENT STATUS FOR THE POPULATION 16 YEARS AND OVER 2009-2011, American Community Survey 3-Year Estimates, Marion County, Indiana

Health care coverage

Of persons ages 40 to 64 in Marion County, 16.5% were without health insurance in 2010. Among those with incomes at 138% of Federal Poverty Level (FPL), 37% were uninsured (Table 7).

Table 7: Marion County Persons in Poverty, With and Without Health Care Coverage, 2010

Persons in poverty, 40 to 64 years of age, Marion County (2010)							
Income	All persons (N)	Uninsured (N)	Uninsured %	Insured (N)	Insured %		
All incomes	280,109	46,307	16.5	233,802	83.5		
<= 138% of poverty	53,240	20,011	37.6	33,229	62.4		
<= 200% of poverty	83,307	28,803	34.6	54,504	65.4		

Source: SAHIE, County by Demographic and Income Characteristics, U.S. Census, 2010

High Priority Issues

The work group was tasked with identifying the major health issues affecting 35- to 64-year-olds in Marion County. The work group selected three issues as having the highest priority for community action. It did not rank order these issues.

High Priority Issue A: High Rate of Violent Death

Homicide is among the top 10 leading causes of death for those ages 35 to 64 in Marion County. It is the fifth leading cause of death among 35- to 44-year-olds, with 16 deaths per 100,000 persons, and the ninth leading cause of death among 45- to 64-year-olds, with 13 deaths per 100,000 persons (Table 8).

Table 8: Summary Table: Marion County Violent Deaths (2008-2012) Compared to U.S. Rates (and Rate Ratio) and HP2020 Objectives

Marion County age groups	MC homicide rate per 100,000 (# of deaths)	US rate (rate ratio)	HP2020 ¹⁴ Homicide (LHI) All adults	MC suicide rate per 100,000 (# of deaths)	US rate (rate ratio)	HP2020 ¹⁵ Suicide (LHI) All adults
35-44	16 (77)	6.0 (2.7 RR)		24 (113)	16 (1.5 RR)	
45-54	13 (45)	4.4 (2.95 RR)	5.5 per 100,000	26 (132)	19.6 (1.2 RR)	10.2 per 100,000
55-64	0			23 (79)	17 (1.35 RR)	
Total 35-64 violent deaths per year ¹⁶	122			324		
County firearm deaths 35-64 ¹⁷ (2008-2012)	113	NA		162	NA	
Firearm death rate per 100,000, ages 10+, City of Indianapolis, ¹⁸ number of deaths (2006-2007)	12.6 (198)	9.7 50 largest cities	4.2	7.4 (100)	4.7 50 largest cities	6.5
Injury related ED visits ¹⁹ 25-44 45-64 (2009-2011)	37.2 per 10,000 (980 visits) 19.6 per 10,000 (437 visits)	NA	NA			

Source: DRs 1998, 1937, 1953, and HP2020

Marion County's homicide rate for this population is approximately 2.5 to three times the U.S. rate²⁰ and three times the HP2020 Leading Health Indicator rate of 5.5 homicide deaths per 100,000 persons.

Marion County's suicide rates for this age group are similar to its homicide rates. Suicide ranks fourth among causes of death for those ages 35 to 44 (24 per 100,000) and 45 to 54 (26 per 100,000) and ninth among those ages 55 to 64 (23 per 100,000)²¹ (Table 9). All county suicide rates by cohort are higher than for their similarly aged U.S. counterparts. Suicide rates are nearly 2.5 times the HP 2010 target objective of 10.2 deaths per 100,000.²²

Over a five-year period from 2008 through 2012, Marion County had an annual average of 122 homicides and 324 suicides.

For the first time, suicides have overtaken motor vehicle accidents in number of deaths for this population nationwide.²³ Age-adjusted suicide rates are about twice the rates of death from homicide. From 1999 to 2010, the U.S. suicide rate for those ages 35 to 64 increased by 28.5%, from 13.7 to 17.6 per 100,000 persons.²⁴ Suicide rates are highest among those ages 45 to 64 (Figure 1).²⁵

In Marion County, men are three times more likely than women to die from homicide or suicide.

Among women, suicide rates increased with age, with the largest increase occurring among women ages 60 to 64. Possible reasons may include the recent economic downturn, the rise in intentional prescription opioid overdoses, and a cohort effect of the "Baby Boomer" generation, which saw unusually high suicide rates during the adolescent years.²⁶

Racial disparities are prevalent in both homicide and suicide rates. Among those ages 35 to 44, blacks are nearly 5.5 times more likely to be killed in a homicide than their white counterparts.²⁷ By comparison, whites are more likely to commit suicide than blacks. Suicide victims are most likely to be white, non-Hispanic males. Homicide victims are six times more likely to be black males than white males.²⁸

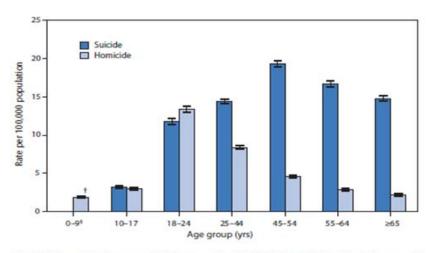
From 2006 through 2007, Indianapolis deaths from homicide by firearms numbered 12.6 per 100,000. ²⁹ In contrast, the U.S. rate for that period was 9.7 per 100,000 in major urban areas and 4.2 per 100,000 persons overall. As reported in a CDC Morbidity and Mortality Weekly Report (2011), Indianapolis had 30% higher rates for homicides and suicides involving firearms compared to the average of the 60 largest U.S cities, for ages 10 and older. ³⁰

In the national adult population, there are 25 attempted suicides for each suicide death.³¹ This indicates the high cost to both acute health care and mental health services related to this issue.

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Suicide and Homicide Rates,* by Age Group — United States, 2009



^{*} Per 100,000 population in age group. Suicides are coded as *U03, X60-X84, and Y87.0, and homicides are coded as *U01-*U02, X85-Y09, and Y87.1 according to the International Classification of Diseases, 10th Revision.

In 2009, the age-adjusted suicide rate for the total population (11.8 per 100,000 population) was approximately twice as high as the age-adjusted homicide rate (5.5). Persons aged 18–24 years had the highest rate of homicide in 2009, whereas persons aged 45-54 years had the highest rate of suicide. The suicide rate was higher than the homicide rate among those aged ≥25 years, and this difference increased with age. For persons aged 25-44 years, the rate of suicide was nearly twice the rate of homicide, whereas for those aged ≥65 years, the rate of suicide was nearly seven times the homicide rate.

Sources: National Vital Statistics System mortality data. Available at http://www.cdc.gov/nchs/deaths.htm.

US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy people 2020. Washington, DC: US Department of Health and Human Services; 2012. Available at http://www.healthypeople.gov.

Reported by: Kimberly Hurvitz, MHS, ifo7@cdc.gov, 301-458-4756; Deepthi Kandi.

Source: Suicide and Homicide Rates, by Age Group—U.S. 2009, MMWR July 20, 2012; 61(28)

^{† 95%} confidence interval.
§ Suicide data for persons aged 0–9 years are suppressed based on a child's inability to form and understand suicidal intent and consequences

Table 9: Leading Causes of Death: Mortality Rates by Age Group, Marion County (2008-2012) compared to U.S. (2010)

Rank	Ages 35-44	# deaths 35-44	Number of deaths in MC per 100,000 persons	Number of deaths in US per 100,000 persons (2010)	MC:US rate ratio
	Total from all causes	1,259	266	170.5	1.6
1	Accidents	205	43	36	1.2
2	Malignant neoplasms	193	41	28.8	1.4
3	Diseases of heart	179	38	25.8	1.5
4	Intentional self-harm (suicide)	113	24	16	1.5
5	Assault (homicide)	77	16	6.0	2.7
6	Human immunodeficiency virus (HIV) disease		12	4.6	2.6
7	Cerebrovascular diseases (stroke)		10	4.6	2.2
8	Chronic liver disease & cirrhosis		8	5.9	1.4
9	Diabetes mellitus		8	4.4	1.8
Rank	Ages 45-54	# deaths 45-54	Number of deaths in MC per 100,000 persons	Number of deaths in US per 100,000 persons (2010)	MC:US rate ratio
	Total from all causes	3,237	646	407.1	1.6
1	Malignant neoplasms	798	159	111.6	1.4
2	Diseases of heart	624	125	81.6	1.5
3	Accidents	321	64	43.7	1.45
4	Intentional self-harm (suicide)	132	26	19.6	1.22
5	Chronic liver disease & cirrhosis	130	26	19.2	1.35
6	Chronic lower respiratory diseases		24	9.9	2.42
7	Diabetes mellitus		22	12.5	1.76
8	Cerebrovascular diseases (stroke)		21	13.1	1.61
9	Assault (homicide)		13	4.4	2.95
10	Human immunodeficiency virus (HIV) disease		12	6.9	1 .72
Rank	Ages 55-64	# deaths 55-64	MC rate /100,000	US 2010 Rate	MC:US Rate ratio
	Total from all causes	4,993	1,344	851.9	1.57
1	Malignant neoplasms	1,680	452	300.1	1.5
2	Diseases of heart	1,048	282	186.6	1.5
3	Chronic lower respiratory diseases	324	87	39.0	2.3
4	Cerebrovascular diseases (stroke)	188	51	29.3	1.76
5	Diabetes mellitus	171	46	32	1.44
6	Accidents		43	38.4	1.13
7	Chronic liver disease & cirrhosis		40	26.8	1.48
8	Nephritis, nephrotic syndrome & nephrosis		29	13.9	1.5
9	Intentional self-harm (suicide)		23	17.5	1.35
10	Septicemia		22	12.6	1.7

Source: DR1937, Marion County death certificates

Detailed Marion County Mortality Risks³²

All age groups have total mortality rates that exceed U.S. rates by 60% (Table 9).

Ages 35-44 and 45-54:

Accidents, cancer, heart disease, and suicide are the four leading causes of death. For ages 35 to 44, assault and HIV/AIDS comprise the fifth and sixth leading causes of death, while liver disease and lower respiratory diseases account for the fifth and sixth leading causes of death for those ages 45 to 54.

Among 35- to 44-year-olds, compared to whites, blacks had

- Two- to threefold greater rates for HIV/AIDS, stroke and diabetes
- Nearly a sixfold greater risk for homicide
- Lesser rates of accidental death and suicide.

By gender, men had twice the rate of heart disease and accidental deaths than women in both age groups. They had three times the rate of assaults (among those ages 35 to 44) and nearly three times the risk of suicide than similarly aged women.

Ages 55 to 64:

This age group had a much higher overall death rate than the others, driven principally by three leading causes: cancers, heart disease and lower respiratory disease. Stroke and diabetes were also among the top five causes of death. Similarly, they had twice the national rate of lower respiratory disease and exceeded national rates for all other causes by 13% to 75%.

Among this age group, blacks were twice as likely to die of kidney disease, stroke and diabetes than whites and also more likely to die from accidents and heart disease. Men had roughly twice the rate of heart disease and accidental deaths than women and 50% to 60% more cancer deaths.

Perceived Safety and Mental Health: Community Health Survey, 2012

The Community Health Assessment survey gives some insight to the unsettled lives of Marion County's middle-aged population. Researchers surveyed 5,000 residents over age 18 by phone in 2012. This age group (n = 2,754) reported perceptions about neighborhood safety and assets. Compared to other age groups, 35- to 64-year-olds were less likely to strongly affirm the statement that they "felt safe" in their neighborhoods or that "neighbors are willing to help" (Table 10).

Nearly 12% of this age group, the largest proportion compared to other ages, did not normally use a private vehicle for transportation — perhaps adding to their sense of vulnerability. This

was true even though their neighborhoods were no less likely than others to have sidewalks and lighting.

Table 10: Neighborhood Characteristics: CHA survey 2012, 35-64 Respondents

Neighborhood safety (% strongly agree)	% age 35-64 respondents
I feel safe in neighborhood	57%
Neighbors are willing to help	42%
Many vacant, rundown properties in neighborhood	14%
Usual mode of travel	
Walking	5.0%
Biking	1.3%
Public transit	5.3%
Private vehicle	88%
Neighborhood connectivity	
Has sidewalks	75%
Sidewalks lighted at night	74%
Connect to major intersection/streets	73%
Within a 10-minute walk from home:	
Community center/library	31%
Full-service grocery	51%
Park, greenway or playground	64%
Bus stop	75%

Source: DR1983 Marion County CHA survey, respondents 35-64

High Priority Issue B: High Prevalence of Physical Disability

Physical limitations affect one's ability to earn a living and to care for one's family members and oneself. Physical disability is associated with increased prevalence of obesity, diabetes, heart disease and asthma as well as high rates of health care use and increased rates of complications and hospitalizations.

Disability Status

As of 2011, 88.1% of Marion County adults ages 18 to 64 were in the labor force and employed. An additional 12.2% were disabled (Table 11). Less than 6% of those employed were disabled (5.9%), but twice as many of the unemployed were disabled (12.4%), as were 32.4% of those not in the labor force.

About 11% of Marion County adults ages 18 to 64 (over 65,000 persons) reported one or more functional limitations in the American Community Survey.³³ The most prevalent limitation was an ambulatory difficulty (6%) followed by cognitive limitations (4.7%) and problems living independently (4.1%).

Table 11: Summary Table: Disabilities and Limitations in Ages 18-64, Marion County

Marion County age group 18-64 (U.S. Census 2010 ³⁴)	Number	% of 18-64 population
Disabled, but employed	23,452	
Disabled, unemployed	6,666	
Disabled, not in workforce	41,290	
	71,408	12.2%
Reporting limitations, ages 18-64 (ACS, 2012 ³⁵)		
Any limitation	65,406	11.4%
Hearing difficulty	11,830	2.1%
Vision difficulty	11,514	2.0%
Cognitive difficulty	26,961	4.7%
Ambulatory difficulty	34,455	6.0%
Self-care difficulty	12,260	2.1%
Independent living difficulty	23,657	4.1%
Requires special medical equipment (CHA Survey 2012)		14% (ages 35-64)
Limited in activities because of physical, mental or emotional problems (BRFSS, 2011)		23.6% (ages 35-64)
One or more chronic diseases diagnosed (CHA Survey 2012)		64% (ages 35-64)

Sources: listed above

In 2011, over 28,000 persons were approved for Supplemental Security Income (SSI) for total disability under the Social Security Act. They received a collective \$30.1 million in benefits per year, or \$1,075 per month per recipient. In Indiana, disability recipients accounted for 16% of all SSI recipients.³⁶ The impact of disability among county adults both in and out of the labor force is seen in Table 12.

Table 12: Persons in the Workforce by Disability: Marion County Adults Ages 18-64, 2011

Marion County (2011) Population 18-64 years	580,583	
In the labor force:	453,004	
Employed:	399,113	88.1 % of labor force
With a disability	23,452	5.9% of employed
No disability	375,661	
Unemployed:	53,891	11.9%
With a disability	6,666	12.4% of unemployed
No disability	47,225	
Not in labor force:	127,579	
With a disability	41,290	32.4 % of those not in labor force
No disability	86,289	

Source: DR1979 2011 American Community Survey 1-Year Estimate, Table C18120

Other Chronic Health Conditions and Access to Care

In the 2012 Community Health Assessment survey, respondents checked health conditions with which they had ever been diagnosed and reported their access to health insurance and medical care. About 1 in 4 had been diagnosed with one condition, and 37% had been diagnosed with two or more conditions (Table 13).

Table 13: CHA Survey 35-64 Respondents: Currently Diagnosed Conditions, 2012

Ever been diagnosed with [chronic condition reported]	% ages 35-64 reporting
Heart attack, angina, or coronary heart disease	7.6
Current asthma	11
Depression or dysthymia	25
Diabetes or high blood sugar	18
Hypertension/high blood pressure	35
High blood cholesterol	29
One medical condition (above list)	27
Two or more medical conditions	37

Source: DR1983 Marion County CHA survey, respondents age 35-64

Having multiple comorbidities makes chronic disease management more complex. It also is challenging to monitor levels of medications and to avoid potential drug interactions and adverse side effects.

However, 22% of this age group does not have health care coverage, and 30% had no usual source of medical care. Of those who did have a usual source of medical care, nearly all felt respected by their provider (Table 14). More than 25% did not get timely care (delayed treatment or did not fill a prescription) because of cost.

One in five had at least occasional health literacy problems. This implies that medication errors may occur in complex poly-pharmacy care regimens where 37% are managing two or more chronic conditions. One in three also reported their health status to be "fair" or "poor," and 1 in 7 needed special medical equipment.³⁷

Table 14: CHA Survey Respondents Age 35-64: Health Care Access, 2012

Indicator of health care access	% age 35-64 reporting
Have health care coverage	78
Have one usual health care provider	70
Feels respected by health care provider	96
Needs help reading medical instructions (occasionally or more often)	22
Did not get health care due to cost, past 12 months	25
Did not fill prescription due to cost, past 12 months	28
Saw dentist due to pain, past 12 months	24

Source: DR1983 Marion County CHA survey, respondents age 35-64

Other Health Risks

In addition to the burden of chronic disease, middle-aged county residents have a high risk profile for further complications and disease events, according to the 2012 CHA survey. About one-third are current smokers, 37.8% are obese or morbidly obese, and 29% get no leisure-time physical activity (Table 15). More positively, over half have some form of workplace wellness program.

Table 15. CHA 2012 Survey Respondents 35-64, Health Risk Indicators, 2012

Preventive health indicator	% 35-64 reporting:
Current smoker	32
Tried to quit at least once, past year	49
No physical activity (outside work), past month	29
Work activity is usually sitting/standing	57
Non-work related TV or other screen hours/day (average hours/day)	3.9 hrs.
Workplace has wellness program:	53
Supervisor strongly supports your participation	58
Overweight	34
Obese	30
Morbidly obese	7.8

Source: DR1983 Marion County CHA survey, respondents age 35-64

In addition, 7.6% of CHA respondents ages 35-64 reported that they were restricted every day in activities because of physical, mental or emotional problems, and 14% required special medical equipment at home (Table 16). One person in three reported their health status to be "fair to very poor."

Table 16: CHA Survey Respondents Ages 35-64: Poor Mental or Physical Health Days, 2012

Health function indicators	Mean days in past month	% reporting every day of past month
Poor physical health	5.0 days	8.5
Poor mental health	5.0	7.4
Restricted activity due to poor health	5.8	7.6
Health status is fair or poor		32.7
Needs special medical equipment		14

Source: DR1983 Marion County CHA survey, respondents age 35-64

The Behavioral Risk Factor Surveillance Survey (BRFSS) is conducted annually through phone interviews with adults in Marion County and measures health risk behaviors, health habits and the prevalence of common chronic diseases. In 2010, Marion County adults ages 45 to 64 reported chronic diseases risk factors more frequently than the national average (Table 17). Current smoking rates in Marion County were 9.1 percentage points, or about 67% higher, than U.S. rates.

Table 17: BRFSS Respondents: Marion County and U.S., Ages 45-64

Ages 45-64: BRFSS risk factors and chronic disease prevalence: Ever diagnosed with (% reporting)	MC 2008-2010 (%)	US 2010 (%)
Current asthma	10.2	8.9
Angina or coronary heart disease	5.9	4.8
Stroke	3.8	2.9
Heart attack	5.9	4.4
Diabetes (excluding pregnancy)	14.6	12.2
Chronic disease risk factors		
Overweight (25 <= BMI < 30)	38.5	38.7
Obese (BMI >= 30)	32.3	31.8
Exercise in past 30 days	71.8	74.5
Cholesterol checked, told it was high (2009) ³⁸	43.4	45.1
Consumed fruit/vegetables five or more times per day (2009) ³⁹	21.0	23.9
Current smokers	27.3	18.2
Quit smoking one day or more in the past year	59.7	55.5
Told by care provider they have high blood pressure (2009) ⁴⁰	41.0	37.2
Health care access		
Any health care coverage	85.0	86.7
Had one personal doctor or health care provider	81.1	87.4
Visited a dentist, dental hygienist or dental clinic within the past year	70.7	72

Source: DR1939

High Priority Issue C: High Rates of Substance Abuse

Substance abuse or dependence affects 7.3% of Hoosiers over age 12; of this population, 92% needed, but did not receive, treatment. Among Hoosiers over age 12, about half drank alcohol and nearly a quarter admitted to binge drinking in the previous month. Further, one-third used tobacco products, and 8.4% admitted to using an illicit drug, primarily marijuana or non-prescribed prescription drugs.⁴¹

In the 2012 CHA survey, 4% of respondents admitted that they had been or currently were addicted to prescription medication. Substance abuse contributes to leading causes of death, such as suicide and accidental poisoning, and impacts multiple health outcomes (Table 18).

Table 18: Summary Table: Substance Abuse Health Outcomes, Marion County and Indiana, All age groups

Health outcome	Marion County	Indiana
Alcohol-induced cause of death (age-adjusted mortality rate), 2006	7.6 per 100,000 population (66 deaths)	5.0 per 100,000 population
HIV/AIDS acquired as a result of injection drug use, 2006	6.7% of Marion County HIV/AIDS cases	8.4% of Indiana HIV/AIDS cases
Hepatitis B and C, age-adjusted mortality rate, 2006	3.3 per 100,000 population	1.4 per 100,000 population
Motor vehicle accidents: alcohol-related collisions	1.3 per 1,000 population	1.5 per 1,000 population
Suicides and homicides, ages 35-64 attributable to alcohol (DR1936)	Of 105 homicides and 299 suicides, 49 homicides and 69 suicides were alcohol-attributable.	47% of homicides and 23% of suicides were alcoholattributable. (CDC)
Drug overdose (OD) deaths (2002-2006)	433 OD deaths (all in Marion County)	Increased from 281 in 2002 to 728 in 2006.
Tobacco-attributable causes of death in those age 35+	Estimated 1,395 Marion County deaths among those age 35+	308.9 tobacco-attributable deaths per 100,000 population

Source: Mental Health and Substance Abuse Needs Assessment for Marion County, 2010 Center for Health Policy (10-H03).

Indiana residents in treatment programs report using the same substances as those in treatment programs nationally, exhibiting slightly higher tobacco dependence treatment (33% vs. 29.6%) (Table 19). The age and gender profile of Marion County residents in treatment for substance abuse parallels that of the U.S. population as a whole. However, the county has a higher proportion of minorities in drug abuse treatment than the nation (38% vs. 21%) (Table 20). Racial and gender inequities appear in addiction to different substances as well as the social outcomes of addiction.

In both Marion County and the U.S., half of all individuals seeking treatment list alcohol as the primary drug of concern. At least half of those with alcohol dependency are also addicted to at least one other substance upon admission to treatment.

Table 19: Indiana and U.S. Substance Abuse, Ages 12 and Older: National Survey on Drug Use and Health, 2006-2007

Substance	Indiana residents age 12+ who have used substance in past month % (number)	U.S. residents age 12+ who have used substance in past month % (number)
Alcohol	50.1% (2.6 million)	50.9% (125 million)
Tobacco	33% (1.74 million)	29.6% (72.9 million)
Illicit drugs	8.4% (437,000)	8.3% (20.4 million)

Source: http://wwwdasis.samhsa.gov/webt/tedsweb/tab year.choose year web table?t state=US

The proportion of Marion County residents in treatment for marijuana and cocaine is nearly three times that of the U.S. and 70% greater for opiates (Table 21). Comparatively, the U.S. as a whole has a greater proportion of individuals in treatment for heroin addiction. Opiate addiction, specifically in the "other opiates" category, may reflect the trend of increased pain medication abuse. Work group members expected a reversion to greater heroin addiction, as those addicted to pain medications are facing increasing barriers to obtaining these drugs.

Table 20: Characteristics of Substance Abusers on Admission to Treatment, Marion County and U.S., 2008

Demographic	Marion County (%)	U.S. (%)
% Male	60.9%	67.6%
Age 35-44	24.1%	24.5% (36-45 years)
Age 45-54	16.8%	16.9% (46-55 years)
Age 55+	4.7%	4.1% (56 + years)
White	57.9%	63.2%
Black	37.9%	21.3%
Other	4.2%	15.5%

Source: TEDS 2008

Table 21: Substance Abuse Treatment Admissions, by Primary Substance of Abuse: Marion County and U.S.

Substance	Marion Co. (2008)	U.S. (2008)	Marion Co. to U.S. Ratio
Alcohol	54.1%	41.4%	1.3
Marijuana	48.2%	17.3%	2.8
Cocaine	33.4%	11.6%	2.9
Heroin	8.1%	13.7%	0.6
Other opioids	10.4%	6.0%	1.7
Hallucinogens	0.7%	0.1%	
PCP	0.2%	0.2%	
Amphetamines	2.4%	6.3%	0.4

Source: TEDS, 2008

The national emergency department monitoring project "DAWN" estimates that over 1.24 million ED visits involved nonmedical use of prescription medicines, over-the-counter drugs, or other types of pharmaceuticals in 2011.⁴² This represents about one-fourth (24.6%) of all drug-related ED visits and about half (50.5%) of ED visits for drug abuse or misuse.⁴³

Pain relievers were the most common drugs in medical emergencies associated with nonmedical use of pharmaceuticals (46%) while narcotic pain relievers were the second most common (29%). Between 2004 and 2011, ED visits related to nonmedical use of pharmaceuticals⁴⁴ increased 132%, rising from about a half million visits to about 1.25 million

visits. Opiate/opioid involvement increased by 183%, with 315,000 more visits involving opiates/opioids in 2011 than in 2004.

Among persons ages 21 or older, the rate for all drug-related ED visits is 903.4 visits per 100,000 (2011), of which one-third involve pharmaceuticals only; another 10% involve alcohol and pharmaceuticals (Figure 2).

While visits involving illicit drugs alone have not risen, ED visits related to the use of pharmaceuticals with no other drug involvement rose substantially (148%), as did the use of pharmaceuticals with illicit drugs (137%), pharmaceuticals with alcohol (84%), and pharmaceuticals combined with both illicit drugs and alcohol (93%). These increases reflect almost 500,000 more ED visits related to pharmaceuticals alone in 2011 compared with 2004. The highest rate of alcohol involvement was found for those ages 21 to 24 (393.9 visits per 100,000), although alcohol involvement was consistently near or above 300 visits per 100,000 population for all the age groups between 21 and 54.

In use of illicit drugs, 45- to 54-year-olds had the highest rate for cocaine (344.6 visits per 100,000 population ages 45 to 54).

800 800 734 734 684 Rate of ED visits per 100,000 population Rate of ED visits per 100,000 population 700 700 600 569 600 531 485 500 500 399 400 400 400 329 301 300 300 228 200 200 100 100 18 0 6-11

Figure 2. National rates of ED visits per 100,000 population involving nonmedical use of pharmaceuticals, by age and sex, 2011

Source: SAMHSA, 2011 DAWN report⁴⁵

18-20 21-24 25-29 30-34

Compared to peer counties in the Midwest, Marion County ranks first in number of liquor stores per 100,000 persons. However, the number of licensed vendors per capita is no higher than the balance of the state. In terms of binge drinking patterns, 15.5% of Marion County adults over age 18 practiced binge drinking in the past month, placing the county mid-range in the peer county comparisons (Table 22).

Male

Female

In terms of outcomes of alcohol use, over half of homicides are attributed to alcohol use (Table 18). Marion County ranks higher than the U.S. in homicides and is ranked third in peer county all-homicide and firearms-related homicides (Table 22).

Table 22: Public Safety Indicators, Marion County and Other Peer Urban Counties

Indicator	Marion County (peer county ranking)	[Peer county range] for Indiana
Liquor stores per 100,000 population (2011)	13.8 (1st ranked)	[3.6- 13.8]
Liquor licenses per 1,000 adults age 18+46	2.2	Indiana, 2.1
Liquor licenses per 1,000, ages 18-20	56.1	Indiana, 56.5
% adults with 5+ drinks (all ages)(2010)	15.5 (5th ranked)	[10.6-18.8]
Homicide deaths per 100,000 (2009) (age adjusted, all ages)	11.4 (3rd ranked)	[2.5-17.0]
Homicide by firearm per 100,000 (2009) (all ages)	8.7 (3rd ranked)	[0 to 13.1]

Indyindicators.iupui edu http://indyindicators.iupui.edu/keyindicators.aspx , Indiana Prevention Center, ATC 2011

Moderate Priority Issues

The following issues also have important impacts on the health of our county's 35- to 64-year-olds.

Accidental Death and Injury

From 2008 to 2012, accidents were the leading cause of death for persons ages 35 to 44, the No. 3 cause of death for ages 45-54 and No. 6 for ages 55-64 (Appendix 4). The accidental death rate in Marion County was nearly 20% higher than the accidental death rate nationally. Among ages 35 to 54, men's risk for accidental death was twice that of women.⁴⁷

Annual mortality rates were averaged in Marion County for two five-year periods: ⁴⁸ 1998 to 2002 and 2008 to 2012. From years 1998 to 2002 to 2008 to 2012, averaged mortality rates declined by 25% to 30% for each of the three age groups (ages 35 to 44, 45 to 54, and 55 to 64), and the rank order for leading causes of death did not change for any of the groups. Accidents, cancer and heart disease accounted for the majority of deaths during both time periods.

However, from the first period to the second, accidental death rates increased for all age groups:

- 35 to 44: 48% (29 to 43 deaths per 100,000)
- 45 to 54: 50% (32 to 64 per 100,000)
- 55 to 64: 10% (39 to 43 per 100,000).

This trend paralleled the U.S. trend. Among persons ages 35 to 44 in the U.S., unintentional injuries, poisonings (including unintentional drug poisonings), motor vehicle crashes and deaths from firearms all increased from 1999 to 2005. Similarly, injuries and unintentional poisonings increased in ages 45-54 and were two of the top three causes of death nationally.⁴⁹

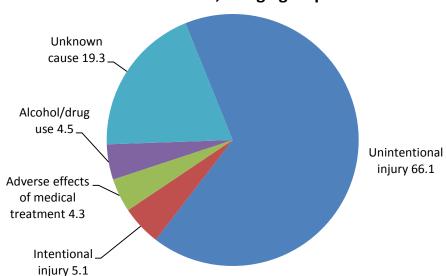
For the three age groups (35 to 44, 45 to 54, and 55 to 64) from 2009 to 2011, the three leading primary diagnoses for all emergency department (ED) visits⁵⁰ in Marion County were:

- Accidents (17% to 20%)
- Musculoskeletal diseases (10% to 13%)
- Respiratory diseases (5% to 10%).

Ages 35-44 and 45-54 had similar rates of ED visits for unintentional injuries at 4,073 per 10,000 and 4,717 per 10,000, respectively, while the rate of ED visits for unintentional injuries in ages 55-64 was roughly 40% less.

In the U.S., 66% of ED visits for all ages are for unintentional injuries, 5% are for intentional injuries (assault/self-inflicted), and 4.5% are alcohol- and drug use-related (Figure 3).

Figure 3: U.S. ED Injury-related Visit Percentages, U.S. Population, 200751



U.S. 2007 ED visits, all age groups

Source: NHSR 2010.

Over three years from 2009 through 2011, Marion County residents ages 25 to 44 averaged 149,000 injury-related ED visits⁵² per year (5,700 per 10,000 persons), while residents ages 45 to 64 averaged 83,700 visits per year (3,700 per 10,000 persons).

Roughly 25% of injury-related visits were for sprains and strains, 15% for bruises/contusions, and 12% for combined open wounds to the upper body and head – all of which accounted for half of all injury-related causes (Table 23). Injuries coded as "external cause" (E-codes) include:

- Accidental falls (3.7%, or 8,680 visits)
- Poisonings due to medications and other drug therapies (2.3%, or 5,364 visits)
- Motor vehicle traffic accidents (2.1%, or 4,910 visits)
- Burns (1.6%, or 3,636 visits).

Table 23: Marion County Injury-Related and Poisoning-Related ED Visits, Ages 25-64 (2009-2011), by ICD9 Injury and Poisoning Primary Diagnosis and External Cause (E-Codes)

25-44 years	Number of visits	% injury visits	Rate per 10,000
Total (all injury and poisoning causes)	149,088		5,659.0
Sprains and strains of joints and adjacent muscles	40,557	27.2%	1,539.4
Contusion with intact skin surface	22,008	14.8%	835.4
Open wound of upper limb	11,270	7.6%	427.8
Open wound of head, neck, and trunk	8,615	5.8%	327.0
Superficial injury	6,960	4.7%	264.2
Traumatic complications and unspecified injuries	6,953	4.7%	263.9
Fracture of upper limb	6,045	4.1%	229.5
(E) Accidental falls	5,147	3.5%	195.4
(E) Other accidents	4,968	3.3%	188.6
Fracture of lower limb	4,327	2.9%	164.2
Other/unspecified effects of external causes	4,075	2.7%	154.7
Poisoning by drugs, medicinals and biological substances	3,572	2.4%	135.6
(E) Motor vehicle traffic accidents	3,342	2.2%	126.8
Open wound of lower limb	3,300	2.2%	125.3
Burns	2,438	1.6%	92.6
Complications of surgical and medical care	2,187	1.5%	83.0
Foreign body entering through body orifice	1,692	1.1%	64.2
Dislocation	1,677	1.1%	63.6
Intracranial injury, excluding skull fracture	1,630	1.1%	61.9
Fracture of skull	1,580	1.1%	60.0
Toxic effects of substances, nonmedicinal	1,295	0.9%	49.2
(E) Drugs, medicinal and biological substances causing adverse effects in therapeutic use	1,017	0.7%	38.6
Fracture of neck and trunk	1,005	0.7%	38.2
(E) Homicide	980	0.7%	37.2
(E) Surgical and medical procedures as the cause of abnormal reaction of patient or later complication	322	0.2%	12.2

45-64 years	Number of visits	Percent of poisoning and injury visits	Rate per 10,000
Total (all injury and poisoning causes)	83,655		3,755.6
Sprains and strains of joints and adjacent muscles	18,478	22.1%	829.6
Contusion with intact skin surface	12,138	14.5%	544.9
Open wound of upper limb	5,572	6.7%	250.1
Open wound of head, neck, and trunk	4,628	5.5%	207.8
Fracture of upper limb	4,437	5.3%	199.2
Traumatic complications and unspecified injuries	4,178	5.0%	187.6
Superficial injury	3,908	4.7%	175.5
Fracture of lower limb	3,875	4.6%	174.0
(E) Accidental falls	3,533	4.2%	158.6
Other and unspecified effects of external causes	2,827	3.4%	126.9
Complications of surgical and medical care	2,735	3.3%	122.8
(E) Other accidents	2,248	2.7%	100.9
Open wound of lower limb	1,922	2.3%	86.3
Poisoning by drugs, medicinals and biological substances	1,792	2.1%	80.4
(E) Motor vehicle traffic accidents	1,568	1.9%	70.4
Fracture of neck and trunk	1,412	1.7%	63.4
Burns	1,198	1.4%	53.8
Foreign body entering through body orifice	1,067	1.3%	47.9
Intracranial injury, excluding skull fracture	935	1.1%	42.0
Dislocation	880	1.1%	39.5
Toxic effects of substances, nonmedicinal	880	1.1%	39.5
(E) Drugs, medicinal and biological substances causing adverse effects in therapeutic use	803	1.0%	36.1
Fracture of skull	752	0.9%	33.8
(E) Homicide	437	0.5%	19.6
(E) Surgical and medical procedures as the cause of abnormal reaction of patient or later complication Source: DR1953	317	0.4%	14.2

Source: DR1953

Depression and Poor Mental Health Function

One in four persons in the 35-64 age group reported a diagnosis of depression in the 2012 CHA survey. 53

Because depression is a condition related to both substance abuse and poor control of other chronic diseases, it makes continuing management of these diseases more complex for both the practitioner and the patient. Some providers, such as Eskenazi Health and Midtown Mental Health, are increasing their depression screenings, as are certain workplaces, such as the Chamber of Commerce. The Affordable Care Act encourages pro-active screening and treatment referral to this extent.

In the most recent BRFSS (2011), significantly higher percentages of Marion County residents ages 25 to 64 reported 14 or more days of bad mental health and bad physical health within the past month vs. national aggregates (Table 24). They were three times more likely than U.S. respondents to report frequent poor physical and mental health days in the previous month.

Table 24. Marion County and U.S., BRFSS 2011

	Ages 25-44		Ages 45-64	
	MC%	U.S.%	MC%	U.S.%
Adults reporting fair- poor general health	12.7	10.9	21.8	19.4
Get social and emotional support: always/usually	76.2	81.4	75.0	80.2
Frequent bad mental health, 14+ days/past month	39.8	11.2	36.2	12.0
Frequent bad physical health, 14+ days/past month	36.5	7.6	39.0	13.8
Activity limitation due to health problem	16.1	13.8	25.9	25.7

Source: DR1939 MC BRFSS survey

In the 2011 BRFSS survey, 20.8% of all Indiana adults reported a current diagnosis of depressive disorder, which was significantly higher than the national rate of 16.8%. Nearly 1 in 10 Indiana adults ages 50 and older have been told by a health professional that they currently have depression. Women were more likely to report a depression diagnosis than men (26% vs. 15%, respectively). Depression is slightly more prevalent in those ages 50-64 (10.4%) than in those over age 65 (6.2%).⁵⁴

Indiana's depression rates appear to reflect those of the nation as a whole. However, Indiana's older cohort (ages 50 and older) reports a higher lifetime incidence of depression (Table 25). In the CHA survey (2012), 25% of respondents ages 35 to 64 reported that they had "ever been told by a health professional" that they had depression or dysthymia.

Table 25: Indiana and U.S. (2006): Mental Indicators for Persons Over Age 50

Indicator ⁵⁵	Age	Indiana	U.S.	Worse than U.S.?
	50+	9.4 (95% CI) ⁵⁶ (8.3-10.6)	9.8 (95% CI) (9.5-10.1)	No
Inadequate social and emotional support (%)(2006)	50-64	8.8 (7.3-10.5)	8.1 (7.7-8.5)	No
34pport (70)(2000)	65+	10.3 (8.7-12.2)	12.2 (11.8-12.7)	No
	50+	6.1 (5.3-7.1)	4.9 (4.7-5.1)	Yes 👚
Lack of life satisfaction (%) (2006)	50-64	7.7 (6.4-9.2)	5.8 (5.5-6.1)	Yes 👚
,	65+	4.0 (3.1-5.2)	3.5 (3.3-3.8)	No
	50+	8.7 (7.7-9.8)	9.2 (8.9-9.5)	No
Frequent mental distress (%) (2006)	50-64	10.6 (9.1-12.3)	11.1 (11.1-11.6)	No
	65+	6.1 (4.9-7.5)	6.5 (6.5-6.9)	No
Currently	50+	8.9 (7.8-10.2)	7.7 (7.3-8.0)	No
diagnosed as depressed (%)	50-64	10.7 (9.1-12.6)	9.4 (8.9-9.9)	No
(2006)	65+	6.2 (4.9-7.9)	5.0 (4.6-5.4)	No
Lifetime diagnosis of depression (%) (2006)	50+	19.1 (17.7-20.7)	15.7 (15.3-16.1)	Yes 👉
	50-64	23.8 (21.6-26.1)	19.3 (18.7-19.9)	Yes 🛖
	65+	12.7 (11.0-14.6)	10.5 (10.1-11.0)	No

Source: Adapted from "The State of Mental Health and Aging in America" http://apps.nccd.cdc.gov/MAHA/CompareStates.aspx?State=442#compare results

Symptoms of depression may include cognitive dysfunction, fragmented sleep and self-care difficulties, which may resolve through therapy and/or anti-depressants. Control of chronic diseases through timely and consistent management of medication, self-care activities and positive behavioral changes is considered key to maintaining high quality of life and to reducing the chance of developing depression.

Burden of Caregiving

Nationally, it is estimated that 90% of adults between the ages of 35 and 64 care for a child under the age of 18 and/or an adult over the age of 50.⁵⁷ The health of these caregivers is at risk because of their increased susceptibility to depression, physical injury, social isolation and unattended medical issues. The burden of caregiving is projected to increase for this age group as a large portion of the population moves into older age and retires. However, because of its smaller birth rate, the portion of the population ages 35 to 64 will be significantly smaller than that of care-needing older adults.⁵⁸

The middle-aged population faces other burdens as well, making caregiving even more difficult. According to the Marion County CHA survey (2012), approximately 1 in 5 household incomes reported by those ages 35 to 64 met at least 100% of the federal poverty level. This financial barrier is reflected in the significant portion (25% to 28%) of respondents who reported an inability to afford all prescriptions or medical visits as needed. Health insurance is typically linked to employment, and more than 25% of respondents reported that they were not actively involved in the workforce (Table 26).

Table 26: Work Status Category: CHA 2012 Respondents Ages 35-64

Employed for wage/self-employed	62%	[58.9 - 64.7] ^a
Out of work	11%	[8.7 - 12.4]
Unable to work	13%	[11.0 - 14.5]
Homemaker/student	5.9%	[4.7 - 7.1]
Retired	9.0%	[6.8 - 11.3]

Source: DR1983 Marion County CHA survey, respondents ages 35-64 a. 95% confidence interval

The following describes the household composition of respondents ages 35 to 64:

- 14% do not speak English as the primary language within the home.
- 17% live alone, 28% live in two-person households, and 54.8% live in households with two or more other members.
- 42% of the respondent households headed by 35- to 64-year-olds (n = 871) include children between the ages of 5 and 17.

Approximately a quarter of the randomly selected children cared for by these respondents had a listed chronic condition, presenting above-average caregiving responsibilities. The most common conditions were asthma (20%) and ADHD/ADD (16%) (Table 28).

Table 27: Households Headed by 35- to 64-Year-Olds: Randomly Selected Child 5-17, with a Reported Chronic Condition (CHA 2012)

Household child 5-17 with chronic condition(s)	% of age 35-64 respondents
Asthma	20%
ADD or ADHD	16%
Depression or anxiety	9.4%
Hypertension or diabetes	>2%
Other diagnosed medical condition	15%
One of the above conditions	26%
Two or more conditions	16%

Source: DR1983 Marion County CHA survey, respondents age 35-64

In terms of food security and access, 29% of families reported that they occasionally or frequently faced food security issues, and 21% of families reported that they had used food stamps (SNAP) in the past year. Approximately half of all families reported a full-service grocery store within a 10-minute walk from home (Table 28).

Table 28: Food Access and Security: CHA Survey 2012, Age 35-64 Respondents

Food indicator:	% of age 35-64 respondents
Full-service grocery within 10-minute walk from home	51
Full-service grocery is the usual source for food shopping	72
Discount store (Wal-Mart, Costco)	25
5 or more fast food meals in past 7 days	9.4
Sometimes/often couldn't afford enough food to eat	29
Food Assistance used, past year:	
Food stamps (SNAP)	21
Food pantry	14
WIC	4.7

Source: DR1983 Marion County CHA survey, respondents age 35-64

As the aging population increases over the next 30 years, the number of familial caregivers is expected to increase by 25%, at a rate of just 0.8% per year,⁵⁹ resulting in a smaller pool of potential informal caregivers.

An estimated 65.7 million caregivers live in the United States, representing an estimated 28.5% of the total population. Nearly one-third of U.S. households (n = 36.5 million) report that at least one household member has served as an unpaid family caregiver in the last 12 months. These caregivers tend to be women (66%) who average 48 years of age.

Nearly two-thirds of caregivers are between the ages of 35 and 64, with 29% between the ages of 35 and 49 and 35% between the ages of 50 and 64. Of ages 35-49, 41% care for children, 26% care for adults ages 18 to 49, and 27% care for adults age 50 and older.

Caregiving for children under age 18

An estimated 16.8 million unpaid caregivers nationwide provide care to special needs children under age 18 because of medical and/or behavioral issues. These conditions and disabilities require a significantly greater level of care than traditional child-rearing requires. The most pervasive conditions of care-requiring children include ADHD/ADD (18%), autism (11%), mental/emotional illness (10%), mental retardation or developmental delay (9%) and asthma/breathing (4%).⁶⁰

The average age of a child receiving care is 8.7 years. On average, 29.7 hours of care are given per week for those under age 18, which is 57% higher than the average time spent caring for an adult.

Caregiving for adults ages 18 to 49

An estimated 11.1 million households have a caregiver for an adult ages 18 to 49. The majority of caregivers are female (59%) averaging 45.8 years of age, who care for a family member: 39% care for their own child, 14% for a sibling, 6% for a spouse, and 6% for a parent. ⁶¹ The average duration of care in this age group is 7.6 years. One-quarter of these caregivers are in high-burden situations.

Adult care recipients are most commonly suffering from long-term physical conditions (54%), followed by emotional or mental health problems (46%), short-term physical conditions (35%) and/or behavioral issues (31%). The primary problem or illness is most commonly identified as mental or emotional illness (23%), Down syndrome (9%) or surgery/wounds (5%). ⁶²

Caregiving for older adults

The National Alliance for Caregiving (2009) estimates that 1 in 5 adults over age 18 care for at least one older relative.⁶³ Two in every three caregivers are women, the majority of whom are

age 50 or older. Most caregivers provide at least 20 hours of unpaid care per week, and the average duration of care is four years.⁶⁴ Those who live with the care recipient spend an average of 43 hours per week in the caregiving role.

Unpaid caregivers provide an estimated 90% of long-term care for disabled individuals.⁶⁵ These caregivers often reduce their work hours or quit their jobs in order to better manage their caregiving responsibilities.⁶⁶ The out-of-pocket expense for a caregiver of an individual over age 50 averaged \$5,531 in 2007.

Though the majority of caregivers report "good" health (60%), family caregiving has been linked to an increased risk for depression and anxiety, increased use of psychoactive medications, poorer self-reported physical health and increased mortality rates.⁶⁷ Fifty-three percent of caregivers indicate that their own decline in health compromises their ability to provide care for a relative.⁶⁸

Those who do not feel as though they have a choice in assuming the caregiving role are more likely to suffer depression and declines in health than those who embrace the role voluntarily. ⁶⁹ At greatest risk are those caregivers who reside with the recipient of care, are older than the average caregiver, and have minimal or no assistance from other caregivers. However, in recent years, the use of paid caregiving has declined from 41% to 35%, ⁷⁰ and at least half of all caregivers report they are the primary source of care. ⁷¹

Both the development of caregiver depression and placement of the care recipient in nursing care can be delayed by paid in-home assistance, care management, adult day services and respite care.

Caregiving for veterans

Nationally, nearly all (96%) of those caring for a veteran with a service-related condition are women, 70% of whom are a co-resident, spouse or partner. Forty-one percent of veterans are between the ages of 18 and 54, and 70% of those needing care have depression or anxiety, 60% have post-traumatic stress disorder, 72 29% suffer traumatic brain injury, 28% have diabetes, and 20% have paralysis or a spinal cord injury. 73

Two-thirds of caregivers of veterans are in a high-burden caregiving situation, many times causing them to temporarily stop working or to take early retirement (47%). Half of the caregivers have experienced financial hardship. Furthermore, the longer that the caregiver remains in the role, the more likely the health of the caregiver will decline. Of those who have provided care for five years or more, 23% report their health to be "fair" or "poor."⁷⁴

The Homeless

In January 2012, Marion County's Coalition for Homelessness Intervention and Prevention reported that 869 persons between the ages of 35 to 61 were homeless, comprising approximately 56% of the county's 1,647 homeless persons. In 2011, there was a 19% increase in persons housed in emergency shelters and a 34% increase in those living "unsheltered" on the street compared to a year earlier.

While homeless persons ages 35 to 61 do not represent a large percentage of the county population as a whole, they remain vulnerable to poor health outcomes as a result of a number of social determinants. Of all the total 1,647 homeless individuals, 239 adults were in families, 350 adults were victims of domestic abuse, and 351 were veterans. Nearly 1 in 3 homeless individuals reported a substance abuse issue, and 18% reported a prior felony conviction.

In Marion County, veterans make up 21% (n = 351) of the homeless population but only 8% of Indiana's population as a whole. Ninety percent were classified as post-Vietnam War veterans between the ages of 35 and 61. Of the veterans identified as homeless, 43% self-reported an alcohol problem and 34% reported problems with drugs – common problems for those suffering from PTSD attributed to serving in one or more war zones.

Summary and Conclusions

The ages 35-64 work group designated three issues as the highest priority for action: high rates of substance abuse, violent death and physical disability. All affect quality of life not only for the subject but for family and friends as well. Substance abuse can result in chronic illness and loss of daily function. Physical disability, especially that resulting from early exposure to high-risk behaviors and lack of access to care, may perpetuate a cycle of poverty and need. Violent death ruins families and neighborhoods and create strong inequalities in health outcomes.

Secondary issues were also listed, including high prevalence of depression and poor mental health function in this age group and an increasing rate of accidental death. While both are extremely costly to society, accidental deaths and associated impairments are highly preventable. Finally, attention must to drawn to the growing burden of caregiving for this cohort. It is estimated that 90% of adults in this age group care for either a child and/or a disabled adult, often at high cost both physically and financially.⁷⁶

Acknowledgments

The Epidemiology staff would like to thank the work group and other contributors for their enthusiasm, expertise and willingness to undertake difficult topics in a very short period of time. Additionally, we thank Franciscan St. Francis Health and its representative, Fred Bagg, for sharing the 2009 through 2011 county hospital emergency department data for this Community Health Assessment, and Margie Payne, director of Midtown Mental Health Services, for nominating mental health experts from her office. Our thanks also to Steven Jacobs, who facilitated meeting schedules, lists of key participants and other tasks by the dozens, and Elizabeth Bowman, an MPH candidate at the Fairbanks School of Public Health, for her quick grasp of topics and additional material for meetings.

Appendix 1: Marion County Ages 35-64 Work Group Members

Name: Representing: (*CHA steering committee)

Debra Buckner Marion County Public Health Department, Addictions Prevention

Susan Barclay School of Nursing, Marian University

Sandra Edmondson Marion County Public Health Dept., Diabetes Education

Douglass Hairston City of Indianapolis, Front Porch Alliance

Blake Johnson Health and Hospital Corporation, Advantage Program

Sarah Ketterer* IU Health

Ron Miller Drug Free Marion County, Inc.

Mandla Moyo AARP

Pamela Pikus Arthritis Foundation

Doug Poe* Native American Center

Dave Sander Central Indiana Agency on Aging, Director,

Lifelong Living Communities

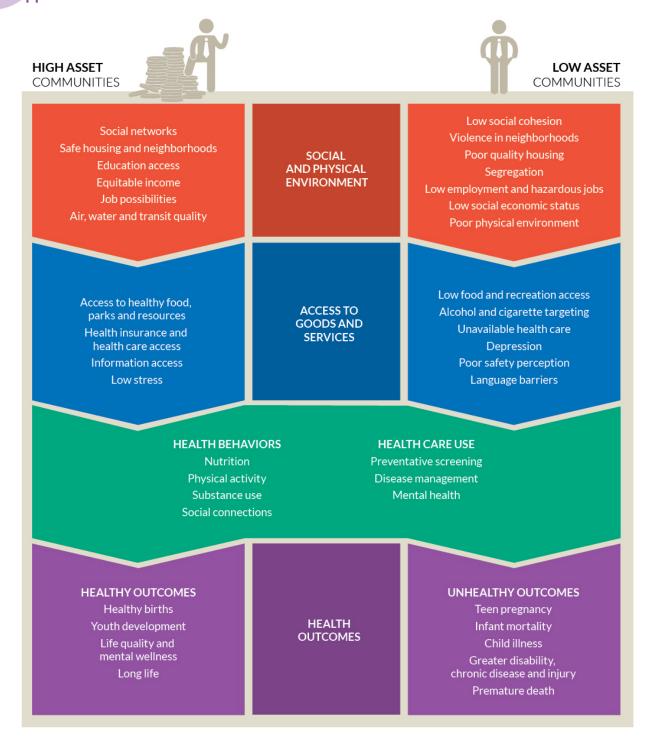
Staff:

Shandy Dearth Coordinator, Department of Epidemiology

Joe Gibson, PhD Director, Department of Epidemiology

Millicent Fleming-Moran, PhD Epidemiology Researcher

Appendix 2: Social Determinants of Health



Source: Marion County Public Health Department (2012). Marion County 2012 Community Health Assessment.

Appendix 3: 2012 Marion County: County Health Rankings

	Marion County	Margin of error	National benchmark*	Indiana	Rank among 92 counties	
Health Outcomes					82	
Mortality				1	81	
<u>Premature death (Years of Potential Life Lost)</u>	9,229	9,008-9,450	5,466	7,687		
Morbidity						
Poor or fair health	18%	17-19%	10%	16%		
Poor physical health days	3.6	3.4-3.9	2.6	3.6		
Poor mental health days	3.8	3.6-4.1	2.3	3.6		
Low birth weight	9.2%	9.0-9.4%	6.0%	8.1%		
Health Factors					85	
Health Behaviors					70	
Adult smoking	26%	24-27%	14%	24%		
Adult obesity	30%	29-32%	25%	31%		
Physical inactivity	26%	25-28%	21%	27%		
Excessive drinking	16%	15-18%	8%	16%		
Motor vehicle crash death rate	12	11-13	12	15		
Sexually transmitted infections	753		84	341		
Teen birth rate	67	66-68	22	44		
Clinical Care					19	
Uninsured	18%	17-19%	11%	16%		
Primary care physicians	602:1.0		631:1.0	889:1.0		
Preventable hospital stays	74	72-75	49	78		
<u>Diabetic screening</u>	81%	79-82%	89%	82%		
Mammography screening	63%	62-66%	74%	64%		
Social & Economic Factors					91	
High school graduation	81%			84%		
Some college	58%	57-59%	68%	58%		
<u>Unemployment</u>	10.0%		5.4%	10.2%		
Children in poverty	31%	28-34%	13%	22%		
Inadequate social support	23%	22-25%	14%	20%		
Children in single-parent households	45%	44-47%	20%	32%		
<u>Violent crime rate</u>	1,155		73	367		
Physical Environment					92	
Air pollution-particulate matter days	7		0	2		
Air pollution-ozone days	7		0	3		
Access to recreational facilities (% population)	10%		16	10		
Limited access to healthy foods (%population)	5%		0%	7%		
Fast food restaurants (% of total restaurants)	55%		25%	50%		

Source: DR1724 County Health Rankings wenbsite, 2012

Appendix 4: Mortality, Marion County: Age Groups 35-44, 45-54 and 55-64, 2008-2012

Age group 35-44 mortality: leading causes 2008-2012

Rank	Age 35-44	MC rates per 100,000	US rates per 100,000 (2010)	MC:US rate ratio
	Total from all causes	266	170.5	1.6
1	Accidents	43	36	1.2
2	Malignant neoplasms	41	28.8	1.4
3	Diseases of heart	38	25.8	1.5
4	Intentional self-harm (suicide)	24	16	1.5
5	Assault (homicide)	16	6.0	2.7
6	Human immunodeficiency virus (HIV) disease	12	4.6	2.6
7	Cerebrovascular diseases	10	4.6	2.2
8	Chronic liver disease & cirrhosis	8	5.9	1.4
9	Diabetes mellitus	8	4.4	1.8

DR1936 Marion County death certificates

Age group 35-44 mortality: leading causes by race, 2008-2012

White ranked cause of death	Ages 35-44 white non-Latino rate per 100,000 (number of deaths)	Ages 35-44 black non-Latino rate per 100,000 (number of deaths)	Black:White rate ratio
1	Accidents; 50 (145)	Accidents; 34 (42)	0.68
2	Malignant neoplasms; 39 (112)	Malignant neoplasms; 52 (65)	1.33
3	Diseases of heart; 34 (98)	Diseases of heart; 61 (76)	1.79
4	Intentional self-harm (suicide); 32 (91)	Intentional self-harm (suicide); 12 (15)	0.38
5	Chronic liver disease & cirrhosis; 11 (31)		n/a
6	Human immunodeficiency virus (HIV) disease; 9 (25)	Human immunodeficiency virus (HIV) disease; 23 (29)	2.56
7	Assault (homicide); 7 (20)	Assault (homicide); 38 (47)	5.43
8	Cerebrovascular diseases; 7 (20)	Cerebrovascular diseases; 18 (23)	2.57
9	Diabetes mellitus; 6 (16)	Diabetes mellitus; 14 (18)	2.33
Total rate, all causes	255	350	1.37

DR1936 Marion County death certificates

Age 35-44, leading causes of mortality: gender comparison of rates, 2008-2012

Ranks	Causes of death ranked by number of deaths	Male 35-44 rate per 100,000 (average deaths)	Female 35-44 rate per 100,000 (average deaths)	Male: Female rate ratio
1	Accidents	61(142)	26 (63)	2.35
2	Diseases of heart	50 (118)	26 (61)	1.92
3	Malignant neoplasms	38 (90)	43(103)	0.88
4	Intentional self-harm (suicide)	37(87)	11(26)	3.36
5	Assault (homicide)	25(58)	8 (19)	3.13
	Total rates, all causes	340	194	1.75

DR1936 Marion County death certificates

Age 35-44 Years of Potential Life Lost (YPLL): top contributors to YPLL by gender and race, 2008-2012

Rank	Total YPLL from all causes: 26,141	Gender: Most Affected Race	YPLL	Gender: Most Affected Race	YPLL	Rate Ratio
1	Accidents	Male	5,201	Female	2,332	2.2
		White	5,364	Black	1,527	3.5
	•	•	-			•
2	Malignant neoplasms	Male	3,136	Female	3,661	0.9
		White	3,937	Black	2,300	1.7
3	Diseases of heart	Male	4,118	Female	2,202	1.9
		White	3,505	Black	2,640	1.3
		•				-
4	Intentional self-harm (suicide)	Male	3,132	Female	928	3.4
		White	3,261	Black	534	6.1

DR1936 Marion County Health Department, Epidemiology Source: Census data, and birth and death certificates.

Age group 45-54 mortality: leading causes, 2008-2012

Rank	Age 45-54	MC rates per 100,000	US rates (2010)	MC: US rate ratio
	Total from all causes	646	407.1	1.6
1	Malignant neoplasms	159	111.6	1.4
2	Diseases of heart	125	81.6	1.5
3	Accidents	64	43.7	1.45
4	Intentional self-harm (suicide)	26	19.6	1.22
5	Chronic liver disease & cirrhosis	26	19.2	1.35
6	Chronic lower respiratory diseases	24	9.9	2.42
7	Diabetes mellitus	22	12.5	1.76
8	Cerebrovascular diseases	21	13.1	1.61
9	Assault (homicide)	13	4.4	2.95
10	Human immunodeficiency virus (HIV) disease	12	6.9	1 .72

DR1936 Marion County Death Certificates

Age 45-54 Black: White rate ratios in leading causes, 2008-2012

Rank	Ranked causes of death, by number of white non-Hispanic deaths	White non-Latino Rate(number)	Black non-Latino Rate(number)	Black:White rate ratio
1	Malignant neoplasms	153(518)	201(256)	1.31
2	Diseases of heart	113 (381)	175(223)	1.55
3	Accidents	67(225)	64(82)	0.95
4	Intentional self-harm (suicide)	34(114)		n/a
5	Chronic liver disease & cirrhosis	28(95)	24((30)	0.86
6	Chronic lower respiratory diseases	27(90)	23(29)	0.85
7	Diabetes mellitus	20(66)	35(44)	1.75
8	Cerebrovascular diseases	13(45)	46(58)	3.54
	Total rate for age group	609	845	1.4

DR1936 n/a = These cells have too few cases to calculate a stable rate.

Age 45-54 leading causes of mortality: gender rates, 2008-2012

Ranks	Leading causes	Male rate (average deaths)	Female rate (average deaths)	Male : Female rate ratio
1	Diseases of heart	169(412)	82(212)	2.06
2	Malignant neoplasms	157(382)	162(416)	0.97
3	Accidents	84(204)	46(117)	1.83
4	Intentional self-harm (suicide)	39(95)	14(37)	2.79
5	Chronic liver disease & cirrhosis	34(83)	25(64)	1.36
	Total rates, all causes	779	520	1.5

DR1932, Marion County death certificates. Rate per 100,000 people (5-year average number of deaths per year)

Age 45-54 Years of Potential Life Lost (YPLL): top contributors to YPLL by Gender and Race, 2008-2012

Total YPLL from all causes: 51,878	Gender: Most Affected Race	YPLL	Gender: Most Affected Race	YPLL	Rate Ratio
Malignant neoplasms	Male	9,569	Female	10,390	0.9
	White	13,044	Black	6,289	2.1
Diseases of heart	Male	10,278	Female	5,358	1.9
	White	9,554	Black	5,605	1.7
		•			
Accidents	Male	5,267	Female	2,941	1.8
	White	5,774	Black	2,076	2.8
		•	•		-
Intentional self-harm (suicide)	Male	2,447	Female	897	1.6
	White	2,877	Black	n/a	n/a

DR1936 Rate per 100,000 people (5-year average number of deaths/year)

Age 55-64 Mortality: Leading Causes for Period 2008-2012

Rank	Rates per 100,000 (total deaths/5 years)	MC rates	US rates (2010)	MC:US rate ratio
	Total from all causes	1,344	851.9	1.57
1	Malignant neoplasms	452	300.1	1.5
2	Diseases of heart	282	186.6	1.5
3	Chronic lower respiratory diseases	87	39.0	2.3
4	Cerebrovascular diseases	51	29.3	1.76
5	Diabetes mellitus	46	32	1.44
6	Accidents	43	38.4	1.13
7	Chronic liver disease & cirrhosis	40	26.8	1.48
8	Nephritis, nephrotic syndrome & nephrosis	29	13.9	1.5
9	Intentional self-harm (suicide)	23	17.5	1.35
10	Septicemia	22	12.6	1.7

DR1936 Rates per 100,000 (5-year average number of deaths per year)

Age group 55-64 Mortality: Leading Causes by Race, 2008-2012

White ranked cause of death	White non-Latino rate per 100,000 (5-year average number of deaths per year)	Black non-Latino rate per 100,000 (5-year average number of deaths per year)
1	Malignant neoplasms; 427 (1,151)	Malignant neoplasms; 591 (490)
2	Diseases of heart; 261 (703)	Diseases of heart; 394 (327)
3	Chronic lower respiratory diseases; 96 (259)	Cerebrovascular diseases; 90 (75)
4	Cerebrovascular diseases; 41 (110)	Chronic lower respiratory diseases; 75 (62)
5	Diabetes mellitus; 40 (109)	Diabetes mellitus; 72 (60)
6	Chronic liver disease & cirrhosis; 39 (106)	Accidents; 66 (55)
7	Accidents; 38 (103)	Nephritis, nephrotic syndrome & nephrosis; 57 (47)
8	Intentional self-harm (suicide); 29 (79)	Chronic liver disease & cirrhosis; 47 (39)
9	Nephritis, nephrotic syndrome & nephrosis; 22 (59)	Septicemia; 40 (33)
10	Influenza & pneumonia; 19 (50)	Essential (primary) hypertension & hypertensive renal disease; 24 (20)
Total rate for age group	1,264	1,805

DR1936 Rate per 100,000 (5-year average number of deaths peryear)

Age 55-64 Black: White rate ratios in top causes, 2008-2012

Ranks	Ranked causes of death, by number of white non Hispanic deaths	White non-Latino	Black non- Latino	Black: White rate ratio
1	Malignant neoplasms	427	591	1.38
2	Diseases of heart	261	394	1.51
3	Chronic lower respiratory diseases	96	75	0.78
4	Cerebrovascular diseases	41	90	2.20
5	Diabetes mellitus	40	72	1.80
6	Chronic liver disease & cirrhosis	39	47	1.21
7	Accidents	38	66	1.74
8	Intentional self-harm (suicide)	29	n/a	n/a
9	Nephritis, nephrotic syndrome & nephrosis	22	57	2.59
	Total rate for age group	1,264	1,805	1.43

DR1936 n/a = These cells have too few cases to calculate a stable rate.

Age group 55-64 Leading causes of mortality: Gender compared rates, 2008-2012

MC ranked cause of death	Male rate/100,000 (average deaths/5 years (2008-2012)	Female rate/100,000 (average deaths/5 years (2008-2012)
1	Malignant neoplasms; 554 (967)	Malignant neoplasms; 362 (713)
2	Diseases of heart; 405 (707)	Diseases of heart; 173 (341)
3	Chronic lower respiratory diseases; 87 (151)	Chronic lower respiratory diseases; 88 (173)
4	Cerebrovascular diseases; 64 (112)	Diabetes mellitus; 42 (82)
5	Accidents; 63 (110)	Cerebrovascular diseases; 39 (76)
6	Chronic liver disease & cirrhosis; 58 (101)	Accidents; 25 (49)
7	Diabetes mellitus; 51 (89)	Chronic liver disease & cirrhosis; 24 (47)
8	Intentional self-harm (suicide); 37 (65)	Nephritis, nephrotic syndrome & nephrosis; 22 (44)
9	Nephritis, nephrotic syndrome & nephrosis; 36 (62)	Septicemia; 21 (41)
10	Septicemia; 24 (42)	All Causes; 15 (29)
Total rate for age group	1,718	1,012

DR1936 Rate per 100,000 people (5-year average number of deaths per /year)

Age 55-64, leading causes of mortality: gender comparison of rates, 2008-2012

Ranks	Leading causes	Male	Female	Male : Female rate ratio
1	Malignant neoplasms	554	362	1.53
2	Diseases of heart	405	173	2.34
3	Chronic lower respiratory diseases	87	88	0.99
4	Cerebrovascular diseases	64	39	1.64
5	Accidents	63	25	2.52
	Total rates from all causes	1,718	1,012	1.7

DR1936 Rate per 100,000 people (5 year-average number of deaths per year)

Age 55-64 Years of Potential Life Lost (YPLL): top contributors to YPLL by gender and race, 2008-2012

Rank	Total YPLL from all causes: 53,018	Gender: Most Affected Race	YPLL	Gender: Most Affected Race	YPLL	Rate Ratio	
1	Malignant neoplasms	Male	15,052	Female	11,005	1.4	
		White	17,847	Black	7,622	2.3	
2	Diseases of heart	Male	10,913	Female	5,238	2.1	
		White	10,847	Black	5,024	2.2	
3	Chronic lower respiratory diseases	Male	2,325	Female	2,585	0.9	
		White	3,907	Black	963	4.1	
4	Accidents	Male	1,845	Female	842	2.2	
		White	1,785	Black	890	2.0	

DR1936 Rate per 100,000 people (5-year average number of deaths per year)

Appendix: 5 Hospitalizations Ages 15-44 and 45-64, Marion County (2009-2011) and U.S. Rates (2010)

Hospital discharges, 2009-2011 15-44 years	Marion County total number	MC rate per 10,000	US rate per 10,000 (2010)	MC:US rate ratio
Total (all causes)	30,014	760.6	838.3	0.9
Complications of pregnancy, childbirth, and the puerperium	13,675	346.55	39.8	8.7
Mental disorders	2,962	75.07	85.4	0.9
Injury and poisoning	2,065	52.34	64	0.8
Diseases of the digestive system	2,023	51.27	74.3	0.7
Diseases of the circulatory system	1,255	31.8	33	1
Diseases of the respiratory system	1,154	29.25	32.5	0.9
Endocrine, nutritional and metabolic diseases, and immunity disorders	1,088	27.56	31.5	0.9
Diseases of the genitourinary system	956	24.22	36.3	0.7
Symptoms, signs, and ill-defined conditions	837	21.22	4.5	4.7
Infectious and parasitic diseases	846	21.43	15.2	1.4
Neoplasms	582	14.74	9.6	1.5
Diseases of the skin and subcutaneous tissue	537	13.62	17.4	0.8
Diseases of the nervous system and sense organs	535	13.57	19.3	0.7
Diseases of the musculoskeletal system and connective tissue	525	13.3	22.7	0.6
Diseases of the blood and blood- forming organs	500	12.68	9.5	1.3
Supplementary classifications ^a	400	10.14	330.8	.03
Congenital anomalies	68	1.73	3	0.6

Source: DR1941 a. NHDS,2010 Public Use Documentation, ICD-9/10 codes V01-V89

Hospital discharges, 2009-2011 45-64 years	Marion County total number	MC rate per 10,000	US rate per 10,000 (2010)	MC:US rate ratio
Total (all causes)	27,247	1,223.22	1,221.30	1
Diseases of the circulatory system	5,578	250.42	239	1
Diseases of the respiratory system	2,979	133.73	115.8	1.2
Diseases of the digestive system	2,938	131.91	148.3	0.9
Injury and poisoning	2,383	106.97	106.4	1
Mental disorders	1,862	83.59	83.9	1
Diseases of the musculoskeletal system and connective tissue	1,781	79.94	115.2	0.7
Symptoms, signs, and ill-defined conditions	1,730	77.68	6.5	12
Neoplasms	1,517	68.12	66.8	1
Infectious and parasitic diseases	1,410	63.3	43.5	1.5
Endocrine, nutritional and metabolic diseases, and immunity disorders	1,396	62.66	78.3	0.8
Diseases of the genitourinary system	1,224	54.94	69.4	0.8
Supplementary classifications ^a	695	31.2	35.4	0.9
Diseases of the nervous system and sense organs	690	30.96	37.7	0.8
Diseases of the skin and subcutaneous tissue	666	29.88	31	1
Diseases of the blood and blood- forming organs	317	14.25	17.6	0.8
Congenital anomalies	63	2.84	4.1	0.7
Complications of pregnancy, childbirth, and the puerperium	18	0.79	na	

Source: DR1941 a. NHDS,2010 Public Use Documentation, ICD-9/10 codes V01-V89

Appendix 6: Work Group Ages 35-64: Health Issues Prioritization Grid, June 5, 2013

Item	No one working on this	Momentum: many focused on the issue	Rapid impact (3-5 years); policy- feasible	Impacts multiple intermedia- ate or final outcomes	High severity; social/ health care costs	High disparity; inequity	Increasing trend in a leading health indicator	Leading morbidity/ death cause	Highly preventable	TALLY
Substance abuse including smoking, alcohol		1	1	1	1	1	1	1	1	8
Chronic physical disabilities, including obesity/ diabetes		1	1	1	1	1	1	1	1	8
Poisoning events	1	MERGE WITH	SUBSTANCE	ABUSE						0
Violent deaths, injury		1	1	1	1	1	1	1	1	8
Depression; mental health			1	1	1	1		1		5
Caregiving burden		1	1			1	1			4
Accidental mortality/ morbidity		1		1	1		1	1	1	6

Sources

http://www.countyhealthrankings.org/#app/indiana/2012/marion/county/1/overall

- n Peer Midwestern urban counties are Louisville (Jefferson Co.) KY, Cincinnati (Hamilton Co.) OH, Columbus (Franklin Co) OH, Nashville (Davidson Co.) TN and Milwaukee (Milwaukee Co.) WI, as suggested by the CHSI website, above.
- ⁷ HP2020 Leading Health Indicator; Binge drinking , SA 14.3, U.s Target: 24.4% of adults over 18. http://www.healthypeople.gov/2020/data-search/Search-the-Data?nid=5205
- ⁸ Peer Midwestern urban counties are Louisville (Jefferson Co.) KY, Cincinnati (Hamilton Co.) OH, Columbus (Franklin Co) OH, Nashville (Davidson Co.) TN, and Milwaukee (Milwaukee Co.) WI, as suggested by the CHSI website, above.
- ⁹ http://indyindicators.iupui.edu/docs/MetricsForQualityLife Web.pdf
- ¹⁰ U.S. Census 2010, QT-P2-Geography-Marion County, Indiana. 2010 Census Summary File 2.
- ¹¹ DR1747 QT-P2-Geography-Marion County, Indiana 2010 Census Summary File 2.
- ¹² STATS Indiana, using data from the Indiana Business Research Center, IU Kelley School of Business, produced on 4/3/2013 11:01:18 AM . See Kinghorn, Matt. Future Workers of Indiana: Projecting the Labor Force to 2040. In Context, Nov.-Dec. 2012, vol. 13 no. 6. Indiana Business Research Center, Indiana University Kelley School of Business

http://www.incontext.indiana.edu/2012/nov-dec/article1.asp

- ¹³ Labor Force Projections Marion County and Indiana, 2010 to 2040. STATS Indiana, using data from the Indiana Business Research Center, IU Kelley School of Business http://www.stats.indiana.edu/labor_proj/
- ¹⁴HP2020 IVP-29. Reduce homicides. Baseline: 6.1 homicides per 100,000 population (2007) (age adjusted to the year 2000 standard population).

Target: 5.5 homicides per 100,000 population.

- ¹⁵ HP2020, Mental Health, MHMD1. Reduce Suicide rates (LHI). Target: 10.2 suicides per 100,000 population.
- ¹⁶ DR1936.
- ¹⁷ DR1998 Marion County deaths by firearms, MVAs and poisonings.
- ¹⁸ Violence-Related Firearm Deaths Among Residents of Metropolitan Areas and Cities --- United States, 2006-2007, MMWR, May 13, 2011 / 60(18);573-578.
- ¹⁹ DR1953 Ages 25-44 and 45-64 injury coded ED visits.
- ²⁰ DR1936.
- ²¹ DR1936.
- ²² HP2020 MHMD-1. Reduce deaths in adults due to suicide: Target 10.2 deaths per 100,000.
- ²³ Suicide Among Adults Aged 35–64 Years United States, 1999–2010, MMWR, May 3, 2013 / 62(17);321-325.
- ²⁴ Ibid.
- ²⁵ Ibid.
- ²⁶ Ibid.
- ²⁷ DR1936.
- ²⁷ DR1979

¹ DR1983 Marion County Community Health Assessment Survey 2012, 35-64 year old respondents.

² National Alliance for Caregiving, 2009, Caregiving in the U. S. A focused look at those caring for someone age 50 or older. Executive summary. AARP/NAC

³ WHO Commission on Social Determinants of Health, World Health Organization. Closing the gap in a generation: health equity through action on the social determinants of health: Commission on Social Determinants of Health final report. Geneva, Switzerland: World Health Organization, Commission on Social Determinants of Health; 2008. http://whqlibdoc.who.int/publications/2008/9789241563703_eng.pdf

⁴ RWJF County Health Rankings website, Marion County, 2012.

⁵ Peer Midwestern urban counties are Louisville (Jefferson Co.) KY, Cincinnati (Hamilton Co.) OH, Columbus (Franklin Co) OH, Nashville (Davidson Co.) TN, and Milwaukee (Milwaukee Co.) WI, as suggested by the CHSI website, above.

⁶ DHHS, Community Health Status Indicators (CHSI) 2009 (most recent year), Marion County, IN. http://communityhealth.hhs.gov/Demographics.aspx?GeogCD=18097&PeerStrat=3&state=Indiana&county=Mario

- ²⁸ DR1937 Marion County death certificates.
- ²⁹ Violence-Related Firearm Deaths Among Residents of Metropolitan Areas and Cities --- United States, 2006-2007, MMWR, May 13, 2011 / 60(18);573-578.
- ³⁰ Violence-Related Firearm Deaths Among Residents of Metropolitan Areas and Cities --- United States, 2006-2007, MMWR, May 13, 2011 / 60(18);573-578.
- ³¹ Crosby AE, Han B, Ortega LAG, Parks SE, Goerer J. Suicidal thoughts and behaviors among adults aged ≥18 years-United States, 2008-2009. MMWR Surveillance Summaries 2011;60(no. SS-13). Available from www.cdc.gov/mmwr/preview/mmwrhtml/ss6013a1.htm?s cid=ss6013a1 e.
- ³² DR1934.
- ³³ 2009-2011 Disability Characteristics, American Community Survey3-years Estimates (S1810), U.S. Department of Commerce, American Fact Finder

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk

- ³⁴ DR1979 2011 American Community Survey 1-Year Estimate, Table C18120
- ³⁵ 2009-2011 Disability Characteristics, American Community Survey3-years Estimates (S1810), U.S. Department of Commerce, American Fact Finder

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk

- ³⁶ U.S. Social Security Administration, Master Beneficiary Record, 100 percent data. OASDI Social Security payment beneficiaries, Marion County 2011.
- ³⁷ DR1983 Marion County Community Health Assessment Survey 2012, 35-64 year old respondents.
- ³⁸ This question was only asked in the 2009 BRFSS survey.
- ³⁹ This question was only asked in the 2009 BRFSS survey.
- ⁴⁰ This question was only asked in the 2009 BRFSS survey
- ⁴¹ Mental Health and Substance Abuse Needs Assessment for Marion County, 2010 Center for Health Policy (10-H03), IUPUI.
- ⁴² Drug Abuse Warning Network, 2011. This analytic category includes ED visits that involve nonmedical use of pharmaceuticals: patients who took a higher than prescribed or recommended dose of their own medication, patients who took a pharmaceutical prescribed for another person, malicious poisoning of the patient by another individual, and documented substance abuse involving pharmaceuticals.
- ⁴³ Drug Abuse Warning Network, 2011About one in five (17.6%) of ED visits involving nonmedical use of pharmaceuticals also involved alcohol.
- ⁴⁴ Drug Abuse Warning Network, 2011 DAWN relies on a nationally representative sample of hospitals with oversampling of hospitals in selected metropolitan areas, including non-Federal, short-stay, general medical and surgical facilities that operate 24-hour EDs. National representative estimates of drug-related ED visits for the U.S. are calculated by applying weights and adjustments to the data.
- ⁴⁵ Drug Abuse Warning Network, 2011: National Estimates of Drug-Related Emergency Department Visits http://www.samhsa.gov/data/sites/default/files/DAWN2k11ED/DAWN2k11ED/DAWN2k11ED.pdf
- ⁴⁶ Indiana Prevention Center, Indiana University, Community Risk Factors, Alcohol sales outlets in Marion County 2011, Table 6.1.
- ⁴⁷ DR1936 Marion County death certificates.
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- ⁵⁴ The State of Mental Health and Aging in America

http://apps.nccd.cdc.gov/MAHA/CompareStates.aspx?State=442#compare results

⁵⁵ The State of Mental Health and Aging in America

http://apps.nccd.cdc.gov/MAHA/CompareStates.aspx?State=442#compare results

- ⁵⁶ The 95% confidence interval (CI) around each point estimate shows the range which might contain the true estimate for each population. If the confidence intervals overlap, this signifies there is no significant difference between one point estimate and a compared estimate.
- ⁵⁷ National Alliance for Caregiving, 2009, Caregiving in the U. S. A focused look at those caring for someone age 50 or older. Executive summary. AARP/NAC
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Executive Summary

In the spring of 2012, the Marion County Public Health Department (MCPHD) called together a steering committee of providers, consumers and experts in the public health field to guide MCPHD in producing a countywide Community Health Assessment (CHA).

The goals of the CHA are to:

- 1) Describe the community health status of Marion County, with comparisons to its urban peers and to national standards (where applicable)
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health and the pathways between social determinants of health, ¹ intermediate outcomes and final health outcomes
- 4) Prioritize the identified issues.

The Community Health Assessment is divided into 10 sections, including six age-specific reports. Each report is a product of a work group of topical experts, community-based partners and MCPHD staff, who identified problems, trends and factors for the leading causes of mortality and morbidity, and determined how the county differed from national indicators. Each identified issue represents a specific population group, risk factor(s) or access to care issue and may require a different intervention strategy.

The objective of the Age 65 and Older report is to focus attention on issues that have large impacts on the elderly population. The reports, taken together, will inform the Community Health Improvement Plan.

The Ages 65+ work group evaluated issues based on criteria including: a) the number of people affected, b) the severity of the impact, c) the degree of any disparities for inequities, d) any trend of increasing impact, e) the availability of resources and proven solutions, f) the degree of secondary impacts, g) the potential for measurable change within five years, and h) lack of awareness and resources.

They identified three issues as having the highest priority for community action:

Chronic disease management among elderly with multiple conditions.

About 85 percent of persons age 65 and older have more than one diagnosed chronic illness, and 1 in 4 also reports needing help with health care instructions.² Over 1 in 3 (38.8%) has a diagnosed disability.³

A well-coordinated primary care/public health network is needed for prevention efforts (smoking prevention/cessation, immunizations, nutrition asssessment, physical activity, short-term physical therapy and home safety assessment) and secondary prevention screenings (cancer, hearing/vision, depression, dementia and fall risk screening). In addition, this population requires major risk factor monitoring for blood pressure, serum cholesterol and glucose levels as well as medication reviews.

This coordination is critical to preventing complications, unnecessary hospitalizations and loss of independence. Medicare has promoted an annual wellness visit for chronic disease management that supports this approach, and it has called for comprehensive "medical homes" for the elderly that can coordinate primary care services.

Significant mental health burden for the age 65+ population.

This population faces increasing prevalence and mortality rates due to dementia, including Alzheimer's disease, as well as a rising depression rates in both seniors and their caregivers and high rates of suicide among those over age 75. The work group found that few current resources are focused on the mental health concerns of the elderly given the increasing prevalence of these conditions.

Need for more resources to encourage independent living.

Too many elders suffer from isolation, including those who live with a spouse. They could benefit greatly from increased community support in the forms of transportation and access to goods and services. In addition, support is need for the 1 in 10 households that provide over 80% of the long-term care that keeps elders and those with disabilities in the community.

The work group also identified two health issues with moderate priority for action:

Fall prevention. Falls in the age 65+ population may signal increased vulnerability due to underlying illness. In those over age 75, falls increase the risk of hip and other fractures and often precipitate a cascade of greater health care utilization and loss of independence and function.

Increase awareness and access to immunizations. Some childhood immunizations wear off with age, and other vaccines are especially beneficial to seniors, who are among the most vulnerable to certain acute illnesses. Health care providers should evaluate their Age 65+ patients to see how they can benefit.

A Call to Action

The work group highly ranked chronic disease management for the elderly with multiple conditions due to the high prevalence of comorbid conditions and the high probabilities of overmedication or medication error, increasing risk for complications and hospitalization and ultimate loss of independence.

Similarly, increasing life span and prevalent cerebrovascular risk factors place a large segment of the population at risk for increasingly poor mental health due to increased prevalence of dementia (including Alzheimer's disease) and depression among both seniors and their caregivers.

Finally, the work group called for systemwide measures to support seniors in the community to reduce isolation and increase independence. Secondary issues included keeping abreast of preventive immunizations for this group and reducing the risk of falls.

Current initiatives

- Indianapolis was one of the first two communities in the nation to receive the H1N1 vaccine and continues to be a national leader in implementing the flu emergency response plan.
- A 2012 Central Indiana Commission on Aging (CICOA) report found 59% of elders felt they can remain in their homes financially, and 32% work full or part time.

Next Steps

All CHA reports will form a baseline for the upcoming Community Health Improvement Plan. This report is being disseminated among the Marion County Public Health Department's programs and partners as well as with other public health organizations. It will be posted on MCPHD's and other partners' websites. The Epidemiology Department will work with partners to develop and monitor vital statistics for births and deaths, hospitalization rates and injury data to track population health status changes.

Community Health Assessment Goals & Process

When the Marion County Public Health Department (MCPHD) convened a steering committee to guide the Community Health Assessment (CHA) process, the committee agreed to a series of person-centric (age group) reports, each to be advised by a work group of steering committee members, topical experts, MCPHD staff and community-based partners. Each work group helped identify problems, trends, causal factors and existing resources to address those factors. Finally, they prioritized the identified issues for that age group and planned the dissemination of the report.

The work group members for the age 65+ population are listed in Appendix 1.

The goals of the CHA are to:

- 1) Describe the community health status of Marion County, with comparisons to its urban peers and to national standards (where applicable)
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health and the pathways between social determinants of health, 4 intermediate outcomes and final health outcomes
- 4) Prioritize the identified issues.

The work group also identified where potentially important issues could not be ranked due to data limitations. The CHA will serve as a basis for MCPHD's Community Health Improvement Plan (CHIP).

Social Determinants of Health

From 2000 to 2010, Marion County's population grew by 5% to 903,393, while the proportion of its citizens living in poverty, and/or not covered by health insurance, increased.⁵ Those two social determinants of health (Appendix 2) are reflected in the County Health Rankings⁶ for the county and used by MCPHD as primary indicators of health status.

Purpose of CHA

- Increase awareness of community health issues
- Describe social determinants & risk factors
- Compare Marion County to peer cities and nation
- Identify health disparities in county
- Prioritize community health needs
- Provide database for MCPHD's Community Health Improvement Plan
- Provide basis for planning programs& policies
- Engage coalitions and partners
- Improve health status of community

County Health Rankings is a collaborative project developed by The Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. The rankings measure health outcomes and health factors for counties in each of the 50 states. The County Health Rankings (Appendix 3) include social determinants such as education, employment levels, community poverty level and health care access (Table 1) as well as key health indicators such as infant mortality and adult obesity rates.

To place Marion County in context with other large urban areas,⁷ Table 1 compares the county's broad population indicator measures with those of five peer Midwestern urban counties from the County Health Status Indicator website whose populations range between 500,000 and 1 million: Louisville, KY (Jefferson Co.), Cincinnati, OH (Hamilton Co.), Columbus, OH (Franklin Co.), Nashville, TN (Davidson Co.) and Milwaukee, WI (Milwaukee Co.).

Table 1: Social Determinants of Health, All-ages Indicators, Marion County Social Context (2006-2010)

Marion County	2010	2006-2010 change	% Peer county range
% adults 25+ who completed high school or GED (2010)	84.1%	(no 2006 data)	84.1- 89.5
Total poverty rate	20%	+ 4.9	15.7-19.9
Cost-burdened homeowners (>30% of income in housing)	26%	NA	24.0 - 28.8
Individuals with SSI ^a	4.7%	+ 1.7	-
Families with food stamps (SNAP)	14.1%	-	NA
Person with disabilities (2010) ^b	12.7%	-	NA
Unemployment rate (2005-2010) ^c	10%	+ 5.0	8.1- 10.7
Median income (2010) ^d	\$39,343	-7.4% (Marion County)	-4.0 - 14.1
Persons with health coverage	83.3%	-0.8	81.8 - 87.7

Indyindicators.iupui.edu, pg 9 a ACS 2006-09 b ACS 2009-10 c IN Dept. of Workforce Development d ACS 2005-2009

Other comparisons used in this report reflect comparisons between Marion County rates of death and disease prevalence and published rates for the U.S. and Healthy People 2020 (HP2020) target objectives for certain health conditions (Tables 2 and 3). Where appropriate, Marion County rates are compared with the U.S. rates using rate ratios (RR).

Table 2: Health Outcomes: Marion County vs. U.S. Mortality Rates, All Ages (2010) and Healthy People 2020 Objectives

Deaths per 100,000	MC 2010	US 2010	HP2020
Unintentional injury deaths	36.2	38	36
Homicide rate	12.7	6.0	5.5
Motor vehicle fatality rate	12.8	11.4	12.4
Diabetes death rate	16.7	20.8	66.6
All cancers death rate	203.5	172.8	160.6
Lung cancer	69.6	47.6	45.5
Breast cancer	26.6	22.1	20.6

CDC WONDER 2007-08, NVSR, death rates by age and age-adjusted for 15 leading causes in 2010.

Table 3: Health Indicators: Marion County, U.S. Prevalence 2010, and Healthy People 2020 Objectives

Health indicators %	MC 2010	US 2010	HP2020
Adults with BMI=>30 (obesity) ⁸	32	35.7	30.5
Diabetes	11.2	9.2	NA
Current smoker (adults age >18) ⁹	23.6	17.1	12
Adults age 20+ who report no leisure-time physical activity 10	24.4	32.6	32.4
Eat 5+ fruits & vegetables per day (2009)	24.5	27.3	NA
Binge drinking ¹¹	15.5	27.1 (2008)	24.4

Source; Indyindicators.iupui.edu—pg 6. BRFSS Survey Data. U.S. and MC data may be from 2009 or 2010, depending on year of survey item.

Of the multiple risk factors listed, Marion County is at the top of the peer county range in the areas of smoking prevalence and rates of homicide, teen births and sexually transmitted infections. It is lowest in median household income and graduation rates. These areas are highlighted and tend to lower Marion County's comparative rankings (Table 4).

Table 4: Health Ranking Indicators: Marion County and Peer Counties, 2011

Indicator	Marion Co., IN	Peer Co. Range
Adult smoking (%)	26	20–26
Adult obesity (%)	30	27–32
Adults not physically active (%)	27	25–28
Diabetes (%)	10	9–12
Adult STI (chlamydia) rate/100,000	860	97–860
Motor vehicle accident death rate/100,000	12	9–16
Homicide rate/100,000	14	9–14
Adult binge drinking (%)	15	12–22
Median household income	\$43,823	\$43,823–\$51,246
Uninsured adults (%)	16	11–21
Unemployed (%)	9.1	8.2-10.3
9th grade cohort graduation (%)	60	60–75
Children in poverty (age 0-18) (%)	24	20–27
Teen birth rate (women ages 15-19)*	68	47–68

Source: County Health Rankings website

Within the state, Marion County ranks as high as 13th (on access to care) and as low as 92nd (on air quality) among Indiana's 92 counties. Of the 15 risk factors measured, ¹² Marion County's ranking improved on seven, was unchanged on three, and declined on five (including diet and exercise, and access and quality of care) between 2010 and 2011.

Understanding where the county encounters challenges and exceeds national objectives helps to frame the priorities set for improving health in our population.

Background

Population Profile: Ages 65 and older

Individuals ages 65 and older make up about 11% of the 2013 county population, or about 96,000 persons. If Marion County follows U.S. growth patterns, this age group will make up 16% (162,000) of the population by 2035 and will double in the next 20 years.¹³

^{*} County health ranking data for teen birth rate is for 1,000 live births among women ages 15-19. At healthindicators.gov, birth rates for ages 15-19 for 2008 were: national, 41.4, Indiana, 43.7, and Marion County, 62.7.

The 2010 U.S. Census identified 72,199 county residents age 65 and older who lived in households with more than one related individuals. An additional 31,082 seniors lived alone (43%), while 8% (5,803) lived in households as "other relatives" and about 2% (1,719) lived in households as non-relatives.¹⁴

Over one-third of Marion County residents age 60 and older live alone (38%). Almost 60% are married couples. Nearly half have resided in the county for over 40 years (Table 5).

Table 5: Marion County Population Ages 60 and Older (2008)

Population, non-institutionalized ages 60+	Percent of total (240,914)
60-64 years	24%
65-74 years	42%
75-84 years	25%
85+ years	9%
Male	43%
Married	58%
Live alone	38%
Non-white	15%
Years in community: 40+	46%
Years in community: 60+	19%

Source: CICOA LIFELONG LIVING COMMUNITIES, Report to the Community on Older Adults in Central Indiana from the 2008 Indiana AdvantAge Initiative Survey: http://www.vnsny.org/advantage/survey.html

Economic Status

Almost 1 in 10 (8.9%) of Marion County residents age 65+ met federal poverty guidelines in 2010.¹⁵ An average Social Security income benefit of \$14,584 per year per retiree is received by 95% of Indiana retirees.¹⁶ Nearly one-third (30%) of elders in Indiana live on Social Security alone, and over 40% would be below federal poverty limits without their Social Security income.¹⁷

Over 95% of elders are covered by Medicare; about 10% of these also receive Medicaid. 18

Between 2000 and 2010, the proportion of county residents under 100% of the federal poverty level (FPL) grew to 18.8% overall, including 27.7% of working-age (18-64) adults. Over 7,500 elders age 65 and older lived in poverty (2011).¹⁹

Median family income in Marion County was \$39,393 in 2010, a sum considered inadequate to provide "economic self-sufficiency." That compares to \$44,616, which is the median family income for Indiana. As in many urban areas, county family households meeting poverty

standards included 26.2% of black and 35.7% of Hispanic families compared to 14.3% of white families. The county's unemployment rate increased from 5.2% in 2006 to 10.5% in 2010.²¹

High Priority Issues

The work group selected three issues as having highest priority for community action: chronic disease management, high prevalence of mental health issues, and increasing need for resources to promote independent living. All met six out of the 10 prioritization criteria.

High Priority Issue A: Chronic Disease Management

Nearly 26% of persons age 65 and older in Marion County have one diagnosed chronic condition, and 60% have two or more common chronic conditions. One in four also reports needing help with health care instructions, ²³ and over 1 in 3 (38.8%) has a diagnosed disability. ²⁴ A well-coordinated primary care/public health network is needed to prevent complications, , unnecessary hospitalizations, and loss of independence.

Table 6: Population Age 65+: Marion County Chronic Disease Summary Statistics

Issue	Relevant statistics	Risk factors (from 2012 CHA or BRFSS, 2009-2011)
Cardiovascular disease deaths 2008-2012	1,429 deaths per 100,000 population	Smoking (11%), overall fair or poor health (39%), obesity (25.7%)
Cancer deaths— all sites, 2008-2012	1,335 deaths per 100,000 population	MC all cancers rate: 208.6 HP2020 objective: 160.6
Lung cancer, 2009-2011	32.3% of Marion County cancer deaths	Smoking (11%) MC lung cancer death rate: 70/100,000; HP2020: 45.5/100,000
Colon/rectal cancer, 2009-2011	8.9% of Marion County cancer deaths	MC ages 50+ with sigmoidoscopy, colonoscopy: 68.2% Smoking (11%), alcohol and red meat consumption, high BMI, lack of exercise, and low fruit and vegetable consumption.
Prostate cancer, 2009-2011	6.8% of Marion County cancer deaths	MC men ages 40+ with a PSA test past two years: 54.9% First-degree relative with prostate cancer.
Breast cancer, 2009-2011	6.1% of Marion County cancer deaths	MC women ages 50+ with mammogram past 2 years: 71.6%; HP2020: 81.1%. Exposure to estrogens/HRT, alcohol <2 drinks per day, increased BMI (35.9% overweight, 25.7% obese), low physical activity.
Cerebrovascular deaths, 2008-2012	348 deaths per 100,000 population	Uncontrolled hypertension (67% high blood pressure), diabetes (25%), high cholesterol (54.9%), previous stroke (12.6%)(BRFSS).
Asthma prevalence	10% of 2012 CHA respondents age 65+	U.S.: 8% (2010, BRFSS)
		Prevalence
% of age 65+ Marion Cond ≥2, or one, chronic cond		60% have two or more chronic conditions. 26% have one.
# of Marion County Med selected causes (% of Med 2011) ²²	•	Congestive heart failure 2,281 (7.1%), arrhythmias 2,119 (6.6%), pacemaker 1,783 (5.5%), myocardial infarction 1,550 (4.8%), stroke 1,417 (4.4%), chronic obstructive pulmonary disease 1,484 (4.6%), diabetes 1,048 (3.3%)
% age 65+ needing spec	ial medical equipment	20.6% (BRFSS)

Age 65+: Ever been diagnosed with (CHA 2012)	% [95%CI]	
Hypertension/high blood pressure, not in pregnancy	64 [59.6 - 67.6]	
High blood cholesterol, not in pregnancy	50 [45.8 - 54.7]	
Diabetes or high blood sugar	28 [23.6 - 32.2]	
Heart attack, angina or coronary heart disease	25 [20.5 - 28.7]	
Depression or dysthymia	16 [12.4 - 20.4]	
Current asthma	10 [7.5 - 12.5]	

Source: DR2062 Summary statistics, CHA age 65+

In this age group, chronic diseases make up the leading five causes of death: cancer, heart disease, cerebrovascular disease, chronic respiratory disease and Alzheimer's disease. Each condition has risk factors that can be addressed by public health policies, primary prevention and coordinated services. These include:

- Prevention efforts (smoking prevention/cessation, immunizations, nutrition asssessment, physical activity, short-term physical therapy, and home safety assessment)
- Secondary prevention screenings (cancer, hearing/vision, depression, dementia, and fall risk)
- Major risk factor monitoring (blood pressure, serum cholesterol and glucose levels, and medication reviews).

Public policies could include making available and affordable sources of healthy foods, smokefree air, and environments that promote physical activity. Primary prevention includes monitoring of weight and physical activity and regular access to a "medical home" to provide coordinated primary care. Challenges affecting chronic disease care in the senior population include:

- Increasingly complex monitoring and evaluative services required to promote good health
- A tension between a collaborative patient-provider care model and a time-limited primary care appointment setting
- Financial and social limitations that may reduce access to medications or services
- An increase in not only the age 65+ population, but also restrictions on the younger members of the community on which elders depend for community-based support.

Table 7: Marion County (2008-2012) Compared to U.S. (2010) on Leading Causes of Death

	Marion County, age 65+ death rate per 100,000 (Number of deaths) 2008-2012	U.S. rates 2010	Rate ratio
Total from all causes	5,794 (22,378)	4,461	1.30
1	Diseases of heart; 1,429 (5,519)	1,183	1.2
2	Malignant neoplasms; 1,335 (5,156)	984	1.36
3	Chronic lower respiratory diseases; 504 (1,945)	293	1.72
4	Cerebrovascular diseases; 348 (1,345)	273	1.27
5	Alzheimer's disease; 226 (871)	205	1.1
6	Nephritis, nephrotic syndrome & nephrosis; 146 (563)	104	1.4
7	Diabetes mellitus; 122 (472)	122	1.0
8	Influenza & pneumonia; 115 (443)	106	1.08
9	Septicemia; 99 (384)	65	1.52
10	Atherosclerosis; 90 (347)	N/A	

Source: DR1937, MC Death Certificates and National Vital Statistics report 60,#4, Table 7

Leading Causes and Rates of Death

Residents age 65 and older have a mortality profile similar to U.S. elders (2010), but their total mortality rates are 30% higher than the nation (RR: 1.3) (Table 7). Marion County rates exceeded U.S. rates by about 10% to 70% for most of the leading causes.

Diseases of the heart (over 1,400 deaths per 100,000 population) and cancers (about 1,300 per 100,000) each contribute roughly 1 in 4 deaths to the age 65+ toll (over 5,000 deaths each out of 22,000 deaths per year). Chronic lower respiratory diseases (504 per 100,000) contribute 1 in 8 deaths, while cerebrovascular diseases (348 per 100,000) and Alzheimer's disease (226 deaths per 100,000) round out the five leading causes.

Non-Hispanic blacks had a 22% to 45% greater mortality than whites for kidney disease (RR 1.47), cerebrovascular disease (RR 1.26) and cancer (1.22), but had a similar all-cause mortality rate for the period 2008-2012 (Table 8). Whites exceeded Hispanic mortality rates in all leading causes by three- to fourfold, except for kidney disease deaths, where Hispanics led white rates by 30%.

Table 8: Death Rate per 100,000 Disparities, Age Group 65+ by Race: Rate Ratios, 2008-2012

White-ranked cause of death	White mortality rate per 100,000	Black mortality rate	Black:White rate ratio	Hispanic mortality rate	White:Hispanic rate ratio
1. Diseases of heart	1,442	1,430	0.99	452	3.2
2. Malignant neoplasms	1,286	1,573	1.22	343	3.75
3. Chronic lower respiratory diseases	559	601	1.08	9	
4. Cerebrovascular diseases	388	490	1.26	8	
5. Alzheimer's disease	222	244	1.10	47	4.7
6. Nephritis, nephrotic syndrome & nephrosis	131	192	1.47	171	0.76
Total death rate per 100,000 (number of deaths)	5,814 (17,081)	5,992 (4,711)	1.03	2,011 (129)	2.9

Source: DR1937, Marion County death certificates

Males exceeded females in mortality rates by 15% to 50% (greatest for cancer) and had a 20% greater rate of death than women overall. However, men experienced a 40% lower rate for Alzheimer's disease and a 15% lower rate of cerebrovascular disease (Table 9).

Table 9: Mortality Rate Disparities by Gender, Age 65+: Marion County, 2008-2012

Male-ranked cause of death	Male rate per 100,000	Female rate per 100,000	Male:Female rate ratio
1. Malignant neoplasms	1,651	1,092	1.51
2. Diseases of heart	1,608	1,266	1.27
3. Chronic lower respiratory diseases	539	467	1.15
4. Cerebrovascular diseases	309	367	0.84
5. Nephritis, nephroitc syndrome &nephrosis	163	130	1.25
6. Alzheimer's disease	157	262	0.60
7. Diabetes mellitus	150	100	1.5
Total rates per gender	6,318	5,311	1.19

Source: DR1937, Marion County death certificates

From 2000 to 2010, rates of death declined by almost half in this age group for heart disease, stroke, influenza and atherosclerosis, for an overall decline in mortality of about 40%.²⁵ Among

women, heart disease remained the leading cause of death; among men, cancer. Only Alzheimer's disease showed an increase during this period.

A comparison of two 10-year periods – 1998-2002 and 2008-2012 – shows these results (Table 10). Only Alzheimer's disease deaths increased, by 20%, predominantly among women.

Table 10: Age Group 65+: Marion County 1998-2002 Mortality Rates Compared to 2008-2012

Marion County ranked cause of death	2008- 2012 Rate per 100,000	1998-2002 Rate per 100,000	Rate ratio	10-year average change in rates +/-
Diseases of heart	1,429	2,686	0.53	5
Malignant neoplasms	1,335	2,039	0.65	
Chronic lower respiratory diseases	504	635	0.79	\Box
Cerebrovascular diseases	348	657	0.52	
Alzheimer's disease	226	183	1.2	
Nephritis, nephrotic syndrome & nephrosis	146	170	0.86	\Box
Diabetes mellitus	122	213	0.57	
Influenza & pneumonia	115	254	0.45	-
Septicemia	99	142	0.70	
Atherosclerosis	90	163	0.55	
Total for age group	5,794	8,873	0.65	-

Source: DR1937, revised 8/22/2013 Marion County death certificates

BRFSS surveys, health risk factors

In 2008-2010, Marion County residents age 65 and older responding to the *Behavioral Risk Factor Surveillance System* survey reported current health behaviors and chronic health conditions (Table 11). ²⁶ County respondents had a greater prevalence than their U.S. peers of

diagnosed hypertension (67% vs. 59.7%), diabetes (25% vs. 20.4%) and stroke (12% vs. 8%). More than 1 in 10 (11%) smoked, a rate higher than national levels and a major risk factor for stroke deaths. ²⁷

In addition, that BRFSS survey found that county seniors had greater rates than their U.S. counterparts of fair or poor health (39% vs. 27%) and lower social support (56% vs. 79.2%). They were more likely to report having greater health care barriers, including lack of health insurance and a usual source of care (87% vs. 95.3%), a deficiency that also limits access to preventive care, such as seasonal flu shots (26% vs. 66%) and timely cancer screening.

Table 11: Marion County and U.S. BRFSS Respondents, Ages 65+ (2008-2010)

BRFSS risk factors and chronic disease prevalence, age 65+	Marion County 2008-2010	U.S. 2010
Chronic disease prevalence: Ever diagnosed with:		
Current asthma (computed asthma status)	10.7%	8.0%
Angina or coronary heart disease	14.9%	13.6%
Stroke	12.3%	8.2%
Heart attack	15.1%	13.0%
Diabetes (excluding pregnancy)	25.4%	20.4%
Chronic disease risk factors		
Overweight (25 <= BMI < 30)	35.9%	39.9%
Obese (BMI >= 30)	25.7%	24.4%
Exercise in past 30 days	66.2%	68.2%
Cholesterol checked, told it was high (2009)	54.9%	53.8%
Consumed fruit/vegetables 5+ times per day (2009)	NA	27.3%
Current smoker	11.1%	8.3%
Quit smoking one day or more in the past year	48.0%	51.2%
Told have high blood pressure (2009)	67.3%	59.7%
Health care access		
Any health care coverage	NA	98.2%
Had one or more personal doctor or health care provider (computed)	86.9%	95.3%
Could not see doctor because of the cost	NA	4.6%
Visited a dentist, dental hygienist or dental clinic within the past year	68.1%	69.0%
Had flu shot within past 12 months	26.4%	66.5%
Ever had a pneumonia vaccination	68.5%	67.5%

Source DR1939, Marion County and U.S. BRFSS survey data

Community Health Assessment Survey, 2012

The 2012 CHA survey found two-thirds (64%) of the Marion County population ages 65+ had been diagnosed with high blood pressure, half had diagnosed high cholesterol levels, 28% reported a diabetes diagnosis, and 1 in 4 (25%) had a diagnosed cardiovascular disease (angina, heart attack or coronary artery disease). Nearly 2 in 3 seniors (60%) had two or more diagnosed conditions; 1 in 4 (26%) had one condition (Table 12).

Table 12: Senior Adults: 2012 CHA Survey, Chronic Disease Prevalence

Ever been diagnosed with	%	95% confidence interval
Hypertension/high blood pressure, not in pregnancy	64	59.6 - 67.6
High blood cholesterol, not in pregnancy	50	45.8 - 54.7
Diabetes or high blood sugar	28	23.6 - 32.2
Heart attack, angina or coronary heart disease	25	20.5 - 28.7
Depression or dysthymia	16	12.4 - 20.4
Current asthma	10	7.5 - 12.5
No chronic condition	14	10.7 - 16.7
One medical condition	26	22.7 - 29.6
Two or more medical conditions	60	56.0 - 64.3

Source: DR1983, 2012 Marion County Community Health Assessment survey, ages 65+. Pink shading indicates areas of concern.

Hospitalizations

The leading causes of Marion County hospitalizations for seniors in 2009-2011 were heart disease, lower chronic respiratory disease (mainly pneumonia), various diseases of the digestive system, injuries and poisonings (mainly fractures), and diseases of the genitourinary system (mainly urinary tract infections). Rates per 10,000 are somewhat lower than U.S. rates for persons age 65 and over for the five leading causes (Table 13).

Table 13: Marion County Hospital Discharge Rates per 10,000, Ages 65+ (2009-2011) compared to U.S. (2010)

Age 65+ hospital rates per 10,000	Marion County (2009-2011)	US (2010)	MC:US
- 1.00 co - 1.00 p. 1.	Rate per 10,000	Rate per 10,000	rate ratio
1. Circulatory diseases (heart disease, stroke)	851	885	1.0
2. Respiratory diseases (pneumonia)	411.4	426.7	1.0
3. Digestive diseases (obstruction, diverticulosis)	276.4	327.8	0.8
4. Injury & poisoning (fractures)	258.8	314.7	0.8
5. Genitourinary system diseases (UTI's)	229.6	259.9	0.9
6. Musculoskeletal disorders (osteoarthritis)	191.5	262.8	0.7
7. Infectious & parasitic diseases (septicemia)	190.1	170.2	1.1
9 Neoplasms (lung)	143.1	129.2	1.1
10. Endocrine & metabolic disorders (diabetes)	116.9	165.4	0.7
All causes, age 65+	3,217	3,352	0.6

Source: DR1941 Discharge Data (2009-2011) and National Hospital Discharge Survey 2010, Vol. 60; Pink shading indicates significantly higher county than U.S. rates (RR>1.0); Green shading indicates better county rates than U.S. rates (RR<1.0).

Stroke and other cerebrovascular events

Like heart disease deaths, stroke mortality has declined by 50% in the county over the past decade in this age group. Cerebrovascular deaths²⁸ are the fourth leading cause of Marion County deaths, averaging about 271 deaths per year, or a rate of 286 deaths per 100,000 population.²⁹ The subclassification of these deaths, averaged over a three-year period, is seen in Figure 1.³⁰

Hemorrhagic events are roughly six times more common than atherosclerotic or infarct events, but strokes, unclassified as to mechanism, make up over half of fatal stroke deaths. Among persons age 65 and older, blacks have a 26% greater chance of dying of cerebrovascular causes

than do whites (at 490 deaths per 100,000 vs. 388 deaths per 100,000 for whites, 2008-2012). There are about 207 deaths due to strokes among whites and 67 deaths among blacks in this age group each year.

Figure 1: Marion County Cerebrovascular Deaths by ICD10 Classification, Ages 65+, 2009-2011

Average of 271 deaths per year

7; 3% • Hemorrhagic events • Infarct events • Stroke, not specified • Cerebral atherosclerosis events and stroke sequelae • Other cerebrovascular events

Source: DR1976 Marion County death certificates

Cancer incidence and mortality

Cancer is the second leading cause of death in county seniors, causing about 1 in 4 deaths.

Four major cancers make up half the mortality and morbidity in the U.S. and Marion County: lung, colon/rectum, prostate and breast. County death rates were 25% to 50% higher than HP2020 objectives for these four leading cancers (Table 14).

Table 14: Marion County Cancer Death Rates per 100,000 Persons (2009-2011), and Healthy People 2020 Objectives

	Marion County	HP2020 objective	MC:HP Ratio
All cancers	208.6	160.6	1.3
Lung	70	45.5	1.54
Female breast	26.1	20.6	1.27
Colorectal	18.4	14.5	1.24
Male prostate	27.1	21.2	1.28

Source: DR1974 and HP2020 Cancer Objectives

For 2005-2009, Marion County's lung cancer and all-site cancer incidence rates (20,489 total cases) and death rates (8,399 deaths) were about 8% higher than the state's (2004-2008).³¹ Both incidence rates and death rates for breast, colon and prostate cancers were similar to the rest of the state.³²

In the 65+ age group, five cancer sites made up about two-thirds of cancer deaths in 2009-2011 (Figure 2). Lung and trachea cancers made up 1 in 3 fatal cancers (32.3% of cancer deaths). The next five cancers each contribute 5% to 10% of cancer deaths (lymphoid, colon-rectal, breast, prostate and pancreatic). Combined with lung cancer, these cancers make up 70% of cancer deaths among county elders.

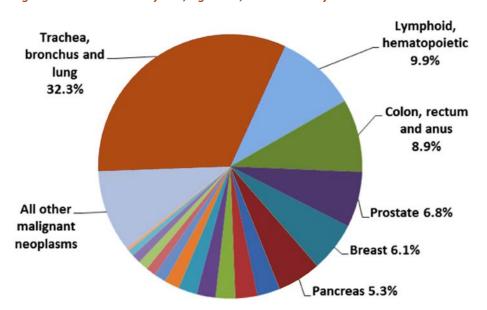


Figure 2: Cancer Deaths by Site, Ages 65+, Marion County 2009-2011

Source: DR1975, Marion County death certificates

Four cancers comprised half of the new cancer cases in the county for the period 2005-2009 (Figure 3). The incidence of all-sites and lung cancer continues to rise in Marion County compared to the state. Prostate, breast and colorectal cancer rates are stable, similar to state incidence rates.³³

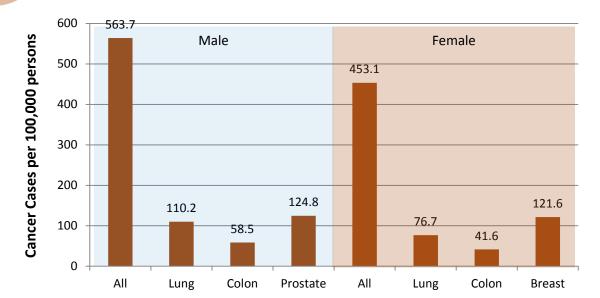


Figure 3: Marion County Cancer Incidence per 100,000 Population, 2005-2009

Source: DR1974 Indiana State Cancer Registry, Report generator, 2012

Lung cancer

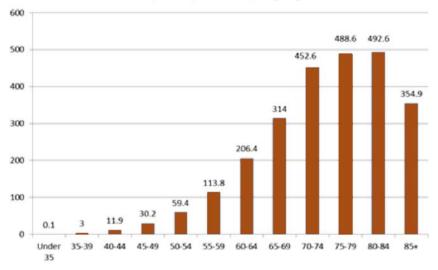
Lung cancer is the leading cause of cancer mortality, contributing over 30% of all cancer deaths. It contributes more deaths than colorectal, breast and prostate cancer combined.³⁴ Over 90% of lung cancer deaths are attributed to cigarette smoking.

Marion County's rate of lung cancer deaths is 54% higher than the HP2020 objective of 45.5 per 100,000 population and is continuing to rise. The greatest lung cancer mortality rates are seen among Marion County residents over 70 years of age, and the lowest rates of mortality occur before age 45 (Figure 4). The five-year survival rate is 52% among cases that are still localized in the lung, but unfortunately these make up only 17.7% of new cases.³⁵

Males in general have a 75% higher mortality rate than women. African-Americans males have approximately 17% greater incidence and 20% greater lung cancer mortality rates than do white males.³⁶ While male mortality due to lung cancer has declined with time as men have progressively stopped smoking, women's rates of lung cancer deaths are stagnant or slightly increasing, as women were historically targeted later by the cigarette industry (Figure 5).³⁷

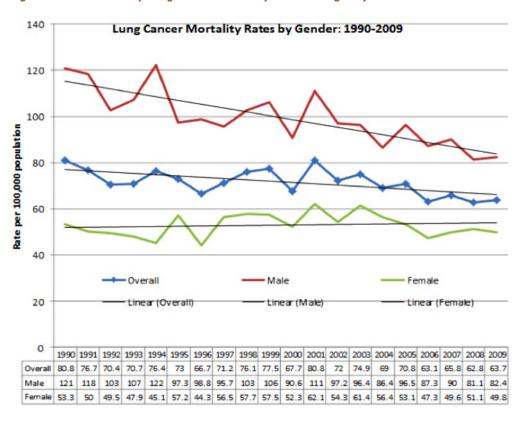
Figure 4: Marion County Lung Cancer Mortality by Age Group, 2003-2007

Marion Co. Lung Cancer Mortality Rate per 100,000 [2003-07], by Age



Source: Lung Cancer in Marion County, Indiana: The leading cause of cancer deaths: 2000-2010. Marion County Public Health Department, October 2010.

Figure 5: Marion County Lung Cancer Mortality: Rate Changes by Gender



Source: Lung Cancer in Marion County, Indiana: The leading cause of cancer deaths: 2000-2010. Marion County Public Health Department, October 2010.

As fewer than 20% of lung cancers are detected at early stages, the five-year probability of survival is only 55% to 67%. The U.S. Surgeon General's office has found that prevention and cessation of smoking is the best practice in reducing new and fatal cases of lung cancer.

State tobacco control programs indicate that the magnitude and rate of change in smoking rates are related to the level and continuity of comprehensive prevention efforts, including targeting reductions in youth initiation, promoting smoking cessation and protecting nonsmokers from tobacco smoke exposure.³⁸

Prostate cancer

Over 2,200 Marion County men suffered from prostate cancers between 2005-2009, for an incidence rate of 124.6 per 100,000 population and a mortality rate of 18.4 per 100,000. It is the second leading cause of cancer death in men following lung cancer.

Two-thirds of prostate cancer cases occur in men over age 60. Men with an affected first-degree relative are two to three times more likely to develop prostate cancer than men without an affected relative. In Indiana, the reported black/white disparity in prostate cancer mortality has declined significantly since 1999, when the rate ratio was 2.5. As of 2008, the ratio has been 1.0 (33.4 deaths per 100,000 population in each group).³⁹

Over three-fourths (77%) of prostate cancers are detected while in early (localized) stages. The five-year survival rate is very high, 98% to 100%. 40 Preventive actions have been controversial. The Prostate Specific Antigen (PSA) test has been found to have many false positives, leaving the digital rectal exam (DRE) the main clinical exam for the disease. 41 Over half (54%) of Marion County men over age 40 have had a PSA test, similar to the U.S. rate. 42

Breast cancer

Nearly 2,880 cases of breast cancer occurred among Marion County women from 2005 through 2009, killing 610 women, for a rate of 26.1 per 100,000 population. It is the second leading cause of cancer death for Marion County women after lung cancer (49.1 per 100,000).

African-American females have similar incidence rates to white women, but they are at increased risk for poor outcomes. They are 48% more likely to die, in part because they are more often diagnosed at later stages and with more aggressive forms of breast cancer. When detected in early stages (before a mass may be felt by a clinical breast exam or when detected early by mammography), the five-year survival rate for localized breast tumors is 98%. In Indiana, 70% of breast cancer cases are diagnosed in situ or at localized stages.

Risk factors include early/late exposure to natural estrogens, hormone replacement therapy, over two alcoholic drinks per day, 45 increased BMI and limited physical activity after age 18, late first pregnancy and lactation history, and familial history of breast cancer. 46

Beginning at the age of 40, screening mammograms are recommended yearly for females and are shown to increase survival rates. Women over age 50 are encouraged to have a mammogram at least every two years.

Colon/rectal cancer

Colorectal cancer is the third most common cause of cancer death among Marion County residents, with an incidence rate of 48.8 per 100,000 population and mortality rate of 18.4 per 100,000.⁴⁷ Males have a higher incidence and mortality rate than females. Over 90% of cases are diagnosed in persons over age 50.⁴⁸

When colorectal cancers are detected at the local stage, the five-year survival rate is 90%. In Indiana from 2004 to 2008, 39% of colorectal cancers were identified in the local stage. Survival rates have increased in the past 20 years due to increased acceptance of colonoscopy or a flexible sigmoidoscopy.

Modifiable risk factors for colon cancer include decreased smoking, less consumption of alcohol and red meats, lower BMIs and increased exercise and fruit and vegetable consumption. Clinical findings of polyps and irritable bowel disease increase a person's risk of colon or rectal cancer.⁴⁹

Cancer screening

The BRFSS offers at least annual county estimates of the prevalence of adults who have met current screening guidelines for various cancers. Table 15 reflects the county's proportion of age-specific groups who have met current U.S cancer screening objectives compared to the U.S. adult population. Although the data are not specific to the age group 65+, on the whole Marion County adults are in line with U.S. rates of cancer screening.

The exception to this pattern is mammography screening among women over age 50, which only once met HP2020 objectives (81.1% of women over 50).⁵¹ County mammography screening rates have gradually been eroding in the past five years.

Table 15: Marion County (2008-2010) and U.S. BRFSS Respondents (2010), and Healthy People 2020 Objectives

Cancer screening: Age-appropriate guidelines	Marion County 2008-10 (%)	U.S. BRFSS respondents, 2010 (%)	HP 2020 (%)
Women ages 50+ that have had a mammogram within the past two years (screening for breast cancer)	71.6	77.9	81.1
Respondents ages 50+ that have had a sigmoidoscopy or colonoscopy (screening for colon or rectal cancer)	68.2	65.2	70.5
Men ages 40+ that have had a PSA test within the past two years (screening for prostate cancer)	54.9	53.2	_
Respondents ages 50+ that have had a blood stool test within the past two years (screening for colon or rectal cancer)	15.0	17.1	_

Source: DR1939 and BRFSS website

Primary Care Access and Management of Chronic Conditions

Having multiple comorbidities makes chronic disease management more complex, but it is critical to keep conditions from progressing and resulting in complications. It is also challenging to monitor levels and avoid potential interactions and side effects. Fortunately, a large majority of Marion County's seniors have health care coverage, 84% have a usual source of care, and nearly all feel welcomed and respected by their provider (Table 16).

However, challenges exist:

- 1 in 4 needs assistance reading medical instructions at least occasionally, whether for reasons of low vision, literacy and/or comprehension. This implies a chance that medication errors may occur in complex poly-pharmacy care regimens.
- At least 11% of the age 65+ CHA survey respondents' household incomes met 100% federal poverty levels.
- 7% to 9% of those age 65+ reported financial difficulty buying all prescriptions or making medical visits when needed, and over 1 in 5 (21%) reported visiting a dentist in pain in the past year.

Table 16: Marion County CHA Survey Respondents, Age 65+: Access to Health Care (2012)

Indicator of health care access	%	95% confidence interval
Have health care coverage	98	97.5 - 99.4
Have one usual health care provider	84	81.7 - 86.9
Feels respected by health care provider	97	94.8 - 98.9
Needs help reading medical instructions (occasionally or more often)	23	18.6-27.4
Did not get health care due to cost, past 12 months	7.0	3.5 - 10.5
Did not fill prescription due to cost, past 12 months	8.6	5.1 - 12.2
Saw dentist due to pain, past 12 months	21	17.2 - 23.9

Source: DR1983, 2012 Marion County Community Health Assessment survey, ages 65+. Pink shading indicates areas of concern.

Primary care control of chronic diseases through timely and consistent medication management, self-care activities, and behavioral changes is considered key to maintaining high quality of life and reducing complications and costly health care utilization. The U.S. Preventive Task Force has set guidelines for frequency of visits for a variety of monitoring tests and medication evaluations for several chronic diseases.

One estimate noted that if all persons with the top 10 leading chronic diseases had their conditions "in control," it would require primary care physicians 3.5 hours/day to perform the required routine evaluations. This is in addition to the 4.6 hours/day demanded by acute care cases in a standard practice. 52. And it doesn't account for over one-third of hypertension and diabetes cases that still need to achieve control of blood pressure or glycated hemoglobin levels, for example. When such chronic diseases are not in control, the time requirement increases threefold.

Solutions to this issue might involve 1) a greater focus on self-management or collaborative care models involving problem solving between patient and provider, and 2) group patient visits to improve patient knowledge and skills. In the first case, only 25% of primary care MDs currently use a collaborative care model in managing chronic disease cases.⁵³ This works well for highly symptomatic diseases such as asthma and arthritis, but has not yet been demonstrated to improve patient outcomes in more asymptomatic diseases such as hypertension and diabetes.⁵⁴

Group visits have been used for instructions for diabetes nutrition and food selection, asthma inhaler use, or arthritis range of motion exercises. All these have been successful, but scheduling difficulties mean relatively few patients can be seen in a clinic setting, or patients must be referred to non-medical sites or providers to receive specialized instruction. Limitations include required referral coordination, patient time and cooperation, and/or uneven insurance coverage for such services.

While some intensive collaborative management interventions improve disease monitoring and medication adherence, improvements in longer term outcomes, such as reductions in hospitalizations, are difficult to show in the community.⁵⁵

From a systems perspective, Bodenheimer and colleagues note that chronic disease patients may be more attuned to a medical vs. a self-management model of care. There also may be barriers in the lack of trained, non-physician educators and Medicare and Medicaid non-payment for the intense management education required by these patients.⁵⁶

High Priority Issue B: Mental Health Burden

Increasing dementia prevalence and mortality rates (including Alzheimer's disease), and increases in depression prevalence in both seniors and their caregivers, create further anxiety and hardship for Marion County seniors (Table 17). The 2011 American Community Survey indicated 38.8% of Marion County residents age 65 and older living in the community had at least one impairment or difficulty, including 10% with a cognitive disability and 17% with problems living independently.

Table 17: Marion County Age 65+ Mental Health Burden: Summary Statistics

Issue	Relevant statistics	Additional information
Depression, age 65+	16% prevalence (CHA, 2012)	17%-18% women, 9%-10% men (National survey, 1998-2006)
Dementia, age 65+	6%-10%, with 75% of those being Alzheimer's disease cases	Up to 81% who meet criteria for dementia are not clinically diagnosed
Alzheimer's disease (AD) deaths	220 per 100,000 deaths (Marion County 2008-2012)	Along with stroke, AD deaths are more common in women (69%) than men (17%). Only leading cause of death that increased in the past decade, mainly among women.
Suicide	0 deaths per 10,000	4 individuals 65+ were admitted to the ED from 2009-2011 in Marion County

Source: DR2062 Summary statistics, age 65+

Depression and Social Isolation

In the 2012 Marion County Community Health Assessment survey, 16% of those age 65 and older reported "ever being diagnosed" with depression.⁵⁷ Depressive symptoms indicate poorer overall well-being in older adults. People who report many depressive symptoms often experience higher rates of physical illness, greater functional disability and higher health-care resource utilization.

Additionally, the age 65+ respondents to the CHA survey reported an average of 2.1 poor mental health days in the previous month. Some 32% of respondents in this age group lived alone, 49% lived in two-person households and nearly 19% lived in multi-person households. Two out of three (66%) had access to sidewalks in their neighborhood and a public transit stop, half were within walking distance of a park or greenway, but only 40% could walk to a grocery, and less than 1 in 4 (23%) could walk to a library or community center for activities and social engagement. Almost all (93%) depended primarily on cars for transportation.

Social and physical isolation are concerns for the 1 in 4 senior respondents (27%) who needed medical equipment for their health conditions. Moreover, 7.7% of respondents reported that poor mental or physical health interfered with their daily activities every day; overall this group reported an average of 4.2 days per month in which they were limited in their activities by mental or physical problems.

Additionally, some 7% did not feel safe in their neighborhoods or that their neighbors were helpful, and 9% reported neighborhood decline in occupied housing and property upkeep.

Nationally, the percentage of adults age 65 and older reporting depressive symptoms has stayed relatively stable, with 17%-18% of women and 9%-10% of men reporting symptoms (1998-2006). However, Indianapolis Hospital Referral Region figures for those eligible for Medicare and diagnosed with depression have risen in the past five years (Table 18).

Table 18: National Medicare Beneficiaries Age 65+ with Full Fee-for-Service Coverage: Indianapolis Hospital Referral Region

	Eligible for Medicaid (%)	With depression (%)
2007	10.36	10.18
2008	10.17	10.78
2009	10.43	11.40
2010	10.49	12.00

Source: Health Indicators Warehouse, National Center for Health Statistics

Mental health risk factors

In 2008-2010, Marion County residents over age 65 responding to the BRFSS survey reported physical and mental health measures (Table 19). Mental health measures are poorer for Marion County seniors compared to their U.S. peers. Almost three times the number of county residents age 65 and older reported frequent (14 or more) days of poor mental health in the past month, and just over one-half reported getting the social and emotional help they needed (56.3% vs. 79.2% of U.S. persons of the same age).

Table 19: Marion County Population Ages 65+ (2008-2010) and U.S. Population Ages 65+ (2010): BRFSS survey

BRFSS risk factors and chronic disease prevalence, age 65+	Marion Co, 2008-2010	U.S. 2010
General and mental health		
Adults who reported fair or poor general health	39.4%	27.0%
Get social and emotional support: always/usually	56.3%	79.2%
14+ days in past month, bad mental health (computed): frequent	20.6%	6.9%
14+ days in past month, bad physical health (computed): frequent	39.6%	17.6%
14+ days in past month, poor (physical or mental) health prevented from doing usual activities	39.4%	9.2%
Activity limitation due to health problem	32.6%	32.2%
Health problem requires special equipment	20.6%	19.1%
Other risk factors		
Adult men who are heavy drinkers (two or more drinks per day)	2.9%	3.7%
Adult women who are heavy drinkers (one or more drinks per day)	2.9%	3.1%

Source: DR1939 and U.S. CSD/BRFSS data website. Pink shading indicates areas of concern.

Depressive symptoms may feature cognitive dysfunction, fragmented sleep and self-care difficulties, which may resolve on proper treatment with anti-depressives. Other, more acute impairments include delirium, often precipitated by underlying illness, or medication poisoning, both of which present as a medical emergency. Unless successfully diagnosed and treated, delirium carries a high risk of mortality.

Dementias

While death rates overall for persons 65 and older have fallen by 40% in the past decade, the single exception is a 20% increase in deaths due to Alzheimer's disease, 58 the fifth leading cause in that population. Alzheimer's disease (AD) and stroke deaths are more likely among women than men (67% and 19%, respectively), especially given the longer life span of women. Both

stroke and Alzheimer's deaths are preceded by increasingly severe dementia and caredependency.

The U.S. 65+ population will increase as a proportion of the all-ages population from 12% in 2000 to 19.6% by 2030, due to declining birth rates and increases in life expectancy. In public health reports, nearly 1 in 5 seniors has a psychiatric disorder, with dementia being one of the most common.

Dementia is a syndrome of memory impairment involving cognitive changes, difficulties in motor functions and recognition of objects, and possible behavioral disturbances. Reversible causes, including vitamin deficiencies, thyroid dysfunction and hydrocephalus, account for about 1 in 10 dementia cases (9%), though those are decreasing in prevalence with increased cognitive screening and treatment.⁵⁹

The majority of seniors do not have dementia; only 6% to 10% of those 65 and older develop dementia. About 5% of those ages 65 to 74 developing Alzheimer's compared to nearly half of those over age 85. It is important to note, however, that Alzheimer's disease is not a normal part of aging.⁶⁰

Alzheimer's makes up 75% of dementia cases; vascular causes make up 15% to 20%. The latter are precipitated by cerebrovascular disease, creating areas of brain-tissue death due to infarction of brain vessels. While sudden onset of symptoms occurs in 80% of vascular dementia cases, 20% exhibit a slow progressive onset of cognitive decline difficult to distinguish from Alzheimer's.⁶¹

Dementia is now recognized as an endpoint in a long continuum of cognitive decline in individuals, with different stages for interventions, including reducing the inflammatory process (which may underlie the development of AD), development of cognitive reserve (through mental activities) and optimizing physical functioning.

Up to 81% of patients who meet criteria for dementia are never clinically diagnosed. This lack of recognition leads to delayed treatment and familial planning for care, as well as clinical issues of cognitive impairment, functional status, underlying health conditions and motor and gait function.

Medicare is encouraging annual evaluation of cognitive function along with other chronic conditions.⁶² Among patients and caregivers, acceptance of dementia screening has not raised issues of stigma, but rather both groups are concerned about adaptation to a progressive loss of function, e.g. loss of driver's license, family emotional suffering and possible depression.⁶³

High Priority Issue C: Support for Independent Living

Table 20: Community Support for Independent Living in Marion County: Summary Statistics

Living condition factors	Relevant statistics
Housing	32% of age >65 live alone, 49% live in 2-person households, 19% live in multiperson households (CHA, 2012)
Caregiving	Among persons over age 60, 21% care for someone else on a regular basis. Most caregivers are over age 50; 2 of 3 are female. Most recipients are women over 77, 60% live in their own home, 20% live with caregivers and ~ 8% of those needing care live in assisted living facilities or nursing homes.
Transportation	93% of MC residents age 65+ use a car for transportation (CHA, 2012)
Living with disability	38.8% of MC residents age 65+ have at least one disability; 26% have difficulty walking, 17% have problems living independently, 14.2% have difficulties hearing, 9.6% have cognitive difficulties, 9.4% have self-care difficulties, 7% have a vision disability (U.S. Census American Community Survey, 2011)
Feasibility of walking & access	66% of CHA respondents age 65+ have access to sidewalks and a public transit stop in their neighborhood, 50% are within walking distance to a park or greenway, 40% can walk to a grocery, 23% can walk to a library or community center (CHA, 2012)

Source: DR2062 Summary Statistics for age 65+

According to the CHA survey, over one-third of Marion County residents age 65 and older live alone (38%) and about half are part of two-person households. About one-fifth live in multiperson households (Table 20).

A 2012 Central Indiana Council on Aging (CICOA) report found 59% of elders felt they can remain in their homes financially, 32% work full or part time, 13% need some home modification for safety or accessibility reasons (31,000+ homes), and 20% will need public transit in the next five years.⁶⁴

In addition, 70% feel safe in their neighborhoods, 75% leave their house every 4-5 days or more often, 45% get moderate physical activity but 34% get no physical activity.

Disabilities, Impairments

The 2011 American Community Survey indicated 38.8% of the over 90,000 Marion County residents age 65 and older had at least one impairment or difficulty.⁶⁵ Over 1 in 4 (26%) had difficulty walking, 17% had problems living independently, 14.2% had difficulty hearing, 1 in 10 had cognitive difficulties (9.6%) and self-care difficulties (9.4%), and 7% had a vision disability (Table 21).

While these figures do not differ from the broader U.S. population, having over 1 in 3 with some form of physical or cognitive disability means increased dependence on voluntary community-based support from either family or friends if aging "in the community" is to become a reality.

Table 21: Disabilities Reported by Adults 65+: Marion County and U.S., American Community Survey 2009-2011

Disabilities reported to the American Community Survey	Marion County 2009-2011	U.S. 2009-2011
	% with disability	%with disability
Total civilian non-institutionalized population	12.6%	12.0%
Population 65 years and over	38.5%	36.8%
With an ambulatory difficulty	26.1%	23.8%
With an independent living difficulty	17.4%	16.2%
With a hearing difficulty	14.2%	15.2%
With a cognitive difficulty	9.6%	9.4%
With a self-care difficulty	9.4%	8.7%
With a vision difficulty	6.5%	6.9%

Source: 2009-2011 Disability Characteristics, American Community 3-years Estimates (S1810),

U.S. Department of Commerce, American Fact Finder,

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk

Family Caregiving

Unfortunately, as the aging population increases over the coming 30 years, the number of family members available to provide care for these older adults is expected to increase by only 25%, at a rate of 0.8% per year. ⁶⁶ Dementia patients increasingly depend on unpaid family caregivers. It is estimated that 1 in 5 U.S. adults over age 18 (19.6%) now cares for at least one older relative over age 50.

Six in 10 U.S. caregivers are in good health, a similar proportion is also employed, 2 in 3 are women, and most are over age 50. Most provide at least 20 hours per week of unpaid care, and the average duration of care is four years.⁶⁷ For those who live with the recipient, caregiving requires on average 43 hours per week. Most recipients of care are women over age 77, of which 6 in 10 live in their own households and 20% live in the caregiver's home.

The needs of caregiving are varied:

- 3 in 4 recipients principally need care because of chronic physical conditions.
- 15% receive care principally because of Alzheimer's disease.
- Over half of caregivers (56%) assist with at least one "activity of daily living" most frequently transferring the recipient from bed to chair, or helping recipient get dressed.
- Overall, approximately 1 in 3 recipients has a mental health issue, confusion or dementia as a secondary cause for needing assistance.⁶⁸

The proportion of care recipients with Alzheimer's disease grew from 8% to 15% from 2004-2009 as the recipient population has grown older. This may also account for the increased use of prescription medication from 85% to 93% of recipients.⁶⁹

Family caregiving has been associated with increased levels of depression and anxiety in caregivers as well as higher use of psychoactive medications, poorer self-reported physical health, compromised immune function and increased mortality.⁷⁰ Over half (53%) of caregivers indicate that a decline in their health compromises their ability to provide care.⁷¹

Most at risk of negative caregiving effects are:⁷²

- Those who did not feel they had any choice in the caregiving role (25%), who are most likely to suffer depression and declines in their own health.
- Those who co-reside with the recipient, who themselves are older and who are least likely to have access to other, paid caregivers.

Over three-quarters (78%) of the nation's adults living in the community and in need of long-term care depend on family and friends (i.e., informal caregivers) as their only source of help, while 14% receive a combination of informal and formal care (i.e., paid help) and only 8% used formal care or paid help only.⁷³ Only 16% of total caregiving hours were paid care for those receiving care in the community (contracted services, professional long-term care), leaving 84% of hours to be provided by informal caregivers (i.e. unpaid labor).⁷⁴ The relationship between the development of caregiver depression and placement of the care recipient in nursing care can be delayed by paid assistance, care management, adult day services and respite care.

It has been estimated that a caregiver for a relative with Alzheimer's disease has average heath care costs of \$4,766 or more per person per year than a non-caregiver.⁷⁵ Over an 18-month study period, there was a 25% increase in use of all types of health services by caregivers.

One in five caregivers has received formal caregiver training, but 75% say they need more information about the role, with over one-third needing information on safety, managing stress, managing time for themselves, and easy activities for the care recipient. Nearly 37% asked for

help from a health professional (physician, nurse or hospital worker), half used the Internet (especially younger and more affluent caregivers) and 20% turned to family and friends.

The mean annual health care cost per care recipient is over \$4,000, with three-quarters of that due to hospitalizations and skilled nursing care. ⁷⁶

Moderate Priority Issues

The following issues also have important impacts on the health of our county's seniors.

Immunizations

Marion County needs to increase awareness and access to immunizations recommended for the age 65+ population, who are often at high risk of acquiring acute diseases. In 2011, 26.4% of those age 65 and older had a recent seasonal influenza shot, and 80% had ever had a pneumonia vaccination.⁷⁷ This means the county rate is somewhat lower than the national rate in seasonal flu coverage but slightly exceeds it in pneumonia coverage, according to national surveys (68% and 65%, respectively).^{78,79}

However, the county does not meet the HP2020 objectives of 90% coverage of the over 65 population for these two vaccines. ⁸⁰ HP2020 also sets a 30% coverage goal for adults over age 60 to have a shingles vaccination. ⁸¹ Current data are not available to assess whether Marion County adults are meeting this prevention goal.

Fall Prevention

Falls may signal increased vulnerability due to underlying illness in the age 65+ population. In those over age 75, falls increase the risk of hip and other fractures, which often precipitate a cascade of greater health care utilization and loss of independence and function.

Nationally, chest pain, contusions, heart disease and pneumonia were the leading causes for all ED visits among those over age 65, collectively making up about 5% to 10% of visits, depending on gender. In Marion County, the principal diagnosis class, "Injury, poisoning and adverse effects of medical treatment," made up 33% of all ED visits, or 13.3 visits per 100 persons (Table 22).82

Table 22: Marion County, Average Annual Injury-Related ED Visits, Ages 65-74 and 75+ (2009-2011)

Average Annual injury-related ED visits (2009-2011)	65-74 years	% of total injury visits	Rate per 10,000	75+ years	% of total injury visits	Rate per 10,000
Total ED injury visits (all causes) 38,284	15,802		3,125	22,483		4,938
Contusion with intact skin surface	2,807	17.8%	555	5,077	22.58%	1,115
Sprains and strains of joints and adjacent muscles	2,472	15.6%	489	2,048	9.11%	450
Fracture of upper limb	1,165	7.4%	230	1,637	7.28%	359
Open wound of upper limb	1,043	6.6%	206	1,372	6.10%	301
Complications of surgical/medical care, not elsewhere classified	942	6.0%	186	1,110	4.94%	244
Certain traumatic complications and unspecified injuries	858	5.4%	170	1,702	7.57%	374
Poisoning by drugs, medicinal and biological substances	228	1.4%	45	212	0.94%	46
Toxic effects of substances chiefly nonmedicinal as to source	145	0.9%	29	88	<1%	19
(E) Accidental falls	523	3.3%	103	710	3.16%	156
(E) Drugs, medicinal & biological substances causing adverse effects in therapeutic use	227	1.4%	45	245	1.09%	54
(E) Other accidents	152	1.0%	30	102	< 1%	22
(E) Surgical and medical procedures as the cause of abnormal reaction of patient	108	<1.0%	21	83	_	18
(E) Suicide and self-inflicted injury	2		0	2		0

(E) = ICD10 coded accidental emergency causes. Source: DR1953 Injury and E-coded visits, Marion County age 65+

Injury is a leading cause of death in elderly adults, and most of these fatal injuries are related to falls. HP2020 seeks to reduce deaths due to falls in persons age 65 and older to 47 deaths per 100,000. By 2010, accidents and injuries ranked 9th among the the top 10 leading causes of death in Americans over age 65, at a rate of 102 deaths per 100,000. In Marion County, accidental death was the 10th leading cause (2008-12), for a rate of 74 deaths per 100,000. While the county rate of overall injuries for seniors is lower than the country's, a catastrophic fall often precipitates a spiral of costly health care use and loss of independence.

Falls account for over 80% of injury-related hospital admissions of patients over 65 years of age. Fractures are the most common (over one-third) and costly of nonfatal injuries; they accounted

for 61% of total nonfatal costs, or \$12 billion nationally. Hospitalizations accounted for nearly two-thirds, and ED visits for 20%, of nonfatal injury costs. National hospitalizations for fall injuries averaged \$17,500 (2005).85

In Marion County, there was an annual average of 523 falls among persons age 65-74 and 710 falls among residents over 75 years of age, as indicated by external cause of injury coding (Ecodes for 2009-2011) (Table 22). Contusions, sprains and fractures aggregated 40% of injury related visits, but not all these injuries may have been the result of falls.

Around 30% of people ages 65 years or older who live in the community, and over 50% of those living in residential care facilities, fall at least once per year, and about half of those who fall, fall repeatedly. This rate rises with age and with functional impairment and disability. Injuries from falls lead to fear of falling, so sedentary behavior, social withdrawal, depression, impaired function and, ultimately, lower quality of life. Only half of older individuals who fall report the episode to their physicians. So

Not all falls lead to injury. Only about 20% of falls need medical attention; of these, 5% result in a fracture and other serious injuries, including lacerations and brain trauma. These injuries increase the risk of early death.⁸⁹ Falls, however, are four times more common in persons over age 75, and white women in this age group are more likely to require nursing home placement following a fall.⁹⁰

Summary and Conclusions

The work group ranked the following as the most critical public health issues for residents age 65 and older:

- Chronic disease management for persons with multiple conditions
- The increasing burden of poor mental health, including high prevalence of dementia (including Alzheimer's disease) and depression
- The need for systemwide measures to support seniors living independently in the community.

Secondary issues include keeping abreast of preventive immunizations and reducing the risk of falls in community-residing seniors. A well-coordinated primary care/public health network could ensure prevention and monitoring of risk factors for this vulnerable population, increasing their independence and quality of life.

The work group recommends a wide audience for this report, including health care providers and health advocacy agencies, academic partners, community leaders and policy makers, and grant makers and foundations (Appendix 6).

Acknowledgments

The Epidemiology staff would like to thank the work group and other contributors for their enthusiasm, expertise and willingness to undertake difficult topics in a very short period of time. Additionally, we thank Franciscan St. Francis Health and their representative, Fred Bagg, for sharing the 2009-2011 county hospital emergency department data for this Community Health Assessment, Orion Bell and CICOA for their organization's annual reports, and Dr. Malaz Boustani, M.D., IU School of Medicine, and his staff for timely Alzheimer's disease information for the report.

Our thanks also to Steven Jacobs, who facilitated meeting schedules, lists of key participants and other tasks by the dozens, and Fairbanks School of Public Health MPH intern Elizabeth Bowman for her quick grasp of needed topics and additional material for meetings.

Appendix 1: Age 65+ Community Health Assessment Work Group

Name: Representing: (*CHA steering committee)

Lynn Arrowsmith MCPHD, Tobacco Program; Asthma Coalition

Fred Bagg* Franciscan St Francis Health

Orion Bell* Central Indiana Council on Aging (CICOA)

Christopher Callahan, MD IU School of Medicine, Gerontology

Anita Gaillard ISDH; Alzheimer's Association

Sheila Guenin HHC, Long Term Care

Cora Hartwell IU School of Medicine, General Medicine and Geriatrics

Kim Irwin Health by Design

Pamela Pikus Arthritis Foundation

Jo Rhodes MCPHD, Healthy Homes

Douglas Miller, MD Center on Aging

Mandla Moyo AARP

Dennis Slaughter Indianapolis Department of Metropolitan Development

Alex Slobosky* Indianapolis Congregation Action Network (IndyCAN!)

Christopher Weaver, MD* Eskenazi Health, Primary Care Services

Krystal Williams, Ph.D. Butler University, School of Pharmacy

Judy Whorton MCPHD, Preventive Care, Seniors

James Whitehead American College of Sports Medicine

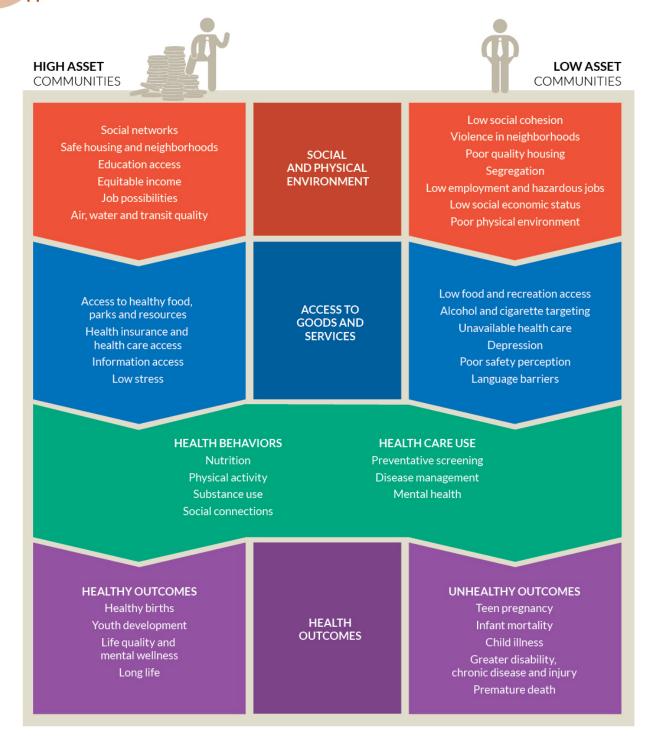
Staff:

Joe Gibson, Ph.D. Department of Epidemiology, Director

Millie Fleming-Moran, Ph.D. Department of Epidemiology, Epi Researcher

Neela Gala Department of Epidemiology

Appendix 2: Social Determinants of Health



Source: Marion County Public Health Department (2012). Marion County 2012 Community Health Assessment.

Appendix 3: 2012 Marion County: County Health Rankings

	Marion County	Margin of error	National benchmark*	Indiana	Rank among 92 counties
Health Outcomes					82
Mortality				_	81
<u>Premature death (Years of Potential Life Lost)</u>	9,229	9,008-9,450	5,466	7,687	
Morbidity					75
Poor or fair health	18%	17-19%	10%	16%	
Poor physical health days	3.6	3.4-3.9	2.6	3.6	
Poor mental health days	3.8	3.6-4.1	2.3	3.6	
Low birth weight	9.2%	9.0-9.4%	6.0%	8.1%	
Health Factors					85
Health Behaviors					70
Adult smoking	26%	24-27%	14%	24%	
Adult obesity	30%	29-32%	25%	31%	
Physical inactivity	26%	25-28%	21%	27%	
Excessive drinking	16%	15-18%	8%	16%	
Motor vehicle crash death rate	12	11-13	12	15	
Sexually transmitted infections	753		84	341	
Teen birth rate	67	66-68	22	44	
Clinical Care					19
Uninsured	18%	17-19%	11%	16%	
Primary care physicians	602:1.0		631:1.0	889:1.0	
Preventable hospital stays	74	72-75	49	78	
<u>Diabetic screening</u>	81%	79-82%	89%	82%	
Mammography screening	63%	62-66%	74%	64%	
Social & Economic Factors					91
High school graduation	81%			84%	
Some college	58%	57-59%	68%	58%	
<u>Unemployment</u>	10.0%		5.4%	10.2%	
Children in poverty	31%	28-34%	13%	22%	
Inadequate social support	23%	22-25%	14%	20%	
Children in single-parent households	45%	44-47%	20%	32%	
Violent crime rate	1,155		73	367	
Physical Environment					
Air pollution-particulate matter days	7		0	2	
Air pollution-ozone days	7		0	3	
Access to recreational facilities (% population)	10%		16	10	
Limited access to healthy foods (%population)	5%		0%	7%	
Fast food restaurants (% of total restaurants)	55%		25%	50%	

Source: DR1724 County Health Rankings wenbsite, 2012

Appendix 4: Mortality Tables, Rates by Gender and Race

Marion County Age Group 65+: Male Mortality Rate Change, 1998-2002 to 2008-2012

Marion County ranked cause of death Males age 65+	2008-2012 Rate per 100,000	1998-2002 Rate per 100,000	Rate ratio	10 year average change in rates +/-
1. Malignant neoplasms	1,651	2,621	0.63	
2. Diseases of the heart	1,608	2,949	0.55	
3. Chronic lower respiratory diseases	539	752	0.72	
4. Cerebrovascular diseases	309	596	0.52	
5. Nephritis, nephrotic syndrome & nephrosis	163	206	0.79	
6. Alzheimer's disease	157			1
7. Diabetes mellitus	150	244	0.61	
8. Influenza & pneumonia	117	281	0.42	
9. Pneumonitis due to solids & liquids	113	144	0.78	
10. Septicemia	106	165	0.64	
Total for age group	6,318	11,037	0.57	

Marion County Age Group 65+: Female Mortality Rate Change, 1998-2002 to 2008-2012

Marion County ranked cause of death Females age 65+	2008-2012 Rate per 100,000	1998-2002 Rate per 100,000	Rate ratio	10 year average change in rates +/-
1. Malignant neoplasms	1,266	2,519	0.50	
2. Diseases of the heart	1,092	1,668	0.65	
3. Chronic lower respiratory diseases	467	561	0.83	
4. Cerebrovascular diseases	367	696	0.53	
5. Nephritis, nephrotic syndrome & nephrosis	262	220	1.19	
6. Alzheimer's disease	130	147	0.88	1
7. Diabetes mellitus	108	237	0.46	
8. Influenza & pneumonia	104	177	0.58	
9. Pneumonitis due to solids & liquids	100	194	0.52	
10. Septicemia	93	128	0.73	
Total for age group	5,311	8,176	0.65	

Mortality Rate Disparities by Race, Age Group 65+: Rate per 100,000 (2008-2012)

Ranked cause of death	White mortality rate (number of deaths)	Black mortality rate (number of deaths)	Hispanic mortality rate (number of deaths)
1	Diseases of heart; 1,442 (4,236)	Malignant neoplasms; 1,573 (1,237)	Diseases of heart; 452 (29)
2	Malignant neoplasms; 1,286 (3,778)	Diseases of heart; 1,430 (1,124)	Malignant neoplasms; 343 (22)
3	Chronic lower respiratory diseases; 559 (1,643)	Cerebrovascular diseases; 393 (309)	Nephritis, nephrotic syndrome & nephrosis; 171 (11)
4	Cerebrovascular diseases; 338 (994)	Chronic lower respiratory diseases; 337 (265)	Cerebrovascular diseases; 171 (11)
5	Alzheimer's disease; 222 (651)	Alzheimer's disease; 244 (192)	Influenza & pneumonia; 94 (6)
6	Nephritis, nephrotic syndrome & nephrosis; 131 (384)	Diabetes mellitus; 201 (158)	Diabetes mellitus; 94 (6)
7	Influenza & pneumonia; 122 (358)	Nephritis, nephrotic syndrome & nephrosis; 192 (151)	Intentional self-harm (suicide); 47 (3)
8	Diabetes mellitus; 101 (296)	Septicemia; 128 (101)	Pneumonitis due to solids & liquids; 47 (3)
9	Accidents; 98 (288)	Essential hypertension and hypertensive renal disease; 84 (66)	Chronic lower respiratory diseases; 47 (3)
10	Atherosclerosis; 98 (288)	Influenza & pneumonia; 83 (65)	Alzheimer's disease; 47 (3)
Total rate (number)	5,814 (17,081)	5,992 (4,711)	2,011 (129)

Mortality Disparities by Gender, Age Group 65+ : 2008-2012

Marion County ranked cause of death	Male (2008-2012) Rate/100,000 (deaths averaged over 5-year period)	Female (2008-2012) Rate/100,000 (average deaths/5 years)
1	Malignant neoplasms; 1,651 (2,551)	Diseases of heart; 1,266 (2,934)
2	Diseases of heart; 1,608 (2,485)	Malignant neoplasms; 1,092 (2,531)
3	Chronic lower respiratory diseases; 539 (832)	Chronic lower respiratory diseases; 467 (1,083)
4	Cerebrovascular diseases; 309 (478)	Cerebrovascular diseases; 367 (851)
5	Nephritis, nephrotic syndrome & nephrosis; 163 (252)	Alzheimer's disease; 262 (608)
6	Alzheimer's disease; 157 (242)	Nephritis, nephrotic syndrome & nephrosis; 130 (301)
7	Diabetes mellitus; 150 (232)	Influenza & pneumonia; 108 (250)
8	Influenza & pneumonia; 117 (181)	Atherosclerosis; 104 (240)
9	Pneumonitis due to solids & liquids; 113 (174)	Diabetes mellitus; 100 (231)
10	Septicemia; 106 (164)	Septicemia; 93 (215)
Total rate (number)	6,318 (9,761)	5,311 (12,307)

Appendix 5: Marion County Medicare Hospitalizations

Major Categories of Care and Average Charges and Payments (2011)

CMS average costs for Medicare patients, Marion County Mean hospital charges and payments for all DRGs in Indianapolis by volume	INDIANAPOLIS			
Diagnosis related group (DRG)	Total Discharges	Category totals	Average Charges	Average Payment
039 - EXTRACRANIAL PROCEDURES W/O CC/MCC	281		28,146	6,731
057 - DEGENERATIVE NERVOUS SYSTEM DISORDERS W/O MCC	157		19,453	7,361
064 - INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION W MCC	383		36,629	13,611
065 - INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION W CC	516		26,506	8,439
066 - INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION W/O CC/MCC	225	Stroke/TIA	20,417	6,016
069 - TRANSIENT ISCHEMIA	293	1,417	19,259	5,248
074 - CRANIAL & PERIPHERAL NERVE DISORDERS W/O MCC	78		29,344	7,994
101 - SEIZURES W/O MCC	304		14,352	5,449
149 - DYSEQUILIBRIUM	101		17,413	4,484
176 - PULMONARY EMBOLISM W/O MCC	151		22,124	7,635
177 - RESPIRATORY INFECTIONS & INFLAMMATIONS W MCC	231		40,134	13,401
178 - RESPIRATORY INFECTIONS & INFLAMMATIONS W CC	201		25,206	10,350
189 - PULMONARY EDEMA & RESPIRATORY FAILURE	511		25,683	8,964
190 - CHRONIC OBSTRUCTIVE PULMONARY DISEASE W MCC	532		23,248	8,102
191 - CHRONIC OBSTRUCTIVE PULMONARY DISEASE W CC	593	COPD	18,949	7,015
192 - CHRONIC OBSTRUCTIVE PULMONARY DISEASE W/O CC/MCC	359	1,484	14,741	5,452

CMS average costs for Medicare patients, Marion County Mean hospital charges and payments for all DRGs in Indianapolis by volume	INDIANAPOLIS			
Diagnosis related group (DRG)	Total Discharges	Category totals	Average Charges	Average Payment
193 - SIMPLE PNEUMONIA & PLEURISY W MCC	474		27,824	10,010
194 - SIMPLE PNEUMONIA & PLEURISY W CC	643	Pneumonia	22,524	7,157
195 - SIMPLE PNEUMONIA & PLEURISY W/O CC/MCC	203	1,320	14,339	5,150
202 - BRONCHITIS & ASTHMA W CC/MCC	100		16,028	7,202
203 - BRONCHITIS & ASTHMA W/O CC/MCC	21		15,975	5,435
207 - RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT 96+ HOURS	225		98,542	36,675
208 - RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT <96 HOURS	358		46,065	16,215
238 - MAJOR CARDIOVASC PROCEDURES W/O MCC	324		75,774	21,483
243 - PERMANENT CARDIAC PACEMAKER IMPLANT W CC	188		58,421	16,720
244 - PERMANENT CARDIAC PACEMAKER IMPLANT W/O CC/MCC	205		47,513	13,004
246 - PERC CARDIOVASC PROC W DRUG-ELUTING STENT W MCC OR 4+ VESSELS/STENTS	182		80,151	22,743
247 - PERC CARDIOVASC PROC W DRUG-ELUTING STENT W/O MCC	871	Cardio-	59,255	14,110
249 - PERC CARDIOVASC PROC W NON-DRUG- ELUTING STENT W/O MCC	459	pacemaker/ stents	52,954	11,644
251 - PERC CARDIOVASC PROC W/O CORONARY ARTERY STENT W/O MCC	271	1,783	55,096	11,897
252 OTUED VACCUU AD DDC 055	250		22.5=5	22.5=5
252 - OTHER VASCULAR PROCEDURES W MCC	258		82,875	22,350
253 - OTHER VASCULAR PROCEDURES W CC	279		54,943	17,213
254 - OTHER VASCULAR PROCEDURES W/O CC/MCC	204		41,323	11,036
280 - ACUTE MYOCARDIAL INFARCTION, DISCHARGED ALIVE W MCC	291		36,967	12,510
281 - ACUTE MYOCARDIAL INFARCTION, DISCHARGED ALIVE W CC	223		25,780	8,722

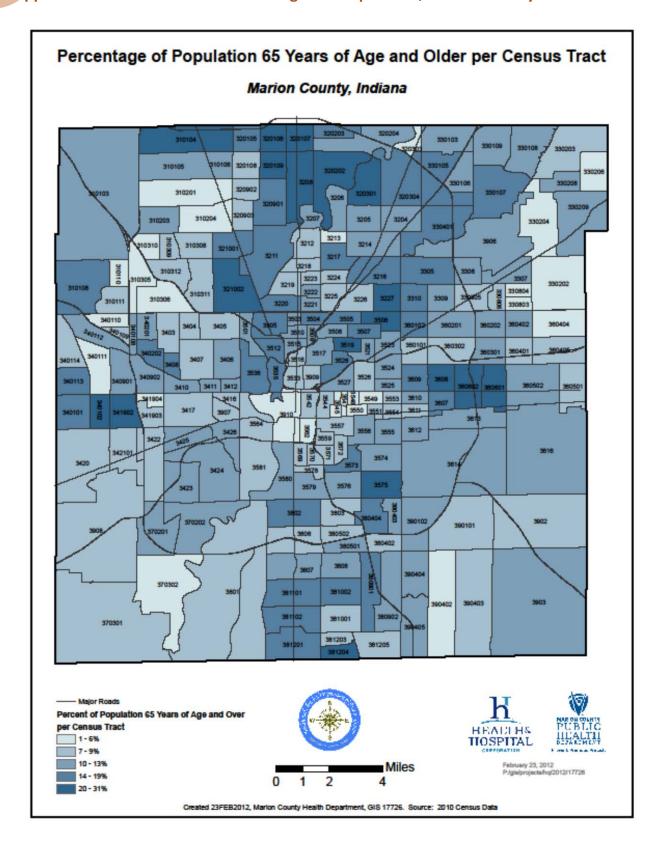
CMS average costs for Medicare patients,	INDIANAPOLIS			
Marion County Mean hospital charges and payments for all DRGs in Indianapolis by volume				
Diagnosis related group (DRG)	Total Discharges	Category totals	Average Charges	Average Payment
282 - ACUTE MYOCARDIAL INFARCTION, DISCHARGED ALIVE W/O CC/MCC	71		24,900	4,961
286 - CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH W MCC	179	MI/ catheterization	46,564	13,153
287 - CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH W/O MCC	786	1,550	30,523	7,734
291 - HEART FAILURE & SHOCK W MCC	765		28,814	9,835
292 - HEART FAILURE & SHOCK W CC	1,175	Congestive Heart Failure	20,282	6,790
293 - HEART FAILURE & SHOCK W/O CC/MCC	341	2,281	14,197	4,593
300 - PERIPHERAL VASCULAR DISORDERS W CC	204		18,624	7,058
301 - PERIPHERAL VASCULAR DISORDERS W/O CC/MCC	55		18,876	5,239
303 - ATHEROSCLEROSIS W/O MCC	130		14,491	3,980
305 - HYPERTENSION W/O MCC	99		14,389	4,660
308 - CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W MCC	328		26,517	8,560
309 - CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W CC	579		16,480	5,818
310 - CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W/O CC/MCC	558	Arrythmias	12,905	3,896
312 - SYNCOPE & COLLAPSE	654	2,119	15,973	4,789
313 - CHEST PAIN	564		14,609	3,724
314 - OTHER CIRCULATORY SYSTEM DIAGNOSES W	321		40,014	13,561
315 - OTHER CIRCULATORY SYSTEM DIAGNOSES W	132		22,881	8,024
329 - MAJOR SMALL & LARGE BOWEL PROCEDURES W MCC	206		104,544	35,797
330 - MAJOR SMALL & LARGE BOWEL PROCEDURES W CC	262		57,374	18,837
372 - MAJOR GASTROINTESTINAL DISORDERS & PERITONEAL INFECTIONS W CC	124		25,162	8,725
377 - G.I. HEMORRHAGE W MCC	211		32,055	12,870

CMS average costs for Medicare patients, Marion County Mean hospital charges and payments for all DRGs in Indianapolis by volume	INDIANAPOLIS			
Diagnosis related group (DRG)	Total Discharges	Category totals	Average Charges	Average Payment
378 - G.I. HEMORRHAGE W CC	538		21,087	7,267
379 - G.I. HEMORRHAGE W/O CC/MCC	107		14,207	4,974
389 - G.I. OBSTRUCTION W CC	209		21,009	6,451
390 - G.I. OBSTRUCTION W/O CC/MCC	105		14,701	5,153
391 - ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS W MCC	244		24,209	8,859
392 - ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS W/O MCC	879		17,262	5,296
394 - OTHER DIGESTIVE SYSTEM DIAGNOSES W CC	235		20,872	7,470
418 - LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W CC	90		43,169	12,805
419 - LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W/O CC/MCC	63		33,739	8,392
439 - DISORDERS OF PANCREAS EXCEPT MALIGNANCY W CC	127		26,135	7,877
460 - SPINAL FUSION EXCEPT CERVICAL W/O MCC	424		96,547	28,594
469 - MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W MCC	103	Hip replacement	72,693	23,416
470 - MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W/O MCC	1,579	1,682	48,794	14,640
473 - CERVICAL SPINAL FUSION W/O CC/MCC	137		57,312	14,548
480 - HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W MCC	76	All other	82,564	22,893
481 - HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W CC	325	hip procedures	46,118	12,676
482 - HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W/O CC/MCC	48	449	41,677	10,844
491 - BACK & NECK PROC EXC SPINAL FUSION W/O CC/MCC	197		31,104	7,157
536 - FRACTURES OF HIP & PELVIS W/O MCC	47		14,058	4,223
552 - MEDICAL BACK PROBLEMS W/O MCC	224		19,908	5,485

CMS average costs for Medicare patients,	INDIANAPOLIS			
Marion County Mean hospital charges and payments for all DRGs in Indianapolis by volume				
Diagnosis related group (DRG)	Total Discharges	Category totals	Average Charges	Average Payment
563 - FX, SPRN, STRN & DISL EXCEPT FEMUR, HIP, PELVIS & THIGH W/O MCC	26		20,256	5,741
602 - CELLULITIS W MCC	74		33,852	10,856
603 - CELLULITIS W/O MCC	439		18,094	5,895
638 - DIABETES W CC	214	Diabetes	17,386	6,124
640 - MISC DISORDERS OF NUTRITION, METABOLISM, FLUIDS/ELECTROLYTES W MCC	343		23,251	8,142
641 - MISC DISORDERS OF NUTRITION, METABOLISM, FLUIDS/ELECTROLYTES W/O MCC	491	1,048	14,313	4,871
682 - RENAL FAILURE W MCC	468	Renal failure	32,157	12,450
683 - RENAL FAILURE W CC	679		20,027	7,251
684 - RENAL FAILURE W/O CC/MCC	101	1,248	14,239	5,001
689 - KIDNEY & URINARY TRACT INFECTIONS W MCC	287		21,296	8,367
690 - KIDNEY & URINARY TRACT INFECTIONS W/O MCC	677		16,505	5,415
698 - OTHER KIDNEY & URINARY TRACT DIAGNOSES W MCC	117	Kidney/UTIs	35,863	13,409
699 - OTHER KIDNEY & URINARY TRACT DIAGNOSES W CC	184	1,265	23,348	7,477
811 - RED BLOOD CELL DISORDERS W MCC	62		43,267	12,639
812 - RED BLOOD CELL DISORDERS W/O MCC	317		17,916	5,773
853 - INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE W MCC	242		107,558	41,575
870 - SEPTICEMIA OR SEVERE SEPSIS W MV 96+ HOURS	183		126,547	45,406
871 - SEPTICEMIA OR SEVERE SEPSIS W/O MV 96+ HOURS W MCC	1,487	Septicemia	40,058	13,968
872 - SEPTICEMIA OR SEVERE SEPSIS W/O MV 96+ HOURS W/O MCC	462	2,132	22,491	8,279

CMS average costs for Medicare patients, Marion County Mean hospital charges and payments for all DRGs in Indianapolis by volume	INDIANAPOLIS			
Diagnosis related group (DRG)	Total Discharges	Category totals	Average Charges	Average Payment
		Psychoses		
885 - PSYCHOSES	686	686	16,333	9,248
897 - ALCOHOL/DRUG ABUSE OR DEPENDENCE W/O REHABILITATION THERAPY W/O MCC	91		19,802	5,477
917 - POISONING & TOXIC EFFECTS OF DRUGS W MCC	133	Alcohol/drug poisonings	23,947	10,523
918 - POISONING & TOXIC EFFECTS OF DRUGS W/O MCC	148	281	13,948	4,765
948 - SIGNS & SYMPTOMS W/O MCC	183		16,181	5, 192
Source: DR1985, CMS hospitalizations age 65+				

Appendix 6: 2010 Distribution of the Age 65+ Population, Marion County



Appendix 7: Age 65+ CHA Report Dissemination List: Suggested Contacts

1) CHA participants: (Executive Summary and link to full report)

Work group members

Steering committee members

2) Health care providers and health advocacy agencies:

All hospital systems (see steering committee list with attention to health assessment planning and gerontology programs)

Central Indiana Nursing Home Association

Alzheimer's Association

Arthritis Association

I Alpha Assisted Living Coalition

Home Care Task Force

Association for Home and Hospice Care (advocacy; evaluation of in home care needs)

Visiting Nurse Association

Little Red Door agency—cancer and caregiving advocacy for low income

Medical and other health professional societies

IN Primary Care Association

Mental Health and Aging coalition—a local arm of Mental Health America of Indiana

IN Dementia Network, IU School of Medicine (Alzheimer's disease); Healthy Aging program

Veteran's Association. Veteran's Assistance Center/Homeless Veterans.

Medicare Advantage—also ACOs—for planning for activities

3) Grant makers/foundations:

United Way—Community Planning Division (community priorities)

Central Indiana Community Foundation (CICF)

4) Community leaders and policy makers:

Front Porch Alliance--City of Indianapolis

State and Indianapolis Chambers of Commerce

Indianapolis Housing Agency—housing safety/smoke free housing.

Indiana Neighborhood Resource Center

Indiana Minority Health Coalition

Top 10 by (20)25 Coalition – area healthy living coalition

AARP—Safe Streets promotion; naturally occurring retirement areas

Elders at the Table coalition (EAT)

Aging-In-Place Coalition "Communities for a Lifetime"

Labor unions

Generations Project

5) Academic partners:

U Indy Center for Aging

CHEP: Promote findings via monthly newsletter to providers and link to website. Community

Translational Science Institute (CTSI) also has newsletter to four campuses (IU, IUPUI, Purdue and

Notre Dame)—for medical researchers

Osteopathy OD program at Marion University

Fairbanks School of Public Health (IUPUI)



¹ From: Healthy People.gov http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39

"Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Conditions (e.g., social, economic, and physical) in these various environments and settings have been referred to as 'place.' In addition... the patterns of social engagement and sense of security and well-being are also affected by where people live. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins. Understanding the relationship between how population groups experience 'place' and the impact of 'place' on health is fundamental to the social determinants of health—including both social and physical determinants."

² DR1983 Community Health Assessment survey, Marion County ages 65+.

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk

⁴ See Note 1. From: Healthy People.gov

http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39

⁵ From: Stats Indiana-- 2010 Census Data, Counties, U.S. Census Bureau on February 10, 2011.

http://www.stats.indiana.edu/topic/census.asp

⁶ RWJF County Health Rankings website, Marion County, 2012.

http://www.countyhealthrankings.org/#app/indiana/2012/marion/county/1/overall

⁷ DHHS, Community Health Status Indicators (CHSI) 2009, Marion County, IN.

http://communityhealth.hhs.gov/Demographics.aspx?GeogCD=18097&PeerStrat=3&state=Indiana&county=Mario

- n Peer Midwestern urban counties are Louisville (Jefferson Co.) KY, Cincinnati (Hamilton Co.) OH, Columbus (Franklin Co) OH, Nashville (Davidson Co.) TN and Milwaukee (Milwaukee Co.) WI, as suggested by the CHSI website, above.
- ⁸ HP2020 NWS-9. Reduce the proportion of adults who are obese. Baseline: 33.9 percent of persons ages 20 years and older were obese in 2005–2008 (age adjusted to the year 2000 standard population). Target: 30.5 percent ⁹ TU-1 Reduce tobacco use by adults TU-1.1 Reduce cigarette smoking by adults. Baseline: 20.6 percent of adults aged 18 years+ and current cigarette smokers (age adjusted to the year 2000 standard population) Target: 12.0 percent.
- ¹⁰ HP2020 PA-1. Reduce the proportion of adults who engage in no leisure-time physical activity. Baseline: 36.2 percent of adults engaged in no leisure-time physical activity in 2008 (age adjusted to the year 2000 standard population). Target: 32.6 percent
- ¹¹ HP2020 SA14.3. Adults over 18 who binge drink in the past month. Baseline: 27.1% percent of adults aged 18 years and older (2008). Target: 24.4 percent.
- 12 http://indyindicators.iupui.edu/docs/MetricsForQualityLife Web.pdf
- ¹³ Source: STATS Indiana.
- ¹⁴ From: Stats Indiana-- 2010 Census Data, Counties, U.S. Census Bureau on February 10, 2011. http://www.stats.indiana.edu/topic/census.asp
- ¹⁵ DR1764 American Community Survey, 2010 1-year Estimates, Table B17001: POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE Universe: Population for whom poverty status is determined.
- ¹⁶ 30% of SSI recipients have SSI as their only source of income. US SSA

http://www.socialsecurity.gov/policy/docs/statcomps/oasdi sc/index.html

- ¹⁷ U.S. Social Security Administration; http://www.socialsecurity.gov/policy/docs/statcomps/oasdi_sc/index.html
 U.S. Social Security Administration; http://www.socialsecurity.gov/policy/docs/statcomps/oasdi_sc/index.html
 OASDI Social Security payment beneficiaries, Marion County 2011.
- ¹⁹Indy Indicators, Poverty http://indyindicators.iupui.edu/keyindicators.aspx
- ²⁰ United Way of Central Indiana (UWCI), 2011. An Assessment of the Status of Family Financial Security Needs And Our Community's Capacity to Respond. Unpublished manuscript. Page 22. "As there is no calculation available for the median income for the UWCI area ..., an annual income of \$35,000 has been used as a stand-in for 80% of median on the chart below that distinguishes between homeowners and renters. The corresponding census

³ U.S. Census Bureau, American Community Survey. Marion County. 2009-2011. Disability Characteristics, ACS 3-year Estimates (S1810), U.S. Department of Commerce, American Fact Finder,

median income for the Indianapolis-Carmel metropolitan area was approximately \$48,500 so \$35,000 is usable as a substitute, although probably results in a conservative count of households affected.... The notion of estimating a "self-sufficiency" income standard has been put forward by several organizations, including the Indiana Business Research Center, over the last several years. The rationale for the estimate is that the Federal Poverty Level does not take into account cost variations from locale to locale or based on ages of family members and is based on an outdated measure of food costs."

- ²¹ Indyindicators.iupui.edu .
- ²² DR1985.
- ²³ DR1983 Community Health Assessment survey, 2012, ages 65+.
- ²⁴ U.S. Census Bureau, American Community Survey. Marion County. 2009-2011. Disability Characteristics, ACS 3-year Estimates (S1810), U.S. Department of Commerce, American Fact Finder,

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk

- ²⁵ This compares the average death rate for the period 1998-2002 with the average death rate for the period 2008-2012.
- ²⁶ DR1939 Marion County BRFSS surveys.
- ²⁷ DR1939 Marion County BRFSS surveys.
- ²⁸ HP2020 objectives: HDS–2 Reduce coronary heart disease deaths. Target: 100.8 deaths per 100,000 population. HDS–3 Reduce stroke deaths. Target: 33.8 deaths per 100,000 population.
- HDS-5.1 Reduce the proportion of adults with hypertension. Target: 26.9 percent.
- HDS-24.1 Reduce hospitalizations of adults aged 65 to 74 years with heart failure as the principal diagnosis.

Target: 8.8 hospitalizations per 1,000 population.

- ²⁹ DR1937.
- ³⁰ DR1976, Marion County death certificates.
- ³¹ "Common Questions about Cancer," http://indianacancer.org/wp-content/uploads/2012/04/ICC-Facts-and-figures-2012-County-Data-and-Maps-pg-17-22.pdf Table 2 and Table 3.
- ³² "Common Questions about Cancer." Ibid.
- ³³ "Common Questions about Cancer," Ibid.
- ³⁴Lung Cancer in Marion County, Indiana: The leading cause of cancer deaths: 2000-2010. M. Fleming-Moran, Ph.D. Marion County Public Health Department, October 2010.
- http://www.mchd.com/pdf/Lung%20Cancer%20report%2011 4 2010 EdBoardfinal trim.htm# ednref36
- ³⁵ Indiana Cancer Facts and Figures 2012, http://indianacancer.org/wp-content/uploads/2012/04/ICC-Facts-and-figures-2012-Lung-Cancer-pg-40-44.pdf
- ³⁶Indiana Cancer Facts and Figures 2012 During 2004–2008 Indiana males, compared to females, had a 60% greater lung cancer incidence rate (102.3 versus 64.1 cases per 100,000 people) and a 75% greater mortality rate (82.4 versus 47 deaths per 100,000 people). This is mainly because a higher percentage of males have been smokers compared to females. In 2010, 23.3% of adult males and 19.3% of adult females reported being current smokers. African-American males in Indiana have approximately 17% greater incidence and 20% greater lung cancer mortality rates than do white males.
- ³⁷ Smoking Attributable Mortality, Years of Potential Life Lost, and Productivity Losses: United States 2000-2004, MMWR November 14, 2008, 57(45):1226-28. The risk of death due to smoking-attributable lung cancer differs by gender: For men over age 55 the attributable risk of death due to lung cancer among smokers exceeds 95% (see Mattson ME et al. 1987).
- 38 Ibid.
- ³⁹Indiana Cancer Facts and Figures 2012, http://indianacancer.org/wp-content/uploads/2012/04/ICC-Facts-and-Figures-2012-Prostate-Cancer-pg-50-53.pdf
- ⁴⁰ Prostate Cancer, Indiana Cancer Facts and Figures 2012,
- ⁴¹ Ibid.
- ⁴² DR1939.
- ⁴³ American Cancer Society. Breast Cancer Facts & Figures 2011–2012. Atlanta, GA. 2011.

www.cancer.org/Research/CancerFactsFigures/index.

44 Ibid.

- ⁴⁵ Singletary KW, Gapstur SM. Alcohol and breast cancer: review of epidemiologic and experimental evidence and potential mechanisms. JAMA. Nov 7 2001;286(17):2143–215.
- ⁴⁶ Breast Cancer, 2012, ISDH.
- ⁴⁷ DR1974.
- ⁴⁸ Colorectal Cancer, 2012, ISDH.
- ⁴⁹ American Cancer Society. Colorectal Cancer Facts & Figures 2011–2013. Atlanta, GA. 2011.

www.cancer.org/Research/CancerFactsFigures/index

- 50 BRFSS 2010 website http://apps.nccd.cdc.gov/brfss/display.asp?cat=IM&yr=2010&qkey=4408&state=UB
- ⁵¹ Healthy People 2020 Summary of Objectives, Cancer, C-16-Breast Cancer Screening.
- ⁵² Ostbye, T, Yarnall, K, Krause, K et al. Is there time for management of patients with chronic diseases in primary care? Ann Fam Med 2005; 3:209-214.
- ⁵³ Bodenheimer, T, Korig, K, Holman, H, and Grumbach, K, Patient self management of chronic disease in primary care. JAMA. 2002;288(19):2469-75.
- ⁵⁴ Landon, BE, Hicks, LS, and O'Malley, AJ et al. Improving management of chronic disease at community health centers. N Engl J Med 2007; 356(9):921-34.
- 55 Ibid.
- ⁵⁶ Bodenmeir, op cit.
- ⁵⁷ DR1983. The brief survey was not able to follow up with whether persons with any chronic disease diagnosis were currently being treated.
- ⁵⁸ DR1937 Alzheimer's disease is the most common form of dementia among older adults. Alzheimer's disease involves parts of the brain that control thought, memory and language and can seriously affect a person's ability to carry out daily activities.
- ⁵⁹ Chapman, DP, Williams, SM, Strine, TW, et al. Dementia and its implications for public health. 2006; Prev Chronic Disease; 3(2):1-13.
- ⁶⁰ CDC: Alzheimer's Disease http://www.cdc.gov/aging/aginginfo/alzheimers.htm
- ⁶¹ Chapman et al, op. cit. Less common forms of dementia include Lewy body dementia and Pick's Disease.
- ⁶² Cordell CB, et al. Alzheimer's and Dementia, 2013: 1-10, in press
- ⁶³ Boustani, M, Justiss, MD, Frame A, et al. Caregivers and Non-caregivers attitudes about dementia screening, J Amer Geriatric Soc, 2011; 59(4):681-86.
- ⁶⁴ CICOA LIFELONG LIVING COMMUNITIES, Report to the Community on Older Adults in Central Indiana from the 2008 Indiana AdvantAge Initiative Survey: http://www.vnsny.org/advantage/survey.html
- ⁶⁵ 2009-2011 Disability Characteristics, American Community 3-years Estimates (S1810), U.S. Department of Commerce, American Fact Finder, Marion County, IN.

http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml

- ⁶⁶ Mack, K. & Thompson, L. Data Profiles, Family Caregivers of Older Persons: Adult Children (2001). Georgetown University, The Center on an Aging Society.
- ⁶⁷ National Alliance for Caregiving, 2009, Caregiving in the U.S. A focused look at those caring for someone age 50 or older. Executive summary. AARP/NAC.
- 68 Ibid.
- ⁶⁹ Ibid.
- ⁷⁰ Kiecolt-Glaser, J. K. & Glaser, R. (2001). Stress and immunity: Age enhances the risks. Current Directions in Psychological Science, 10, 18-21.
- ⁷¹ Family Caregiver Alliance (2005). Fact Sheet: Selected Caregiver Statistics. Available at:

http://www.caregiver.org/caregiver/jsp/content_node.jsp?nodeid=439

- 72 Ibid.
- ⁷³National Alliance for Caregiving, 2014, https://caregiver.org/selected-long-term-care-statistics
- ⁷⁴ Ibid. https://caregiver.org/selected-long-term-care-statistics
- ⁷⁵ National Alliance for Caregiving, Nov. 2011, CAREGIVING COSTS Declining Health in the Alzheimer's Caregiver as Dementia Increases in the Care Recipient, Schultz, R and Cook, Thomas.
- ⁷⁶ Chapman, op.cit.
- ⁷⁷ BRFSS 2011, Marion County report, ISDH.

- ⁷⁸ Euler, Lu P and Singleton, JA., Vaccination coverage among U.S. adults: The 2007 National Immunization Survey, CDC National Centers for Infectious Disease, http://www.cdc.gov/vaccines/stats-surv/nis/downloads/nis-adult-summer-2007.pdf
- ⁷⁹ Recent methodology changes in the U.S. BRFSS estimates due to cell-phone sampling and raking/weighting methods have made comparisons between 2010 and 2011 difficult.
- ⁸⁰ HP2020 IID-12.7. Increase the percentage of noninstitutionalized adults aged 65 years and older who are vaccinated annually against seasonal influenza. Target: 90.0 percent.
- IID-13.1. Increase the percentage of noninstitutionalized adults aged 65 years and older who are vaccinated against pneumococcal disease. Target: 90.0 percent.
- HP2020 IID-14. Increase the percentage of adults who are vaccinated against zoster (shingles). Baseline: 6.7 percent of adults aged 60 years and older in 2009 had received zoster (shingles) vaccine. Target: 30.0 percent.
 Ambulatory Medical Care Survey, 2007 Emergency Department Survey, National Health Statistics Reports, #26, Hyattsville, MD, NCHS. 2010.
- 83. HP2020 IVP-23.2 Prevent an increase in fall-related deaths among adults aged 65 years and older. Baseline: 47.0 deaths per 100,000 population aged 65 years and older were caused by unintentional falls in 2007 (age adjusted to the year 2000 standard population) Target: 47.0 deaths per 100,000 population. Maintain the baseline value
 84 DR1937 Department of Epidemiology, death certificates for residents aged 65+; National Vital Statistics Report, Volume 60, number 4, Table 7, 2012.
- ⁸⁵ Falls Among Older Adults: An Overview. http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html
 http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html
 https://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html
 <a href="https://www.cdc.gov/HomeandRecreationalSafety/
- ⁸⁷ Vellas BJ, Wayne SJ, Romero LJ, Baumgartner RN, Garry PJ. Fear of falling and restriction of mobility in elderly fallers. Age and Ageing 1997;26:189–193.
- ⁸⁸ Hausdorff JM, Rios DA, Edelber HK. Gait variability and fall risk in community—living older adults: a 1—year prospective study. Archives of Physical Medicine and Rehabilitation 2001;82(8):1050—6.
- ⁸⁹ Stevens JA, Corso PS, Finkelstein EA, Miller TR. The costs of fatal and nonfatal falls among older adults. Injury Prevention 2006b;12:290–5.
- ⁹⁰ Falls Among Older Adults: An Overview. http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html

2012 MARION COUNTY COMMUNITY HEALTH SURVEY SUMMARY



2012 Marion County Community Health Survey Summary

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Introduction

In the spring of 2012, the Marion County Public Health Department (MCPHD) convened a steering committee of providers, consumers and experts in the public health field to guide MCPHD in a Community Health Assessment (CHA) process.

The goals of the CHA are to:

- 1) Compare the community health status of Marion County to urban peers and national standards
- 2) Identify important health trends and disparities
- 3) Identify significant causes of poor health
- 4) Prioritize the identified issues.

The CHA initiative produced six age group-specific reports about Marion County, each produced by a work group of experts, advocates and other community members. Based on their knowledge as well as on data from many sources, each work group identified three top priority issues for that age group. The steering committee will then identify the highest priority issues for our community overall.

These findings will be used to develop a Community Health Improvement Plan, again with significant involvement by community members. The Community Health Improvement Plan will describe how our community will address the high priority issues identified in the CHA.

This report is part of the CHA. It presents results from a community survey, which is one of the data sources for the age-specific work groups and the steering committee. The survey content was developed with the advice of the steering committee, faculty from several universities in Indiana and other topical experts. In addition to informing the CHA, the data also provide MCPHD and our partners with uniquely precise and representative information about our community's health.

Methods

From June 1 to Sept. 12, 2012, a 16-minute random sample landline and cellphone survey was conducted among 5,013 Marion County residents age 18 or older. The purpose of the survey was to assess community health needs, access to health care and health risk factors. Most survey questions were taken from standard instruments, including the CDC's Behavioral Risk Factor Surveillance System questionnaire and the

National Health Interview Survey. Nearly 6% of all interviews were conducted in Spanish, and 30% of the sample was conducted with cellphones.

In this Survey Summary, the numbers reported are the percent of those who answered the question, excluding respondents who responded "don't know" or refused to answer the item. All items had a response rate of at least 95% except where noted. The percentages in the following tables may not sum to 100% due to rounding. A copy of the questionnaire is found in Appendix B.

Children's Survey Section (Ages 5-17)

This is MCPHD's first countywide representative survey of school-age children's health. From each household with 5- to 17-year-old children, a child was randomly selected, and the respondent was questioned about that child. Data from the 1,348 households with school-age children were weighted to represent all county children ages 5 to 17 years. Of the 1,348 adult respondents, 80% were the child's primary caregiver.

Child Weight Status

Overall, 30% of children ages 5-17 were overweight and 21% were at risk of becoming overweight. The percentage obese is similar to the U.S. rate for school-age children in the United States (19%). The percentage obese is similar to the U.S. rate for school-age children in the United States (19%).

In 2005, MCPHD worked with public schools in the county to measure children's height and weight. That study found that 22% were overweight and 18% were at risk of becoming overweight. So, in the seven years from 2005 to 2012, the portion of overweight children in Marion County increased from about 2 in 10 to 3 in 10, and the proportion who were overweight or at risk of becoming overweight increased from 4 in 10 to 5 in 10.

¹ Overweight and at-risk-of-overweight categories are based on CDC age/gender specific growth charts for

² Ogden, C. et al. 2010, Health_E Stat, Prevalence of Obesity Among Children and Adolescents: United States, Trends 1963–1965 Through 2007–2008.

Ogden, C et al. 2010 NHANES

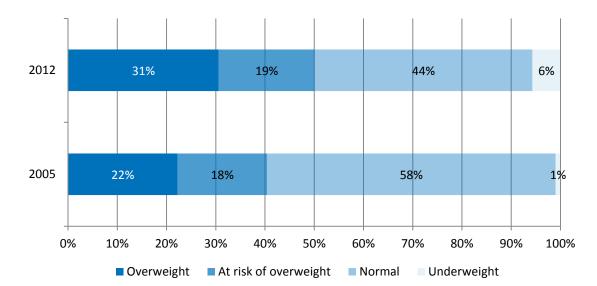


Figure 1: Overweight among 5- to 17-year-olds, Marion County, 2005 & 2012

Child Health Care Access

Overall, 7% of Marion County children had no health care insurance coverage, similar to the percent uninsured in the United States.³ Among children with health care coverage, 48% received health care through Medicaid.

One in 10 children (11%) did not have a primary health care provider. This is over twice the rate of 4.7% or less for school-age children in the United States (NHIS, 2011).

³ Summary Health Statistics for U.S. Children: National Health Interview Survey, 2011, Series 10, Number 254, December 2012. http://www.cdc.gov/nchs/data/series/sr 10/sr10 254.pdf

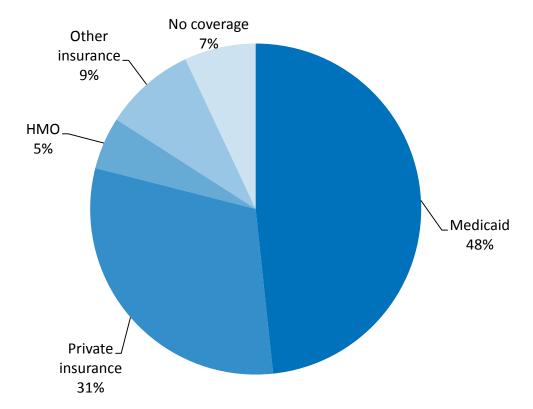


Figure 2: Health care coverage type among 5- to 17-year-olds, Marion County, 2012

Emergency Room Use

One in four children (26%) had one (18%) or more (8%) emergency department (ED) visits in the previous 12 months. This is about 60 percent greater than the national proportion using the ED at least once in the past year (16%, NHIS 2011).⁴ On average, the surveyed population had just less than one-half (0.4) ED visit per person.

Dental Visits

Over 81% of children were reported to have had a dental visit in the past 12 months.

Health Status

The adult respondent was asked if a health care provider had ever diagnosed the child with certain conditions. Based on total responses, 20% of children had asthma, 15% had been diagnosed with attention deficit and/or hyperactivity disorder (ADD or ADHD) and 9% had been diagnosed with depression or anxiety. Fewer than 2% had diabetes or hypertension.

⁴ Summary Health Statistics for U.S. Children: National Health Interview Survey, 2011, Series 10, Number 254, December 2012, Table 16, for ages 0- under 18. http://www.cdc.gov/nchs/data/series/sr 10/sr10 254.pdf

National rates for children ages 5-17⁵ were lower, about half of Marion County's rates for asthma and 80% of county estimates for ADHD.⁶

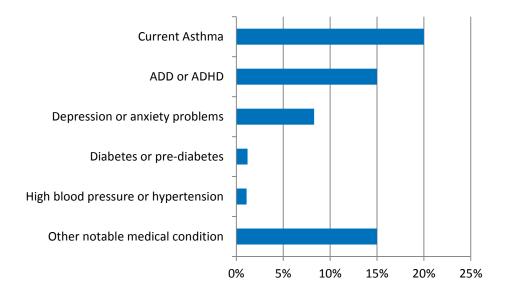


Figure 3: Percent of 5- to 17-year-olds with certain medical conditions, Marion County, 2012

In all, 40% of Marion County children had at least one of these or another significant medical condition, including 14% with more than one significant medical condition.

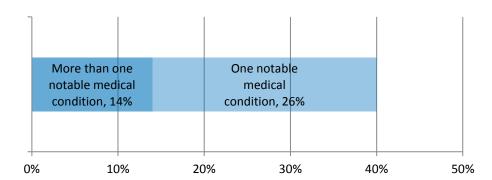


Figure 4: Percent of 5- to 17-year-olds with a notable medical condition, Marion County, 2012

⁵ Summary Health Statistics for U.S. Children: National Health Interview Survey, 2011, Series 10, Number 254, December 2012, finds 9.9% of children 5-11 having current asthma, and 11.9% of those 12-17 having current asthma. http://www.cdc.gov/nchs/data/series/sr 10/sr10 254.pdf

⁶ Ibid., Table 3 for ages 3- under 18.

Other Risk Factors

Screen Time

The American Academy of Pediatrics recommends that children spend less than two hours a day watching TV, playing video games or having other screen time for entertainment.⁷

One in three (35%) Marion County children had less than the two hours of screen time not related to schoolwork. Children in our county had an average of 3.6 hours of screen time per day, not related to school. That includes television, video games and other recreational computing. One in four children (25%) were reported to have five or more hours of screen time per day.

Physical Activity

94% of children were moderately active for at least one hour per day.

Secondhand Smoke Exposure

17% of children lived where someone smoked within the home.

Adult Survey Respondents

Respondents were randomly chosen within contacted households by selecting the adult with the most recent birthdate.

The age and ethnicity distributions reflect those of the county population. The respondents classified themselves: 54% said they were White, non-Latino; 27% Black, non-Latino; and 13% Hispanic. No other single race or ethnicity represented over 1%.

- Age groups: 13% were ages 18-24, 11% were 25-30, 28% were 31-45, 34% were 46-64 and 13% were 65 years old or older.
- English was not the primary language in 16% of households.
- 15.7% of adults did not have a high school or equivalent education.
- At least 1 in 5 households (22%) met 100% of federal poverty guidelines.

⁷ Gentile, DA,Oberg, C, Sherwood, NE, Story, M and Walsh, DA. Well-Child Visits in the Video Age: Pediatricians and the American Academy of Pediatrics' Guidelines for Children's Media Use, Pediatrics 2004;114;1235

Community Environment

Social and Environmental Safety

Respondents were asked their level of agreement with three perceived community safety issues. The majority felt safe in their neighborhoods, and 3 in 4 felt neighbors were willing to help each other. However, 1 in 4 reported an indicator of neighborhood decline: vacant/abandoned properties:

- 92% of adults agreed that they felt safe in their neighborhood.
- 79% felt their neighbors were willing to help each other.
- 25% agreed there were many vacant, abandoned or rundown properties in the neighborhood.

Connected Neighborhoods

- Over 3 in 4 (75% or more) respondents said their neighborhoods had sidewalks that were in good condition, lighted at night and connected to major intersections, destinations or public transit.
- Two-thirds (67%) of respondents could walk to a park or greenway, but only 1 in 3 had a community center or library within walking distance.

Usual Mode of Travel

At least 13% of county residents achieved CDC's moderate level of physical activity per week (150 minutes per week) through "active transit."

 Over 6% walked, less than 2% biked and 5% took public transportation to work or school.

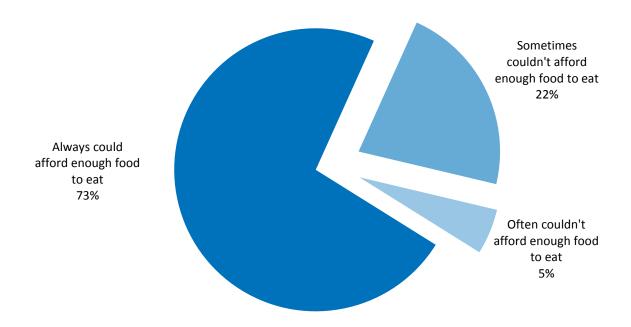
Food Buying and Nutrition Awareness

- Over half of respondents (54%) reported having a full-service grocery within a 10minute walk of their home. Nearly all (97%) shopped at a full-service grocery or discount center.
- Adults had an average of two fast food snacks or meals each week, but 1 in 10 ate fast food at least once per day in the past week.
- About a quarter of adults (27%) often looked for nutrition information at restaurants. Another quarter (23%) looked for such information at least some of the time.

Food Security

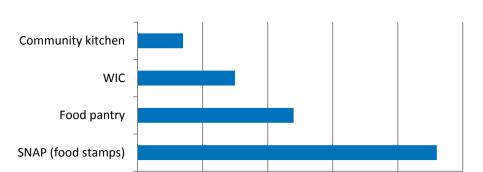
- Over 1 in 4 (27%) households sometimes could not afford enough food to eat, including 5% that often could not afford enough food to eat⁸ in the past year.
- 1 in 4 adults (23%) used food stamps (SNAP).
- About 12% reported using a food pantry in the previous 12 months.

Figure 5: Percent of households by food insecurity in the past 12 months, Marion County, 2012



⁸ The US Department of Agriculture monitors the extent and severity of food insecurity in US households through the food security section of the annual, nationally representative Current Population Survey. In 2006, 10.9% of households experienced food insecurity at some point during the year. Households with children tended to be more affected by food insecurity and were nearly twice as likely to report food insecurity during at least part of the past year as were households with no children under the age of 18 years (15.6% versus 8.5%, respectively). In Widome, R, Eating When There is Not Enough to Eat: Eating Behaviors and Perceptions of Food Among Food-Insecure Youths. Am J Public Health. 2009;99:822–828.

Figure 6: Food support use in the past 12 months, by household, Marion County, 2012



In past 12 months, household used...

Adult Obesity Level

Respondents self-reported their height and weight. From that, their body mass index (BMI) was calculated. BMI values of 18.5 to less than 25 are considered normal, 25 to less than 30 overweight, 30 and over obese and 40 and over morbidly obese.

10%

15%

20%

25%

• 1 in 3 Marion County adults (33%) were obese.

5%

• 2 in 3 (67%) were obese or overweight.

0%

The U.S. has a similar prevalence (65.5%) of obesity or overweight, but slightly less obesity within that group (28% obese, 37.5% overweight in 2011).⁹

Compared with results from Marion County's 2005 Community Health Survey, the 2012 results show a 7 percentage point increase in obesity (up from 26%) and a 6 percentage point increase in obesity or overweight (from 61%). The portion of adults who were morbidly obese increased from 4% to 6% over that seven-year period (Figure 7).

⁹ CDC BRFSS, 2011, http://apps.nccd.cdc.gov/brfss/display.asp?cat=AS&yr=2010&qkey=4416&state=UB

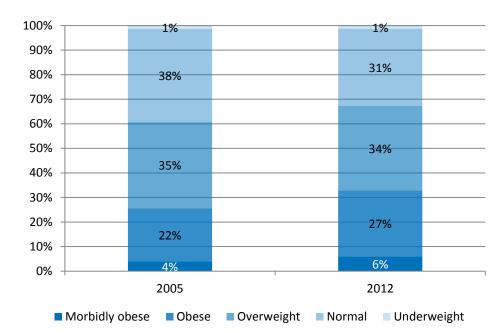


Figure 7: Body mass category, adults 18 years and older, Marion County, 2005 & 2012

Race and Gender Differences

All groups saw some obesity increase. The largest increases in obesity were among Hispanic males and black females, both increasing 9 percentage points.

While obesity ranged from 20% to 30% in other groups, the obesity rate among black females was 38%, with 10% being morbidly obese. In addition, 30% were overweight (Figure 8).

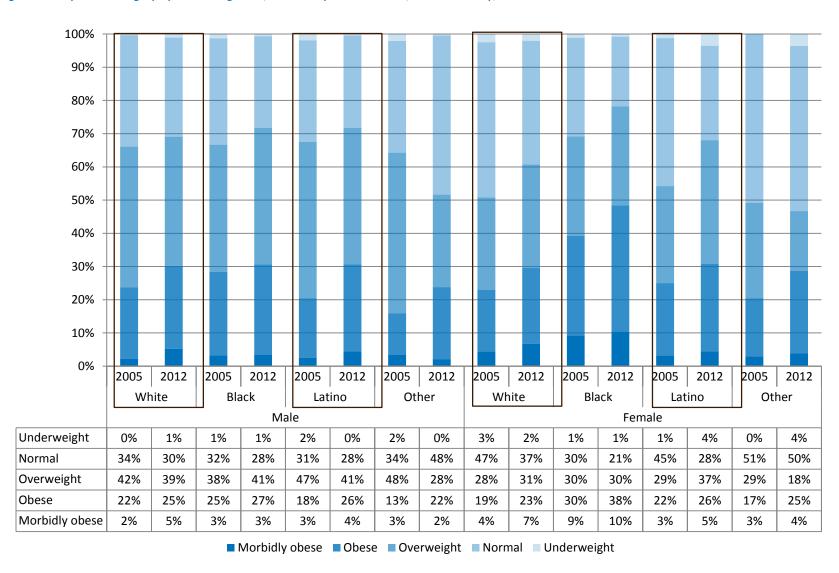
Physical Activity Levels

The CDC recommends that adults get at least 150 minutes of moderately intense physical activity each week (or about 30 minutes per day, five days per week).

Eight out of 10 respondents (81%) reported getting at least 30 minutes of moderate physical activity each day. Similar to U.S. levels, 73% of Marion County adults had some physical activity in the previous 30 days not related to work.¹⁰

¹⁰ CDC BRFSS, 2011, http://apps.nccd.cdc.gov/brfss/display.asp?cat=AS&yr=2010&qkey=4416&state=UB

Figure 8: Body mass category by race and gender, adults 18 years and older, Marion County, 2005 & 2012



Wellness and Reported Health Status

Among the 56% of respondents who were employed, 54% had workplace wellness programs. Where those programs existed, over three-quarters (77%) of respondents said their supervisors supported participation.

One out of five adults (22%) had an average of at least one day per week of restricted activity and poor health. This included:

- The 1 in 20 adults (5.6%) with constantly restricted activity due to poor health.
- The more than 1 in 8 (12%) who required special medical aid or equipment (compared to 8% nationally). 11

Adults had an average of 3.7 hours of screen time per day not related to their work. One in four (25%) reported five or more hours of television viewing per day.

Access to Health Care

More than 3 in 4 adults (77%) had some kind of health care insurance coverage compared to 82% nationally (Figure 9).¹²

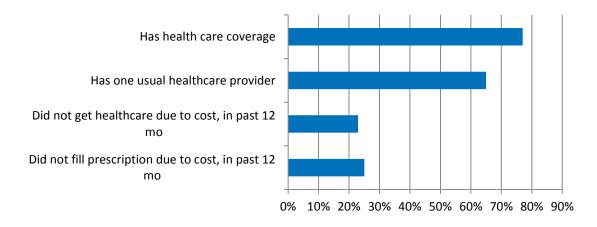
Two-thirds (65%) had a usual primary health care provider.

Barriers to Care

In the prior year, 1 in 4 (23%) adults did not get health care due to cost: 1 in 4 (25%) did not fill a medication prescription due to cost, and 1 in 4 saw a dentist while in pain.

One in five (22%) needed at least occasional help reading medical instructions.

Figure 9: Health care access and cost as a barrier, adults age 18 and older, Marion County, 2012



¹¹ Ibid., BRFSS 2011

12 Ibid., BRFSS 2011

Diagnosed Chronic Diseases

Over half (59%) of adults reported being told by a health professional that they had at least one chronic disease; 32% had more than one.

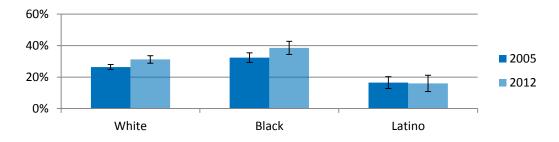
- 1 in 3 (31%) were told they had high blood pressure (similar to the U.S.). 13
- 1 in 5 had depression (21%) vs. 17% in the U.S.
- 14% had diabetes (Type I or II, non-gestational related) compared to 9.5 nationally.
- 11% had current asthma (vs. 9.1% in the U.S.).

One in four adults (24%) had been advised they had high blood cholesterol, lower than the U.S. average of 38%.

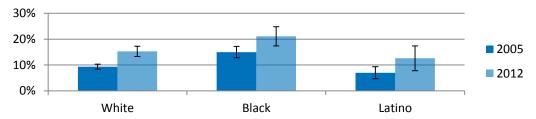
Both high blood pressure and diabetes have become more common since the previous countywide Community Health Survey in 2005 (Figure 10) and were similar to increasing U.S. rates.

Figure 10: Prevalence of high blood pressure and diabetes by race, adults age 18 and older, Marion County, 2005 & 2012

Ever diagnosed with high blood pressure



Ever diagnosed with diabetes

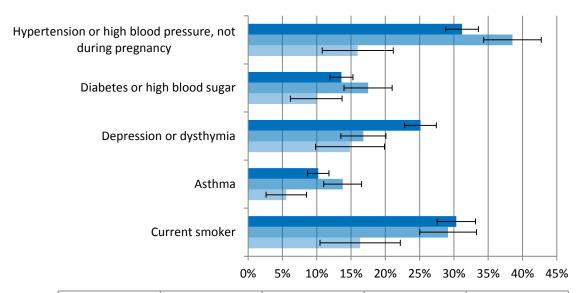


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¹³ Ibid., BRFSS 2011

Diagnoses of high blood pressure, diabetes and asthma were more common among blacks than whites and were least common among Hispanics. Depression was much more common among whites (Figure 11).

Figure 11: Prevalence of chronic diseases and smoking by race, adults age 18 and older, Marion County, 2012



	Current smoker	Asthma	Depression or dysthymia	Diabetes or high blood sugar	Hypertension or high blood pressure, not during pregnancy
White	30%	10%	25%	14%	31%
Black	29%	14%	17%	17%	39%
Latino	16%	6%	15%	10%	16%

■ White ■ Black ■ Latino

- Among any random group of 20 black adults, an average of 8 would have high blood pressure, 3-4 would have diabetes, 3-4 would have diagnosed depression and 3 would have asthma.
- Among 20 white adults, 6 would have high blood pressure, 3 would have diabetes,
 5 would have depression and 2 would have asthma.
- Among 20 Hispanic adults, 3 would have high blood pressure, 2 would have diabetes, 3 would have depression and 1 would have asthma. The low prevalence of chronic diseases among Hispanics is due in part to their age distribution; relatively few Hispanics in the county are over 50 years old.

Health Risk Factors

Smoking

Three out of every 10 (29%) county adults smoked cigarettes compared to 21.1% of U.S. adults. Half (48%) of these smokers have tried to quit during the past year. Smoking appears to have increased among black adults and especially among white adults since 2005 (Figure 12).

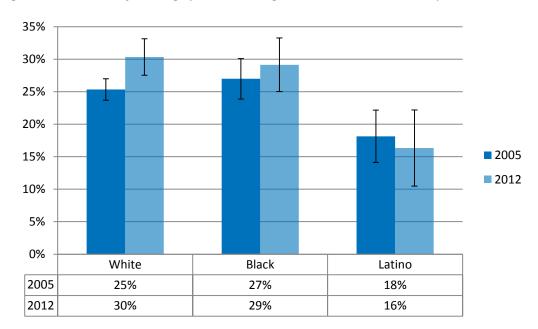


Figure 12: Prevalence of smoking by race, adults age 18 and older, Marion County, 2005 & 2012

Alcohol Use

Five in 10 adults (49%) had not drank alcohol in the past month, while 3 in 10 (29%) had drank heavily at least once in that period. This rate is higher than the 5% heavy drinkers reported for the U.S. population.

Household Firearms

Over 1 in 5 (22%) of the households had some handgun or other firearm.

Conclusions

Marion County children ages 5 to 17 were similar to national samples in terms of health care coverage and overweight levels. They exceeded national levels of asthma and ADHD. They were less likely than U.S. sampled children to have a usual source of health care and less likely to have visited the emergency department in the past year.

Adults in the county were more likely than U.S. adults to report a diagnosis of almost all surveyed chronic diseases and risk factors, such as smoking and obesity status. The exceptions were hypertension, restricted activities due to health and rates of physical activity, for which Marion County rates were similar to U.S. rates, and high cholesterol level, for which the Marion County rate was lower than the U.S. rate.

Appendix A: Steering Committee Members

Orion Bell

President & CEO

CICOA Aging & In-Home Solutions

Sue Burow

Indiana University Public Policy Institute

Robin Miner

Indy Hunger Network

Rebecca A. Seifert Executive Director Gennesaret Free Clinic

Booker Thomas President and CEO IU Health, HealthNet

Marlene Dotson President & CEO

Indiana Latino Institute

Johnnie Washington

President

MHC of Marion County

Dr. Indra Frank President

Improving Kids Environment

Jean Caster

Executive Director

American Association of Pediatrics:

Indiana Chapter

Gina Hays

Chief Executive Officer

Mental Health America of Greater

Indianapolis

Alex Slabosky Board Member

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Jim Whitehead

Executive Vice President/CEO

American College of Sports Medicine

Chuck Brandenburg

Director, Special Projects & Grants United Way of Central Indiana

Doug Poe

Executive Director & CEO

American Indian Center of Indiana, Inc.

Frederick Bagg

Director, Strategic Planning & Market

Research

Franciscan St. Francis Health

Education & Support Services Center

Dan Hodgkins

VP Community Benefit & Economic

Development

Community Health Network

Ann Yeakle

Community Health Network
Community Hospital East

Katherine Humphreys

Senior VP Government Relations St. Vincent Health Administration

Sarah Ketterer

Community Benefit Coordinator

Indiana University Health

John Kunzer

Medical Director, Primary Care

Wishard Health Services

Christopher S. Weaver
Chief Medical Officer
Wishard Health Services

Appendix B. Questionnaire

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Hello, I'm calling from IUPUI to help the Marion County Public Health Department conduct a study of health issues and needs in our community. We will ask over 5,000 residents about their neighborhoods, health history and factors affecting their health. One hundred of the 5,000 people who complete this survey will receive a \$50 Marsh gift card, picked randomly at the completion of the survey.

- 1) First, I would like to verify that you do live in Marion County, Indiana.
 - 1 Yes, continue
 - 2 No, does not live in Marion County
 - 3 Respondent refuses
 - 4 Respondent asks for callback

Your answers to the survey will be confidential, and no information will be released that will identify you as a participant in the survey. For the purposes of this survey, I need to select an adult to speak with.

Respondent Selection

2)	First.	how many	people I	iving in v	vour housel	nold are	18 or older?
_,		11011	pcopic .		,	1014 416	10 01 01001

NUMBER:

99 = Refused

3) For the purposes of this survey, I would like to speak with the adult in your household who has had the most recent birthday? Is this person available?

```
1 Yes - same person
```

2 Yes - different person

3 NO

4) Are you currently driving?

1 YES

2 NO

IF YES, RECORD CALLBACK TIME

5) Question: Their GENDER. RECORD RESPONDENT'S GENDER. If unsure, "I'm sorry but I have to ask, are you a man or a woman?"

1 MAN

2 WOMAN

6) Next, I'd like to ask you if you are 30 years old or older

1 Yes

2 No

9 REF

Number of People in the Household

7) Please tell me how many people live in this household, including all children and anyone who normally lives here even if they are not here now, like someone who is away.

NUMBER:

99 = REF

Residents over the age of 65

8) How many of these household residents are over age 65?

NUMBER:

99 = REF

Number of children in the household:

9) How many of these household residents are children age 5 years to under 18 years?

NOTE: Children who live with parent half-time should be considered residents if they are living there when contact is made.

NUMBER: 99 = REF

IF NONE, SKIP TO ITEM 32).

Questions About Child

Next, we would like to talk to you about one of your children between the ages of 5 and 17 years old. Please think about your child who has had the most recent birthday.

10) What are this child's initials?

IF NEEDED: The initials will only be used to ask follow-up questions.

11) Are you this child's primary caregiver?

NOTE: Let respondent define whether they are or not.

1 YES

2 NO

3 REF

Child's Demographics

12) How old is [INITIALS]?

NOTE: If not between 5-17, clarify.

Age: 99=REF/DK

13) Is [INITIALS] a boy or a girl?

1 Boy

2 Girl

9 REF

14) How tall is [INITIALS]?

ANSWER EITHER FEET/INCHES OR METERS/CENTIMETERS

FEET: INCHES:

METERS: CENTIMETERS:

999 = DK/REF 888 = SKIP THROUGH

15) How much does [INITIALS] weigh?

ANSWER EITHER POUNDS OR KILOGRAMS

POUNDS:

KILOS:

Health Care

16) Does [INITIALS] have any kind of health care coverage, including health insurance, prepaid plans such as HMOs[Health Maintenance Organization] or government plans such as Medicaid (S-CHIP, Indiana's Children's Health Insurance Program known as or Hoosier Health Wise)?

```
1 YES
```

2 NO [SKIP TO ITEM 18)]

8 DK [SKIP TO ITEM 18)]

9 REF [SKIP TO ITEM 18)]

- 17) Is this health care coverage Hoosier Healthwise/Medicaid, private insurance, HMO or something else?
 - 1 Hoosier HealthWise/Medicaid
 - 2 Private insurance
 - 3 HMO
 - 4 Something else
 - 8 DK
 - 9 REF
- 18) Do you have one person that you think of as [INITIALS]'s personal doctor or nurse?

IF NO, ASK "More than one person or no usual person?"

- 1 YES, ONE PERSON
- 2 NO, MORE THAN ONE PERSON
- 3 NO, NO USUAL PERSON
- 8 DK
- 9 REF

19)	In the past 12 months, has [INITIALS] seen a dentist for any routine dental care, including check-ups, screenings and sealants? Please include all types of dentists such as orthodontists, oral surgeons and all other dental specialists.
	1 YES 2 NO 8 DK 9 REF
Health	Conditions
conditio	m going to ask you about [INITIALS]'s health. I am going to read a list of ons. Please tell me whether a doctor, nurse or other health professional has EVER that [INITIALS] had any of the following
20)	Asthma?
21)	IF YES, ask "Does s/he still have asthma?"
	1 YES – ONLY YES IF S/HE STILL HAS ASTHMA
	2 NO 8 DK 9 REF
22)	High blood pressure (or hypertension)?
	1 YES 2 NO 8 DK 9 REF
23)	Diabetes or pre-diabetes?
	1 YES 2 NO 8 DK 9 REF
24)	Depression or anxiety problems?
	1 YES 2 NO 8 DK
	9 REF

	Disorder)
	1 YES 2 NO 8 DK 9 REF
26)	Any condition requiring additional medical care or medications than is usual for children his/her age?
	1 YES 2 NO 8 DK 9 REF
27)	In the past 12 months, how many times has [INITIALS] been seen in the emergency room?
	NUMBER:
Activity	, Smoke Exposure
28)	On an average school day, how many hours does [INITIALS] watch TV?
	NUMBER (0-24)
	IF HALF HOUR, ROUND UP
29)	On an average school day, how many hours does [INITIALS] play video or computer games or use a computer for something that is not school work? Include activities such as Xbox, PlayStation, Nintendo DS, iPod touch, Facebook and the Internet.
	NUMBER (0-24):
	IF HALF HOUR, ROUND UP

25) ADD OR ADHD? (Attention Deficit Disorder or Attention Deficit or Hyperactivity

30)	Does [INITIALS] get 60 minutes of activity per day? Include times in physical education classes, sports, active play, dance or other sports lessons, riding bike or scooter.
	1 YES 2 NO 8 DK 9 REF
31)	Does anyone smoke inside [INITIALS] home? Please include household residents or visitors.
	1 YES 2 NO 8 DK 9 REF
Thank y	ou for answering questions regarding your child.
Neighb	orhood Environment
The nex	t set of questions concerns your health and your neighborhood environment.
32)	In the past week, how did you get to most places you needed to go? Would you say you
	1 Walked
	2 Biked 3 Drove or rode in a private vehicle
	4 Used public transportation
	9 REF

Next, I am going to read statements about your neighborhood. Please let me know if you strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree or strongly disagree.

- 33) I feel safe in my neighborhood. Do you...
 - 1 Strongly agree
 - 2 Somewhat agree
 - 3 Neither agree nor disagree
 - 4 Somewhat disagree
 - 5 Strongly disagree
 - 8 DK
 - 9 REF
- 34) People in my neighborhood are willing to help each other. Do you...
 - 1 Strongly agree
 - 2 Somewhat agree
 - 3 Neither agree nor disagree
 - 4 Somewhat disagree
 - 5 Strongly disagree
 - 8 DK
 - 9 REF
- 35) In my neighborhood, there are many vacant, abandoned or rundown properties. Do you...
 - 1 Strongly agree
 - 2 Somewhat agree
 - 3 Neither agree nor disagree
 - 4 Somewhat disagree
 - 5 Strongly disagree
 - 8 DK
 - 9 REF

36)	Does your neighborhood have sidewalks or paved paths?
	1 YES 2 NO 8 DK 9 REF
	If NO, skip to NEIGH6
37)	Could someone use the sidewalks/paths using a wheelchair, walker, stroller, or other mobility aid without difficulty?
	1 YES 2 NO 8 DK 9 REF
38)	Are there street lights that light the sidewalks/paths at night?
	1 YES 2 NO 8 DK 9 REF
39)	Do your sidewalks/paths connect to other major streets or neighborhoods?
	1 YES 2 NO 8 DK 9 REF
home. I	like you to think about the places that are within a 10-minute walk of your am going to read a list of places. Please tell me whether each of them is within a ste walk from your home.
40)	Full Service Grocery or Supermarket [within a 10-minute walk from your home]
	0=NO 1=YES
41)	Community Center or Library [within a 10-minute walk from your home] 0=NO 1=YES

42) Park, Greenway or Playground [within a 10-minute walk from your home]

0=NO

1=YES

43) Bus stop or other public transportation [within a 10-minute walk from your home]

0=NO

1=YES

Food

Now, let's talk about your food sources and healthy habits.

44) In a typical week, where do you do MOST of your shopping for *food items*?

INTERVIEWER: If respondent answers more than one, ask for one type of store that is most common.

- 1 SUPERMARKET/GROCERY STORE (Kroger, Marsh)
- 2 DISCOUNT STORES/WAREHOUSE STORES (Costco, Walmart, Target)
- 3 CONVENIENCE STORE (Speedway, 7-11, CVS)
- 4 ETHNIC FOOD STORES (Bodegas, Asian Food Markets)
- **5 DOLLAR STORES**
- 8 DK; SOMEONE ELSE SHOPS
- 9 REF

45) In the past 7 days, how many times did you eat fast food? Include fast food meals or snacks eaten at work, at home, in the car or at fast-food restaurants, carryout or drive through.

IF RESPONDENT SAYS "A LOT" OR "NOT MANY" ASK THEM TO GIVE THEIR BEST ESTIMATE.

NUMBER OF TIMES IN PAST 7 DAYS:

99 = REF

46) Do you look for nutrition labels or symbols (like a heart symbol) on menu items at restaurants and fast food establishments?

INTERVIEWER: If yes, ask, "All or most of the time OR some of the time?"

- 1 Yes, all or most of the time
- 2 Yes, some of the time
- 3 No
- 9 REF
- 47) Which situation best describes your household over the past 12 months?
 - 1 You could always afford enough food to eat
 - 2 You sometimes couldn't afford enough food to eat
 - 3 You often couldn't afford enough food to eat
 - 8 DK
 - 9 REF
- 48) In the past 12 months, have you or others in your household used the following services?

1 Community kitchen	0=NO 1	=YES
2 Women's, Infants and Children's food programs (WIC)	0=NO 1	=YES
3 USDA food stamps (or SNAP)	0=NO 1	=YES
4 Received free food from a food pantry	0=NO 1	=YES
5 RESPONDENT SAID NO TO ALL OPTIONS	0=NO 1=	=YES

8 DK

9 REF

General Health

Now I am going to ask some questions about your general health.

49)	Would you say that in general your health is
	1 Excellent 2 Good 3 Fair 4 Poor 5 Very poor 8 DK 9 REF
50)	Now think about your physical health, which includes physical illness and injury. How many days during the past month was your physical health NOT good?
	NUMBER OF DAYS (0-30): 99 = REF
51)	Now think about your mental health, which includes stress, depression and problems with emotions. How many days during the past 30 days was your mental health NOT good?
	NUMBER OF DAYS (0-30): 99 = REF
52)	During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work or recreation?
	NUMBER OF DAYS (0-30): 99 = REF
53)	Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed or special telephone? This includes occasional use or use in certain circumstances.
	1 YES 2 NO 8 DK 9 REF

54) How many hours in a day, on average, do you spend watching TV, videos, DVDs or using the computer outside of work?

HOURS PER DAY (0-24): 99 = REF

ROUND UP IF HALF HOUR

55) During the past month, other than your regular job, did you participate in any physical activities or exercises, such as running, calisthenics, golf, gardening or walking for exercise?

1 YES

2 NO

9 REF

56) How tall are you now without shoes?

ANSWER EITHER FEET/INCHES OR METERS/CENTIMETERS

FEET: INCHES:

METERS; CENTIMETERS: 9999 = DK/REF 8888 = SKIP THROUGH

57) How much do you weigh now without shoes?

ANSWER EITHER POUNDS OR KILOGRAMS

POUNDS:

KILOS:

Physical Activity, Work Wellness

58) Do you do moderate activities for at least 10 minutes at a time? Moderate activities include brisk walking, bicycling, vacuuming, gardening or anything else that causes some increase in your breathing or heart rate?

1 YES

2 NO [SKIP TO ITEM 61)]

9 REF [SKIP TO ITEM 61)]

59) How many days per week do you do these moderate activities for at least 10 minutes at a time?

NUMBER OF DAYS (0-7): 9 = DK/REF

IF RESPONDENT SAYS "LESS THAN WEEKLY" CODE AS 0

60) How much total time per day do you spend doing these moderate activities? Again, please do not include any time spent at work.

HOURS (0-24): 99 = DK/REF MINUTES (0-60): 99 = DK/REF

- 61) Are you currently... [employment status]
 - 1 Employed for wages or self-employed?
 - 2 Out of work
 - 3 Unable to work
 - 4 A homemaker or student
 - 5 Retired
 - 9 REF
- 62) Which of the following best describes what you do at work? Would you say you are...
 - 1 Mostly sitting or standing
 - 2 Mostly walking
 - 3 Mostly doing heavy labor or physically demanding work
 - 9 REF
- 63) Does your workplace have on-site policies or programs to improve employee health or wellness?
 - 1 YES
 - 2 NO [SKIP TO ITEM 65)]
 - 8 DK [SKIP TO ITEM 65)]
 - 9 REF [SKIP TO ITEM 65)]

- 64) To what degree does your immediate supervisor support your participation in on-site health and wellness programs at work? Would you say that your supervisor [READ CHOICES BELOW] of you participating in health and wellness programs at work?
 - 1 Strongly approves
 - 2 Often approves
 - 3 Neither approves nor disapproves
 - 4 Often disapproves
 - 5 Strongly disapproves
 - 8 DK / NEVER DISCUSS IT WITH SUPERVISOR
 - 9 REF

Health Care

Now we are going to talk about your health care.

- 65) Do you have any kind of health care coverage, including health insurance, prepaid plans (such as HMOs) or government plans such as Medicare, CHAMPUS or Medicaid?
 - 1 YES
 - 2 NO
 - 8 DK
 - 9 REF
- 66) Do you have one person you think of as your personal doctor or health care provider? If "No," ask: "Is there more than one, or is there no person who you think of as your personal doctor or health care provider?"
 - 1 YES, ONLY ONE
 - 2 MORE THAN ONE
 - 3 NO, NONE
 - 8 DK
 - 9 REF

67)	Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?
	1 YES 2 NO 8 DK 9 REF
68)	Was there a time in the past 12 months when you needed prescribed medication but went without because of cost?
	1 YES 2 NO 8 DK 9 REF
69)	In the past 12 months, have you been to a dentist or other health professional for pain in your teeth, mouth or gums?
	1 YES 2 NO 8 DK 9 REF
70)	Do you feel accepted or respected at your current health care provider?
	1 YES 2 NO 7 N/A - DO NOT HAVE ONE 8 DK 9 REF

71)	How often do you need to have someone help you when you read instructions, pamphlets or other written material from your doctor or pharmacy? Would you say
	1 Never2 Occasionally3 Sometimes4 Frequently5 Always9 REF
Chronic	c Disease
	m going to read a list of conditions. Please tell me whether a doctor, nurse or ealth professional has EVER told you that you had any of the following.
72)	Heart attack, angina, or coronary heart disease?
	1 YES 2 NO 8 DK 9 REF
73)	Asthma? IF "YES," ask, "Do you still have asthma?"
	1 YES – HAVE IT CURRENTLY 2 YES – HAD IT ONLY IN THE PAST 3 NO 8 DK 9 REF
74)	A depressive disorder (including major depression, dysthymia or minor depression)?
	1 YES 2 NO 8 DK 9 REF

75)	Diabetes (or high blood sugar)? If yes and respondent is a woman, ask, "Were you told this during a pregnancy?"
	1 YES 2 YES BUT FEMALE TOLD ONLY DURING PREGNANCY 3 NO 4 NO, BUT TOLD PRE-DIABETES OR BORDERLINE DIABETES 8 DK 9 REF
76)	Hypertension (or high blood pressure)? If yes and respondent is a woman, ask, "Were you told this during a pregnancy?"
	1 YES 2 YES BUT FEMALE TOLD ONLY DURING PREGNANCY 3 NO 4 NO, BUT TOLD PRE-HYPERTENSIVE OR BORDERLINE HIGH 8 DK 9 REF
77)	High blood cholesterol?
	1 YES 2 NO 8 DK 9 REF
Health	Behaviors
78)	Have you ever smoked at least 100 cigarettes in your entire life? 1 YES 2 NO [SKIP TO ITEM 81)] 8 DK [SKIP TO ITEM 81)] 9 REF [SKIP TO ITEM 81)]
79)	Do you now smoke every day, some days or not at all?
	1 Every day 2 Some days 3 Not at all 9 REF

80)	During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?					
	1 YES 2 NO 9 REF					
81)	During the past 30 days, how many days did you have at least one drink of any alcoholic beverage, such as beer, wine, malt beverage or liquor? If respondent says "I drink about once a week" say "So four times this past month?"					
	NUMBER OF DAYS (0-30):					
	If NUMBER = 0, SKIP TO ITEM 84)					
82)	On the days when you did drink in the past 30 days, how many drinks did you have on average? One drink would be a 12-ounce beer, a 5-ounce glass of wine or a drink with one shot of liquor.					
	NUMBER OF DRINKS PER DAY: 99 = REF					
83)	How many times during the past 30 days did you have 4 (if woman) 5 (if man) or more drinks on any occasion? Please consider all types of alcohol.					
	NUMBER OF TIMES: 99 = REF					
84)	In the past 12 months, have you or a household member been the victim of violence or physical, sexual or verbal abuse?					
	1 YES 2 NO 8 DK 9 REF					
85)	Do you keep a hand gun or other firearm in or around your home?					
	1 YES 2 NO 8 DK 9 REF					

86) Have you or a household member ever been addicted to prescription medicines or pain pills? 1 YES 2 NO 8 DK 9 REF **Demographics** Now I just have a few more questions to understand more about the individuals we talk with. 87) What is the highest grade or year of school you completed? 1 NEVER ATTENDED SCHOOL 2 GRADES 1 THOUGH 8 3 SOME HIGH SCHOOL 4 HIGH SCHOOL GRADUATE OR GED 5 SOME COLLEGE OR TECHNICAL SCHOOL 6 COLLEGE GRADUATE 7 POST-GRADUATE EDUCATION 8 DK 9 REF 88) How old are you currently? 999 = DK/REF AGE: 89) Do you primarily speak another language besides English in your home? 1 NO, SPEAKS ENGLISH IN HOME 2 YES, SPEAKS SPANISH IN HOME 3 YES, SPEAKS OTHER LANGUAGE IN HOME (SPECIFY) 9 REF 90) Are you of Hispanic or Latino origin, such as Mexican American, Latin American, Puerto Rican or Cuban? 1 YES 2 NO

9 REF

91) Which of these groups would you say best represents your race?							
a) White							
0=NO 1=YES							
b) Black or African American							
0=NO 1=YES							
c) Asian							
0=NO 1=YES							
d) Native Hawaiian or Other Pacific Islander							
0=NO 1=YES							
e) American Indian or Alaska Native							
0=NO 1=YES							
f) Other (Specify)							
0=NO 1=YES RACE:							
g) REF							
0=NO 1=YES							

Household income can affect your opportunities to access health care or to purchase food and other goods for your family, so we would like to ask about your household income in broad ranges. Please think about your annual household income from all sources, before taxes.

```
92) Is your annual household income ...
   a) Less than $25,000?
      1 YES
      2 NO [SKIP TO 92)e)]
      9 DK/REF
      If NO skip to Q 106
   b) Is it less than $20,000?
      1 YES
      2 NO [SKIP TO 93)]
      9 REF
   c) Is it less than $15,000?
      1 YES
      2 NO [SKIP TO 93)]
      9 REF
   d) Is it less than $10,000?
      1 YES
      2 NO [SKIP TO 93)]
      9 REF
   e) Is it less than $35,000?
      1 YES [SKIP TO 93)]
      2 NO
      9 REF
   f) Is it less than $50,000?
      1 YES [SKIP TO 93)]
      2 NO
      9 REF
```

```
g) Is it less than $75,000?
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1 YES [SKIP TO 93)]

2 NO

9 REF

h) Is it less than \$100,000?

1 YES

2 NO

9 REF

93) What is the ZIP code where you live?

ZIP CODE:

99999 = REF

94) Would you be willing to participate in a group discussion about topics in this survey?

1 Yes

2 No [SKIP TO 93)]

95) What is your

a) Name?

LAST NAME:

FIRST NAME:

b) At what telephone number may we contact you?

$$(999) 999 - 9999 = REF$$

- 96) To help us better understand the environment you live in and how it may affect your health, please tell me the address where you live. This information will be kept confidential and will be destroyed after the entire survey has been completed.
 - a) Record address (ONLY number, street, and apartment # if necessary)

9 REF

b) Can you just tell me the name of the street you live on?

1 Record street name

9 REF

- c) Can you tell me the name of the cross street you live on?
 - 1 Record cross-street name
 - 9 RFF
- d) Without telling me your specific street address, could you tell your house number rounded off to the nearest 100?
 - 1 Record block number
 - 9 REF
- 97) As you know, 100 people who complete the survey will be picked to receive a \$50 Marsh gift card. May I have permission to call you back at this phone number if you are selected?
 - 1 YES
 - 2 RESPONDENT HAS A DIFFERENT NUMBER (SPECIFY)
 - 3 NO

That is the last question I have. I really appreciate your time and cooperation. If you have any questions about the survey, please contact Dr. Joe Gibson at 1-317-221-3355. Results of the survey will be released on the Marion County Public Health Department website. Thank you for your time.

Interviewer Notes

- 98) INTERVIEWER: WAS THIS INTERVIEW CONDUCTED IN SPANISH?
 - 1 Yes
 - 2 No
- 99) What type of phone respondent was contacted on?
 - 0 Landline
 - 1 Cell Phone
 - Block ID for landline respondents.
- 100) Age range of respondent
 - 1 18-24
 - 2 25-30
 - 3 31-45
 - 4 46-64
 - 5 65+
 - 9 RFF

101) Participant Race

- 1 White
- 2 Black
- 3 Hispanic
- 4 Other
- 9 REF

Appendix C: Responses to the Survey

From June 1 to September 12, 2012 a random sample telephone survey was conducted among 5,013 Marion County residents. The purpose of the survey was to assess community health needs. Most survey questions were taken from standard instruments, including the CDC's Behavioral Risk Factor Surveillance System questionnaire and the National Health Interview Survey. In all, 5,013 adults answered the survey. Of these, 1,348 respondents had at least one child between the ages of 5 and 17 in their households and answered questions about that child's health.

For each question, the percentages given are calculated over all those who answered the question, excluding those who answered "Don't know" or refused to answer. Less than 5% of respondents answered "Don't know" or refused to answer each question, except where noted. The sum of percentages for all responses for a question may differ slightly from 100% due to rounding. The "estimate" or average response rate is given with its 95% confidence interval (95% CI).

Respondent Characteristics

The first several questions verify that the household is in Marion County,¹ that an adult is randomly selected from the household,² and, if the interview is being done by cellphone, that the respondent is not driving.³

Est. %	95% CI
45	43.2 - 47.5
55	52.5 - 56.8
77	75.1 - 78.9
13	11.9 - 15.1
11	9.7 - 12.6
28	25.9 - 30.0
34	32.4 - 36.5
13	12.0 - 14.1
	45 55 77 13 11 28 34

Household Composition

Question	Est. %	95% CI
Total number of persons in household ⁷		
1	15.8	14.2 - 17.5
2	29.5	27.6 - 31.4
3	19.2	17.5 - 20.8
4 or more	35.5	33.4 - 37.6
Average number of persons per household	3.1	3.0 - 3.1

Average number of persons per household, by age range

Age 0-17 years			Age 1	8-64 years	Age 65 or older		
Average	0.9	0.8 - 1.0	1.8	1.8 - 1.9	0.3	0.3 - 0.3	

Percent of households by number of household members within each age group

Age group	Number of household members within age group ⁸ (Percent of households, ±95% CI)									
(years)	0		1		2		3		4 or more	
0-17	55.8	±2.2	16.1	±1.7	16.2	±1.7	7.5	±1.2	4.3	±1.0
18-64	10.4	±1.0	26.2	±2.0	42.3	±2.2	14.6	±1.6	6.5	±1.0
65+	79.2	±1.5	13.6	±1.3	7.0	±0.8	0.2	±0.2	0.0	±0.0

Questions About a Household Child

The following information is about a randomly selected 5- to 17-year-old child in the household, for households with any child in that age range. The results are weighted to represent all resident 5- to 17-year-olds in Marion County.

1,348 respondents, representing 38% of Marion County households, reported having at least one 5- to 17-year-old household member.

Question	Est. %	95% CI
Child's Demographics		
Respondent is child's primary caregiver ¹⁰	79	74.8 - 83.6
Child's age (in years) ¹¹		
5-8 yrs old	32	27.5 - 35.7
9-13 yrs old	38	33.6 - 42.6
14-17 yrs old	30	25.9 - 34.7
Child's gender ¹²		
Male	51	46.4 - 55.6
Female	49	44.4 - 53.6
Child body mass category ¹³		
Underweight	5.7	3.7 - 7.8
Normal weight	44	39.0 - 49.5
At risk of overweight	19	15.3 - 23.7
Overweight	31	25.1 - 36.1
*Note: 342 (25.4%) of the 1,348 responses to that question were "dor	n't know" or "refuse	ed."
Child's Health Care		
Child has health care coverage ¹⁴	94	91.8 - 95.7
Type of heath care coverage, among those with any coverage ¹⁵		
Medicaid	52	46.9 - 56.6
Private insurance	33	29.0 - 37.8
НМО	5.8	4.0 - 7.7
Other health insurance	9.1	6.4 - 11.7
Does child have a personal health care provider? ¹⁶		
No	10	7.4 - 13.0
Yes, one	82	78.4 - 85.3
Yes, more than one	8.0	5.8 - 10.2
Has child had routine dental visit within 1 year? ¹⁷	83	79.8 - 86.5
Health Conditions		
Percent (all county children) ever diagnosed with 18		
Asthma (currently diagnosed)	20	16.1 - 24.7
High blood pressure or hypertension	1.0	0.2 - 1.7
Diabetes or pre-diabetes	2.3	-0.8 - 5.5
Depression or anxiety problems	9.6	5.8 - 13.3
ADD or ADHD	16	12.3 - 18.8
Other medical condition	17	12.8 - 21.0
Percent of children by number of notable medical conditions ¹⁹		
No to all medical conditions	58	53.6 - 62.9
Yes to one medical condition	26	22.3 - 30.3
Yes to more than one medical condition	15	11.4 - 19.6

Number of emergency room visits by the child in the past 12 more	nths ²⁰	
0	75	71.0 - 78.8
1	18	14.9 - 22.1
2	4.4	2.7 - 6.1
3 or more	2.2	1.1 - 3.4
	<u>Visits</u>	
Average number of ED visits	0.4	0.3 - 0.4
Activity, Tobacco Smoke Exposure		
Question	Est. %	95% CI
Child's hours of screen viewing on an average school day (not including schoolwork) ²¹		
0	2.7	1.5 - 3.9
1	9.1	6.8 - 11.4
2	24	19.7 - 27.3
3	22	18.8 - 25.8
4	17	13.4 - 20.8
5	9.6	7.1 - 12.0
6	6.5	4.5 - 8.5
7 or 8	6.0	3.8 - 8.2
9 or more	3.3	1.4 - 5.1
	<u>Hours</u>	
Average number of hours	3.6	3.4 - 3.8
Question	Est. %	95% CI
Child is active at least 60 minutes per day ²²	95	93.8 - 96.6
Someone smokes in the home ²³	17	12.9 - 20.3

Adult Respondent Questions

Neighborhood Environment

Question	Est. %	95% CI
Usual mode of travel ²⁴		
Walking	6.3	5.0 - 7.6
Bicycle	1.2	0.7 - 1.7
Private vehicle	87	85.7 - 88.9
Public transportation	5.2	4.2 - 6.2
Degree of agreement with the following statements: ²⁵		
"I feel safe in my neighborhood." ²⁶		
Strong agree	58	55.9 - 60.2
Somewhat agree	34	31.5 - 35.6
Neither agree/disagree	1.4	0.9 - 1.8
Somewhat disagree	4.3	3.5 - 5.2
Strong disagree	2.7	2.0 - 3.3
"People in my neighborhood are willing to help each other." ²⁷		
Strong agree	42	39.8 - 44.1
Somewhat agree	37	35.0 - 39.2
Neither agree/disagree	7.5	6.3 - 8.7
Somewhat disagree	7.4	6.3 - 8.5
Strong disagree	6.1	5.0 - 7.2
"In my neighborhood, there are many vacant, abandoned, or run	down propertie	s." ²⁸
Strong agree	12	10.5 - 13.4
Somewhat agree	13	11.9 - 14.8
Neither agree/disagree	2.3	1.7 - 3.0
Somewhat disagree	15	13.6 - 16.6
Strong disagree	57	55.1 - 59.4
Neighborhood has sidewalks ²⁹	75	72.8 - 76.4
Sidewalks are in good condition (where there are sidewalks) ³⁰	86	83.8 - 87.3
Sidewalks are lighted at night ³¹	77	74.5 - 78.6
Sidewalks connect to major streets or neighborhoods ³²	72	69.6 - 74.3
Within a 10-minute walk from your home, is there a ³³		
Full-service grocery or supermarket	54	52.3 - 56.6
Community center or library	33	30.5 - 34.6
Park, greenway or playground	67	64.6 - 68.7
Bus stop or other public transportation	76	73.8 - 77.2

Food Access

Question	Est. %	95% CI
Usual type of food shopping store ³⁴		
Supermarket or grocery store	70	68.2 - 72.2
Discount store (Costco, Walmart)	27	24.7 - 28.7
Convenience store (Speedway, CVS)	0.4	0.2 - 0.7
Ethnic store (bodega, Asian market)	2.2	1.5 - 2.8
Dollar store	0.5	0.2 - 0.9
Number of fast food snacks or meals in past week ³⁵		
0	28	26.4 - 30.2
1	24	22.1 - 25.7
2	20	18.0 - 21.8
3	12	10.8 - 13.7
4	5.5	4.6 - 6.5
5-7	8.4	7.2 - 9.6
8 or more	1.7	1.2 - 2.3
Average number of fast food snacks or meals	1.9	1.8 - 2.0
Looks for nutrition information at restaurants ³⁶		
Yes, all or most of the time	27	25.3 - 28.9
Yes, some of the time	23	21.2 - 24.8
No	50	47.8 - 52.1
Household food situation in past 12 months ³⁷		
Could always afford enough food to eat	73	71.3 - 75.2
Sometimes couldn't afford enough food to eat	22	19.8 - 23.4
Often couldn't afford enough food to eat	5.2	4.2 - 6.2
Food support used in past 12 months ³⁸		
Community kitchen	3.5	2.6 - 4.4
Food pantry	12	10.1 - 13.0
SNAP (food stamps)	23	21.5 - 25.3
WIC	7.5	6.3 - 8.7
General Health		
Question	Est. %	95% CI
Respondent's general health ³⁹		
Excellent	23	20.8 - 24.4
Good	25 47	45.2 - 49.6
Fair	23	21.4 - 25.1
Poor	5.6	4.6 - 6.5
Very poor	1.2	0.8 - 1.5
very poor	1.2	0.0 - 1.5

Days in the past month with poor physical or mental health, or restricted activities due to poor health

Days Percent interval Percent interval Percent interval Percent interval Percent interval 0 60 57.7 - 61.9 59 56.8 - 61.1 57 54.1 - 59.5 1 6.1 5.0 - 7.1 3.4 2.7 - 4.1 4.8 3.7 - 5.9 2 7.5 6.5 - 8.6 6.2 5.2 - 7.2 5.9 4.5 - 7.2 3 4.4 3.5 - 5.4 3.0 2.3 - 3.7 4.5 3.2 - 5.8 4-5 days 4.4 3.5 - 5.3 6.5 5.5 - 7.6 5.6 4.3 - 6.8 6-9 days 2.8 2.1 - 3.5 3.7 2.9 - 4.6 4.1 3.0 - 5.2 10-19 days 6.0 4.9 - 7.1 8.7 7.4 - 9.9 9.1 7.6 - 10.7 20-29 days 2.6 1.9 - 3.3 3.2 2.5 - 3.9 3.6 2.6 - 4.6 Entire month 6.3 5.4 - 7.2 6.3 5.3 - 7.4 5.6 4.5 - 6.7 Days Days			Poor al health ⁴⁰		Poor al health ⁴¹		stricted tivity ⁴²
Days Percent interval Percent interval Percent interval 0 60 57.7 - 61.9 59 56.8 - 61.1 57 54.1 - 59.5 1 6.1 5.0 - 7.1 3.4 2.7 - 4.1 4.8 3.7 - 5.9 2 7.5 6.5 - 8.6 6.2 5.2 - 7.2 5.9 4.5 - 7.2 3 4.4 3.5 - 5.4 3.0 2.3 - 3.7 4.5 3.2 - 5.8 4-5 days 4.4 3.5 - 5.3 6.5 5.5 - 7.6 5.6 4.3 - 6.8 6-9 days 2.8 2.1 - 3.5 3.7 2.9 - 4.6 4.1 3.0 - 5.2 10-19 days 6.0 4.9 - 7.1 8.7 7.4 - 9.9 9.1 7.6 - 10.7 20-29 days 2.6 1.9 - 3.3 3.2 2.5 - 3.9 3.6 2.6 - 4.6 Entire month 6.3 5.4 - 7.2 6.3 5.3 - 7.4 5.6 4.5 - 6.7 Days Days Days 12 10.6 - 13.1 <		. ,					•
0 60 57.7 - 61.9 59 56.8 - 61.1 57 54.1 - 59.5 1 6.1 5.0 - 7.1 3.4 2.7 - 4.1 4.8 3.7 - 59.9 2 7.5 6.5 - 8.6 6.2 5.2 - 7.2 5.9 4.5 - 7.2 3 4.4 3.5 - 5.4 3.0 2.3 - 3.7 4.5 3.2 - 5.8 4-5 days 4.4 3.5 - 5.3 6.5 5.5 - 7.6 5.6 4.3 - 6.8 6-9 days 2.8 2.1 - 3.5 3.7 2.9 - 4.6 4.1 3.0 - 5.2 10-19 days 6.0 4.9 - 7.1 8.7 7.4 - 9.9 9.1 7.6 - 10.7 20-29 days 2.6 1.9 - 3.3 3.2 2.5 - 3.9 3.6 2.6 - 4.6 Entire month 6.3 5.4 - 7.2 6.3 5.3 - 7.4 5.6 4.5 - 6.7 Days Average 4.0 3.6 - 4.3 4.5 4.1 - 4.8 4.5 4.1 - 4.9 Question Est. % 95% CI Need special medical equipment 43 Screen hours per day, not including work 44 0 3.0 2.3 - 3.8 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 6.5 4.5 - 6.5 4.5 - 6.5 9 or more 6.0 4.7 - 7.3 Hours			Confidence		Confidence		Confidence
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2 7.5 6.5 - 8.6 6.2 5.2 - 7.2 5.9 4.5 - 7.2 3 4.4 3.5 - 5.4 3.0 2.3 - 3.7 4.5 3.2 - 5.8 4-5 days 4.4 3.5 - 5.3 6.5 5.5 - 7.6 5.6 4.3 - 6.8 6-9 days 2.8 2.1 - 3.5 3.7 2.9 - 4.6 4.1 3.0 - 5.2 10-19 days 6.0 4.9 - 7.1 8.7 7.4 - 9.9 9.1 7.6 - 10.7 20-29 days 2.6 1.9 - 3.3 3.2 2.5 - 3.9 3.6 2.6 - 4.6 Entire month 6.3 5.4 - 7.2 6.3 5.3 - 7.4 5.6 4.5 - 6.7 Days Average 4.0 3.6 - 4.3 4.5 4.1 - 4.8 4.5 4.1 - 4.9 Question Est. % 95% CI Need special medical equipment 43 Screen hours per day, not including work 44 0 3.0 2.3 - 3.8 16 16 14.4 - 17.5 2 3 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 6.7 6.7 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5 6.5	0	60	57.7 - 61.9	59	56.8 - 61.1	57	54.1 - 59.5
3	1	6.1	5.0 - 7.1	3.4	2.7 - 4.1	4.8	3.7 - 5.9
4-5 days 4.4 3.5 - 5.3 6.5 5.5 - 7.6 5.6 4.3 - 6.8 6-9 days 2.8 2.1 - 3.5 3.7 2.9 - 4.6 4.1 3.0 - 5.2 10-19 days 6.0 4.9 - 7.1 8.7 7.4 - 9.9 9.1 7.6 - 10.7 20-29 days 2.6 1.9 - 3.3 3.2 2.5 - 3.9 3.6 2.6 - 4.6 Entire month 6.3 5.4 - 7.2 6.3 5.3 - 7.4 5.6 4.5 - 6.7 Days Days Average 4.0 3.6 - 4.3 4.5 4.1 - 4.8 4.5 4.1 - 4.9 Question Est. % 95% CI Need special medical equipment over day, not including work over day, not including work over day and including work over day an	2	7.5	6.5 - 8.6	6.2	5.2 - 7.2	5.9	4.5 - 7.2
6-9 days 2.8 2.1 - 3.5 3.7 2.9 - 4.6 4.1 3.0 - 5.2 10-19 days 6.0 4.9 - 7.1 8.7 7.4 - 9.9 9.1 7.6 - 10.7 20-29 days 2.6 1.9 - 3.3 3.2 2.5 - 3.9 3.6 2.6 - 4.6 Entire month 6.3 5.4 - 7.2 6.3 5.3 - 7.4 5.6 4.5 - 6.7 Days Days Average 4.0 3.6 - 4.3 4.5 4.1 - 4.8 4.5 4.1 - 4.9 Question Est. % 95% CI Need special medical equipment day 12 10.6 - 13.1 Screen hours per day, not including work day 16 16 14.4 - 17.5 2 3 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 6.7 0.8 9 or more 6.0 4.7 - 7.3 Hours	3	4.4	3.5 - 5.4	3.0	2.3 - 3.7	4.5	3.2 - 5.8
10-19 days 6.0 4.9 - 7.1 8.7 7.4 - 9.9 9.1 7.6 - 10.7 20-29 days 2.6 1.9 - 3.3 3.2 2.5 - 3.9 3.6 2.6 - 4.6 Entire month 6.3 5.4 - 7.2 6.3 5.3 - 7.4 5.6 4.5 - 6.7 Days Days Average 4.0 3.6 - 4.3 4.5 4.1 - 4.8 4.5 4.1 - 4.9 Question Est. % 95% CI Need special medical equipment 43 12 10.6 - 13.1 Screen hours per day, not including work 44 0 3.0 2.3 - 3.8 1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 6.5 7 or 8 9 or more 6.0 4.7 - 7.3 Hours	4-5 days	4.4	3.5 - 5.3	6.5	5.5 - 7.6	5.6	4.3 - 6.8
20-29 days	6-9 days	2.8	2.1 - 3.5	3.7	2.9 - 4.6	4.1	3.0 - 5.2
Entire month 6.3 5.4 - 7.2 6.3 5.3 - 7.4 5.6 4.5 - 6.7 Days Average 4.0 3.6 - 4.3 4.5 4.1 - 4.8 4.5 4.1 - 4.9 Question Est. % 95% CI Need special medical equipment ⁴³ Screen hours per day, not including work ⁴⁴ 0 3.0 2.3 - 3.8 1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 7 or 8 9 or more Hours Hours	10-19 days	6.0	4.9 - 7.1	8.7	7.4 - 9.9	9.1	7.6 - 10.7
Days Days Average 4.0 3.6 - 4.3 4.5 4.1 - 4.8 4.5 4.1 - 4.9 Question Est. % 95% CI Need special medical equipment ⁴³ 12 10.6 - 13.1 Screen hours per day, not including work ⁴⁴ 3.0 2.3 - 3.8 1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours	20-29 days	2.6	1.9 - 3.3	3.2	2.5 - 3.9	3.6	2.6 - 4.6
Average 4.0 3.6 - 4.3 4.5 4.1 - 4.8 4.5 4.1 - 4.9 Question Est. % 95% CI Need special medical equipment ⁴³ Screen hours per day, not including work ⁴⁴ 0 3.0 2.3 - 3.8 1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours	Entire month	6.3	5.4 - 7.2	6.3	5.3 - 7.4	5.6	4.5 - 6.7
Question Est. % 95% CI Need special medical equipment ⁴³ 12 10.6 - 13.1 Screen hours per day, not including work ⁴⁴ 3.0 2.3 - 3.8 1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours		Days		Days		Days	
Need special medical equipment ⁴³ Screen hours per day, not including work ⁴⁴ 0 3.0 2.3 - 3.8 1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 7 or 8 9 or more Hours	Average	4.0	3.6 - 4.3	4.5	4.1 - 4.8	4.5	4.1 - 4.9
Screen hours per day, not including work ⁴⁴ 0	Question					Est. %	95% CI
0 3.0 2.3 - 3.8 1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours	Need special me	edical equ	ipment ⁴³			12	10.6 - 13.1
0 3.0 2.3 - 3.8 1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours	Screen hours pe	er day, not	including work	44			
1 16 14.4 - 17.5 2 23 21.4 - 24.9 3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours	•	,,	· ·			3.0	2.3 - 3.8
3 18 16.7 - 20.0 4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours						16	14.4 - 17.5
4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours	2					23	21.4 - 24.9
4 15 13.1 - 16.2 5 8.2 7.1 - 9.4 6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours	3					18	16.7 - 20.0
6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours						15	13.1 - 16.2
6 5.5 4.5 - 6.5 7 or 8 5.1 4.1 - 6.0 9 or more 6.0 4.7 - 7.3 Hours	5					8.2	7.1 - 9.4
9 or more 6.0 4.7 - 7.3 Hours						5.5	4.5 - 6.5
<u>Hours</u>	7 or 8					5.1	4.1 - 6.0
	9 or more					6.0	4.7 - 7.3
Average number of screen hours per day 3.7 3.5 - 3.9						Hours	
	Average nui	mber of so	reen hours per	day		3.7	3.5 - 3.9
Question Est. % 95% CI	Question					Est. %	95% CI
Did physical activity in past month, not including work ⁴⁵ 73 71.1 - 75.1	Did physical act	ivity in pas	st month, not in	cluding work	45	73	71.1 - 75.1
Body mass category ⁴⁶	Body mass cate	gory ⁴⁶					
Underweight 1.4 0.9 - 2.0						1.4	0.9 - 2.0
Normal 31 29.2 - 33.4	_					31	
Overweight 34 32.4 - 36.6	Overweight					34	32.4 - 36.6
Obese 27 24.8 - 28.7	_					27	24.8 - 28.7
Morbidly obese 6.1 5.1 - 7.0	Morbidly ob	oese				6.1	5.1 - 7.0

^{*}Note: 254 (5.1%) of the 4,955 responses to that question were "don't know" or "refused."

Physical Activity, Work Wellness

The following items address "moderate physical activities," which are activities that increase a person's breathing or heart rate, such as walking, bicycling, vacuuming or gardening.

Question	Est. %	95% CI
Ever do at least 10 minutes of moderate activities? ⁴⁷ Days per week with at least 10 minutes of moderate activity? ⁴⁸	81	79.6 - 83.1
1 or 0 days	3.6	2.6 - 4.7
2	9.5	8.2 - 10.9
3	17	15.5 - 18.9
4	13	11.8 - 15.0
5	17	15.4 - 18.9
6	5.5	4.4 - 6.5
7	34	31.3 - 35.9
	<u>Days</u>	
Average number of days	4.8	4.7 - 4.9
Question	Est. %	95% CI
Time spent per day doing moderate activity ⁴⁹		
0 to under 15 minutes	4.1	3.2 - 5.0
15 to under 20 minutes	4.5	3.6 - 5.5
20 to under 30 minutes	9.7	8.3 - 11.1
30 to under 45 minutes	22	20.2 - 24.1
45 minutes to under 1 hour	4.8	3.7 - 5.9
1 hour to under 2 hours	29	26.8 - 31.0
2 hours to under 3 hours	17	14.9 - 18.9
3 hours or more	8.8	7.5 - 10.2
	<u>Minutes</u>	
Average number of minutes per day	66	63.8 - 68.3
Question	Est. %	95% CI
Employment status ⁵⁰		
Employed for wage/self-employed	56	54.0 - 58.2
Out of work	10	9.1 - 11.8
Unable to work	8.7	7.6 - 9.8
Homemaker/student	9.1	7.9 - 10.2
Retired	16	14.2 - 17.2
Usual activity during employment ⁵¹		
Sitting or standing	55	52.6 - 58.4
Walking	25	22.7 - 27.7
Heavy labor/physically demanding work	19	16.8 - 21.8
Workplace has wellness program ⁵²	54	50.9 - 56.9

Question	Est. %	95% CI
Supervisor support for workplace's wellness program ⁵³		
Strongly supportive	57	52.7 - 61.2
Somewhat supportive	20	16.7 - 24.2
Neutral	20	17.2 - 23.6
Somewhat unsupportive	0.5	0.0 - 1.3
Strongly unsupportive	1.6	0.6 - 2.6
*Note: 78 (6.5%) of the 1,197 responses to that question were "don't kn	ow" or "refused.	n
Health Care Access		
Question	Est. %	95% CI
Have health care coverage ⁵⁴	77	74.9 - 79.0
Have one usual health care provider ⁵⁵	65	63.4 - 67.6
Did not get health care due to cost in past 12 months ⁵⁶	23	21.0 - 24.8
Did not fill prescription due to cost in past 12 months ⁵⁷	25	23.5 - 27.4
Saw dentist due to pain in past 12 months ⁵⁸	24	21.9 - 25.7
Feels respected by health care provider ⁵⁹	94	93.2 - 95.7
*Note: 439 (8.8%) of the 5,013 responses to that question were "don't k	now" or "refused	d."
Needs help reading medical instructions ⁶⁰		
Never	78	76.4 - 79.9
Occasionally	11	9.7 - 12.3
Sometimes	6.8	5.7 - 7.9
Frequently	1.3	0.7 - 1.9
Always	2.8	2.1 - 3.5
Chronic Disease		
Question	Est. %	95% CI
Ever been diagnosed with ⁶¹		
Heart attack, angina or coronary heart disease	7.7	6.7 - 8.7
Respondent has current asthma diagnosis	11	9.6 - 12.1
Depression or dysthymia	21	19.4 - 22.8
Diabetes or high blood sugar	14	12.6 - 15.5
Hypertension or high blood pressure, not during pregnancy	31	28.9 - 32.8
High blood cholesterol, not during pregnancy	24	22.3 - 25.8
Percent of respondents by number of those chronic medical cond	itions	
No to all medical conditions	41	39.1 - 43.4
Yes to one medical condition	27	24.9 - 28.6
V · · · · · · · · · · · · · · · · · · ·	22	204 240

Yes to more than one medical condition

30.1 - 34.0

32

Health Behaviors

Question	Est. %	95% CI
Ever smoked cigarettes ⁶²	49	47.1 - 51.4
Currently smoke ⁶³	29	26.5 - 30.7
Tried to quit smoking in past year (% of current smokers) ⁶⁴	48	44.7 - 51.2
Days drank any alcohol in past 30 days ⁶⁵		
0	49	46.7 - 51.1
1	12	10.2 - 12.9
2	8.1	6.9 - 9.3
3	4.9	3.9 - 5.8
4-5 days	8.8	7.6 - 9.9
6-9 days	3.5	2.8 - 4.2
10-19 days	7.1	6.0 - 8.2
20-29 days	3.8	3.0 - 4.6
Entire month	3.4	2.6 - 4.1
	<u>Days</u>	
Average number of days	3.8	3.5 - 4.1
Question	Est. %	95% CI
Number of drinks, on days when you drink ⁶⁶		
0	0.4	0.0 - 0.8
1	38	35.4 - 40.9
2	32	29.2 - 34.7
3	14	12.2 - 16.5
4	6.0	4.6 - 7.5
5	4.1	2.9 - 5.3
6 or more	5.0	3.6 - 6.3
	<u>Drinks</u>	
Average number of drinks	2.3	2.2 - 2.4
Question	Est. %	95% CI
Days with binge drinking in past 30 days ⁶⁷		
0	71	68.2 - 73.6
0 1	71 10	8.2 - 11.8
2	5.8	4.3 - 7.2
3	2.7	1.7 - 3.6
4	2.6	1.7 - 3.6
5	2.6	1.5 - 3.7
6 or more	5.3	4.0 - 6.7
o or more		7.0 0.7
	<u>Days</u>	
Average number of days	1.3	1.1 - 1.5

Question	Est. %	95% CI
Any abuse in household in past 12 months ⁶⁸	5.4	4.4 - 6.5
Firearm in household ⁶⁹	22	20.1 - 23.4
Household member ever had medication addiction ⁷⁰	3.5	2.7 - 4.2
Demographics		
Question	Est. %	95% CI
Education level ⁷¹		
Never attended school	0.4	0.1 - 0.7
Grade 1 though 8	4.3	3.4 - 5.3
Some high school	11	9.5 - 12.3
High school graduate or GED	32	29.4 - 33.6
Some college or technical school	26	24.5 - 28.4
College graduate	18	16.4 - 19.4
Post-graduate education	8.6	7.5 - 9.6
Primary household language is not English ⁷²	16	13.9 - 17.4
Race and Ethnicity ⁷³		
White non-Latino	54	52.0 - 56.3
Black non-Latino	27	25.4 - 29.4
Latino	13	11.0 - 14.2
Asian non-Latino	0.6	0.3 - 0.9
American Indian non-Latino	0.9	0.5 - 1.4
Hawaiian/Pacific Islander non-Latino	0.1	0.0 - 0.2
Other race/ethnicity	1.6	1.1 - 2.2
Two or more races, non-Latino	1.8	1.2 - 2.4
Annual household income ⁷⁴		
\$0 - < \$10,000	9.1	7.7 - 10.5
\$10,000 - < \$15,000	8.0	6.8 - 9.2
\$15,000 - < \$20,000	12	10.1 - 13.3
\$20,000 - < \$25,000	14	12.5 - 16.4
\$25,000 - < \$35,000	14	12.2 - 15.2
\$35,000 - < \$50,000	14	12.3 - 15.2
\$50,000 - < \$75,000	12	10.8 - 13.4
\$75,000 - < \$100,000	7.5	6.5 - 8.5
=> \$100,000	9.7	8.5 - 10.9

^{*}Note: 611 (12.2%) of the 5,013 responses to that question were "don't know" or "refused."

Question	Est. %	95% CI
Household income below federal poverty guideline ⁷⁵		
No	64	62.2 - 66.7
Borderline	13	11.5 - 15.0
Yes	22	20.3 - 24.3

^{*}Note: 521 (10.4%) of the 5,013 responses to that question were "don't know" or "refused."

Interviewer Notes

290 of 5,013 interviews (5.8%) were conducted in Spanish.

1,513 of 5,013 respondents (30%) were contacted via cellphone. The remainder were contacted via landline phone.

Appendix D: Methods

Survey Purpose and Design

From June 1 to Sept. 12, 2012, a random sample telephone survey was conducted among 5,013 county respondents by the Survey Research Center at IUPUI. The purpose of the survey was to assess community health needs for Marion County and to better understand the health risk profile of Marion County residents.

The questionnaire was developed by the Marion County Public Health Department in collaboration with the Community Health Assessment Steering Committee, which ranked the importance of various sections and suggested additions to the survey. Survey items were taken from standard instruments, including the CDC's Behavioral Risk Factor Surveillance System questionnaire and the National Health Interview Survey.

Respondents were informed at the outset of the phone call that their participation was voluntary and confidential. Each respondent was informed that he or she would have an opportunity to be entered for a drawing to receive a \$50 Marsh Supermarkets gift card. One hundred respondents who completed this survey and said they would be willing to receive a gift card were selected at random to receive a gift card.

The average interview lasted for approximately 16 minutes. All telephone interviews were conducted by experienced and supervised interviewers. The survey totaled about 20 minutes for the 1,339 respondents in households with children ages 5-17, who answered some 18 additional items concerning a randomly selected child. The child was selected by asking the adult to refer to the child living in the household who had the most recent birthday.

The adult household member with the most recent birthday answered items related to composition of the household, neighborhood safety, the ability to walk throughout the neighborhood, access to key services such as grocery stores and public transportation, and health care access. Survey topics also included self-reported height and weight, a chronic conditions list, physical activity and health habits, mental health, unmet care needs and demographics.

Of the 5,013 interviews, 443 self-identified as Hispanic/Latino (8.84%) and 1,273 self-identified as black (25.4%). These weighted sample statistics of 46% men and 53% women closely represent Marion County's Census 2010 adult population (45.3% men, 54.7% women). The breakdown by age also approximates that of the county, in that 24.6% of the weighted sample is between 18 and 29 years old (vs. 25% in the 2010

Census), and 13.1% of respondents are age 65 and over (resembling the county's population of 14.3%). Households with children ages 5 to 17 made up 34% of the weighted sample, compared to 38% of households with children ages 5-17 in the county population. The children's survey was further weighted by the number of children in the household to better represent the child population of 5- to 17-years-old in Marion County.

Sampling Frame

A random sample of landline (n=24,119) and cellphone (n= 26,981) numbers were purchased from Survey Sampling, Inc. The cellphone sample, drawn from cellphone billing addresses in the county, increased the representation of younger and minority residents, adding to the precision of subpopulation-specific analyses. County-level landline numbers were pre-screened for disconnected numbers prior to being sent to the Survey Research Center at IUPUI (SRC) and came with census block group identification attached to the sample record.

Interviewers asked all respondents their county of residence, whether they were over 18 years of age and, if part of a cellphone sample, whether they were driving at the time (these were re-contacted later). Eligible respondents were asked if they preferred to be interviewed in English or Spanish (290 interviews were completed in Spanish; 4,723 interviews were in English).

These two random samples were supplemented with a landline telephone oversample of likely Latinos (n=3,228) purchased from Geoscape, a company specializing in sampling racial/ethnic groups across the country. It provided a sample of likely Latinos based on last name, first name and residence. Block group was also attached to all sample records for this Latino oversample.

The cellphone sample had completed surveys for 1,513 respondents, an average 37.8 attempts per complete and a response of 13.1%. The landline sample had 3,300 completed surveys (23.7 attempted calls per complete) for a response rate of 22.2%. The Latino oversample had 200 completes (29.3 attempted calls per complete) with a response rate of 15.5%. The response rates are standard for each population given the survey's length. Overall, SRC interviewers dialed 141,217 times to 54,328 telephone numbers to get 5,013 completed interviews.

Weighting of Survey Responses

Responses were weighted according to probabilities of being in the cellphone, landline and Latino oversample sample frames. Analyses were performed using SAS® software procedures for analysis of data from complex, stratified surveys.

Sample design weights indicate the number of adults in Marion County each respondent in the study represents. Our sample weights adjust for the overlapping dual frame sampling design. Compositing weight adjustment factors were used to account for the fact that some adults had the potential to be sampled through both the landline and cellphone sampling frames. These calculations are based on random selection of one adult from each landline phone number (representing a household) that participated, and also allow for sharing of a single cellphone by two or more adults in the same household.

Independent cellphone and landline samples were drawn from random-digit dialed (RDD) frames that overlap in their coverage. As such, some Marion County adults (i.e. those with both cellphones and landline phones) had the potential to be selected from more than one frame. A large portion of Marion County adults fell into this category, so we had to adjust for differential probabilities of selection based on phone service type (as well as a small oversample of the Latino population, which will be discussed later).

Marion County's adult population falls into four total categories:

- 1. **No telephone service at all.** This represents a very small portion of the adult population (based on National Health Statistics Reports (NHSR) estimates, approximately 2.1%). We were not able to make sampling adjustments for this population.
- 2. **Landline service only.** This is a continuously declining group: based on NHSR estimates and interpolation, approximately 5% of the Marion County adult population.
- 3. **Cell service only.** A rapidly increasing proportion of adults fall into this category. Based on NHSR estimates and interpolation, it represents 44% of the Marion County adult population.
- 4. **Both landline and cell service.** Adults most commonly fall into this category. Based on NHSR estimates and interpolation, approximately 49% of the Marion County adults fall into this group.

First, we focused on landline frame adjustments. We took into account the household selection probability, the number of landlines in the household and, because we randomly selected one adult from each household, the within-household selection probability. For respondents with a landline only, the combination of these calculations established their score for the survey weight.

Second, we made cellphone frame adjustments. In these calculations, we considered the phone number selection probability and the within-cellphone selection probability (i.e. the number of adults sharing the same cellphone number). For cellphone only respondents, the combination of these two probabilities established their score for the survey weight. For dual use respondents, i.e. those who had both landline and cell service, we added the two cumulative probabilities together to establish their survey weight.

Third, we accounted for our oversample of Latino respondents. We purchased a sample of landline phone numbers that had a sampling frame based on surname, first name and geographic location. For the 200 Latino respondents that we obtained from this sample, we took the probability of selection given their geographic location's representation of Latino residents into consideration. This means that we added this probability (based on quartiles) to the weight determined by their phone selection group: landline only or both landline and cell service.

The resulting sample weights range from 4.50 to 3,181.50 with an average of 132.06. The sample weights for the landline sample range from 4.50 to 324.00 with an average of roughly 62. The cellphone weights range from 36.00 to 3,181.50 with an average of 294.64. The average weights for cellphone only households are the highest while the average weights for landline only households are the lowest because the sample consisted only of 1,513 cellphone numbers. Researchers often have to follow this type of sample design weight with raking procedures; however, we did not have cause to do so. Analyses indicate that the sampling frame based weights effectively adjust our sample to correspond closely to Marion County's demographic breakdown among adults.

The sample statistics closely represent Marion County's population. The Marion County adult population consists of 45.3% men and 54.7% women. Just over 46% of this weighted sample is male, while 53% is female. Also, the sample characteristics by age closely approximate those of Marion County overall, according to the 2010 Census data. One quarter of the Marion County adult population is between 18-29 years old, and this group is 24.6% of the weighted sample. Finally, respondents 65 and over are 13.1% of

the final weighted sample, which resembles the Marion County percentage for this population of 14.3%.

ADD = Attention Deficit Disorder

ADHD = Attention Deficit or Hyperactivity Disorder

¹ Item 1: Hello, I'm calling from IUPUI to help the Marion County Public Health Department conduct a study of health issues and needs in our community. We will ask over 5,000 residents about their neighborhoods, health history, and factors affecting their health. One hundred of the 5,000 people who complete this survey will receive a \$50 Marsh gift card, picked randomly at the completion of the survey. First, I would like to verify that you do live in Marion County, Indiana? (If "Yes", continue).

² Item 3: For the purposes of this survey, I would like to speak with the adult in your household who has had the most recent birthday? Is this person available?

³ Item 4: Are you currently driving? (If "yes", record a callback time.)

⁴ Item 5: Record respondent's gender. If unsure, "I'm sorry but I have to ask, are you a man or a woman?"

⁵ Item 6: Next, I'd like to ask you if you are 30 years old or older?

⁶ Item 88: How old are you currently?

⁷ Item 7: Please tell me how many people live in this household, including all children and anyone who normally lives here even if they are not here now, like someone who is away.

⁸ "Total" is from item 7 ("Please tell me how many people live in this household, including all children and anyone who normally lives here even if they are not here now, like someone who is away."). "5-17" is from item 9 ("How many of these household residents are children aged 5 years to under 18 years?"). "65+" is from item 8 ("How many of these household residents are over age 65?"). "18-64" is calculated as item 2 ("How many people living in your household are 18 or older?") minus item 8, with negative results treated as "unknown." "0-4" is calculated as item 7 minus items 2 and 9, with negative results treated as "unknown."

⁹ Item 10: Next, we would like to talk to you about one of your children between the ages of 5 and 17 years old. Please think about your child who has had the most recent birthday. What are this child's initials? (The initials will only be used to ask follow-up questions.)

¹⁰ Item 11: Are you [INITIALS]'s primary caregiver?

¹¹ Item 12: How old is this child?

¹² Item 13: Is [INITIALS] a boy or a girl?

¹³ Items 14 and 15 ("How tall is [INITIALS]?" "How much does [INITIALS] weigh?") were used to calculate body mass index.

¹⁴ Items 16: Does the child have any kind of health care coverage, including health insurance, prepaid plans such as HMOs [Health Maintenance Organizations], or government plans such as Medicaid (S-CHIP, Indiana's Children's Health Insurance Program known as or Hoosier Health Wise)?

¹⁵ Item 17: Is this health care coverage Hoosier Healthwise/Medicaid, private insurance, HMO, or something else?

¹⁶ Item 18: Do you have one person that you think of as [INITIALS]'s personal doctor or nurse?

¹⁷ Item 19: In the past 12 months, has the child seen a dentist for any routine dental care, including checkups, screenings, and sealants? Please include all types of dentists, such as orthodontists, oral surgeons, and all other dental specialists.

¹⁸ Lead-in to items 20 through 26: "Now I am going to ask you about [INITIALS]'s health. I am going to read a list of conditions. Please tell me whether a doctor, nurse, or other health professional has EVER told you that [INITIALS] had any of the following?" For asthma, responses of "yes" were followed by the question, "Does s/he still have asthma?"

[&]quot;Other medical conditions" include "any condition requiring additional medical care or medications than is usual for children his/her age."

¹⁹ Notable health conditions include those listed above (hypertension, diabetes or pre-diabetes, depression or anxiety, ADD or ADHD, or "any condition requiring additional medical care or medications than is usual for children his/her age").

- ²⁰ Item 27: In the past 12 months, how many times has [INITIALS] been seen in the emergency room?
- ²¹ Combines item 28 ("On an average school day, how many hours does [INITIALS] watch TV?") and item 29 ("On an average school day, how many hours does [INITIALS] play video or computer games or use a computer for something that is not school work? Include activities such as Xbox, PlayStation, Nintendo DS, iPod touch, Facebook, and the Internet.").
- ²² Item 30: Does [INITIALS] get 60 minutes of activity per day? Include times in physical education classes, sports, active play, dance or other sports lessons, riding bike or scooter.
- ²³ Item 31: Does anyone smoke inside [INITIALS] home? Please include household residents or visitors.
- ²⁴ Item 32: In the past week, how did you get to most places you needed to go? Would you say you...
- ²⁵ Lead-in to items 33-35: Next, I am going to read statements about your neighborhood. Please let me know if you strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree or strongly disagree.
- ²⁶ Item 33: I feel safe in my neighborhood. Do you...
- ²⁷ Item 34: People in my neighborhood are willing to help each other. Do you...
- ²⁸ Item 35: In my neighborhood, there are many vacant, abandoned, or rundown properties. Do you...
- ²⁹ Item 36: Does your neighborhood have sidewalks or paved paths?
- ³⁰ Item 37: Could someone use the sidewalks/paths using a wheelchair, walker, stroller, or other mobility aid without difficulty?
- ³¹ Item 38: Are there street lights that light the sidewalks/paths at night?
- 32 Item 39: Do your sidewalks/paths connect to other major streets or neighborhoods?
- ³³ Lead-in to items 40 through 43: Now I'd like you to think about the places that are within a 10 minute walk of your home. I am going to read a list of places. Please tell me whether each of them are within a 10 minute walk from your home.
- ³⁴ Item 44: In a typical week, where do you do MOST of your shopping for food items?
- ³⁵ Item 45: In the past 7 days how many times did you eat fast food? Include fast food meals or snacks eaten at work, at home, in the car, or at fast-food restaurants, carryout or drive through.
- ³⁶ Item 46: Do you look for nutrition labels or symbols (like a heart symbol) on menu items at restaurants and fast food establishments?
- ³⁷ Item 47: Which situation best describes your household over the past 12 months?
- 38 Item 48: In the past 12 months, have you or others in your household used the following services?
- ³⁹ Item 49: Would you say that in general your health is...
- ⁴⁰ Item 50: Now think about your physical health, which includes physical illness and injury. How many days during the past month was your physical health NOT good?
- ⁴¹ Item 51: Now think about your mental health, which includes stress, depression and problems with emotions. How many days during the past 30 days was your mental health NOT good?
- ⁴² Item 52: During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?
- ⁴³ Item 53: Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or special telephone? This includes occasional use or use in certain circumstances.
- ⁴⁴ Item 54: How many hours in a day, on average, do you spend watching TV, videos, DVDs, or using the computer outside of work?
- ⁴⁵ Item 55: During the past month, other than your regular job, did you participate in any physical activities or exercises, such as running, calisthenics, golf, gardening, or walking for exercise?
- 46 Items 56 and 57 ("How tall are you now without shoes?", "How much do you weigh now without shoes?") were used to calculate body mass index. The BMI ranges per category are: < 18.5 for Underweight, 18.5 to < 25 for Normal, 25 to < 30 for Overweight, 30 to < 40 for Obese, and 40+ for Morbidly Obese.
- ⁴⁷ Item 58: Do you do moderate activities for at least 10 minutes at a time? Moderate activities include brisk walking, bicycling, vacuuming, gardening or anything else that causes some increase in your breathing or heart rate?

⁴⁸ Item 59: How many days per week do you do these moderate activities for at least 10 minutes at a time?

⁴⁹ Item 60: How much total time per day do you spend doing these moderate activities? Again, please do not include any time spent at work.

⁵⁰ Item 61: Are you currently...

⁵¹ Item 62: Which of the following best describes what you do at work? Would you say you are...

⁵² Item 63: Does your work place have on-site policies or programs to improve employee health or wellness?

⁵³ Item 64: To what degree does your immediate supervisor support your participation in on-site health and wellness programs at work? Would you say that your supervisor [READ CHOICES BELOW] of you participating in health and wellness programs at work?

⁵⁴ Item 65: Do you have any kind of health care coverage, including health insurance, prepaid plans (such as HMOs, or government plans such as Medicare, CHAMPUS or Medicaid)?

⁵⁵ Item 66: Do you have one person you think of as your personal doctor or health care provider? If "No," ask: "Is there more than one, or is there no person who you think of as your personal doctor or health care provider"?

⁵⁶ Item 67: Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?

⁵⁷ Item 68: Was there a time in the past 12 months when you needed prescribed medication but went without because of cost?

⁵⁸ Item 69: In the past 12 months, have you been to a dentist or other health professional for pain in your teeth, mouth or gums?

⁵⁹ Item 70: Do you feel accepted or respected at your current health care provider?

⁶⁰ Item 71: How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy? Would you say...

⁶¹ "Now I am going to read a list of conditions. Please tell me whether a doctor, nurse, or other health professional has EVER told you that you had any of the following." Item 72: Heart attack, angina, or coronary heart disease? Item 73: Asthma? IF "yes," ask "Do you still have asthma?" Item 74: A depressive disorder (including major depression, dysthymia, or minor depression)? Item 75: Diabetes (or high blood sugar)? If "yes" and respondent is a woman, ask "were you told this during a pregnancy?" Item 76: Hypertension (or high blood pressure)? If "yes" and respondent is a woman, ask "were you told this during a pregnancy?" Item 77: High blood cholesterol?

⁶² Item 78: Have you ever smoked at least 100 cigarettes in your entire life?

⁶³ Item 79: Do you now smoke every day, some days, or not at all?

⁶⁴ Item 80: During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?

⁶⁵ Item 81: During the past 30 days, how many days did you have at least one drink of any alcoholic beverage, such as beer, wine, malt beverage or liquor? If respondent says "I drink about once a week" say "So four times this past month?"

⁶⁶ Item 82: On the days when you did drink in the past 30 days, how many drinks did you have on average? One drink would be a 12-ounce beer, a 5-ounce glass of wine or a drink with one shot of liquor.

⁶⁷ Item 83: How many times during the past 30 days did you have 4 (if woman) 5 (if man) or more drinks on any occasion? Please consider all types of alcohol.

⁶⁸ Item 84: In the past 12 months, have you or a household member been the victim of violence or physical, sexual, or verbal abuse?

⁶⁹ Item 85: Do you keep a hand gun or other firearm in or around your home?

⁷⁰ Item 86: Have you or a household member ever been addicted to prescription medicines or pain pills?

⁷¹ Item 87: What is the highest grade or year of school you completed?

72 Item 89: Do you primarily speak another language besides English in your home?

⁷³ Persons indicating Hispanic ethnicity are in the "Hispanic" category. All other persons are categorized per the race they indicated. This combines item 90 ("Are you of Hispanic or Latino origin, such as Mexican

American, Latin American, Puerto Rican or Cuban?" with item 91 ("Which of these groups would you say best represents your race?").

⁷⁴ Item 92: Is your annual household income ...

⁷⁵ Based on item 92 ("Is your annual household income ...") and item 7 ("Please tell me how many people live in this household, including all children and anyone who normally lives here even if they are not here now, like someone who is away"). "Borderline" households reported income in a range that bridged the poverty threshold; these households had incomes no more than a few thousand dollars above or below the poverty threshold.

PUBLIC HEALTH RISK PREVENTION and PREPAREDNESS CAPABILITIES



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Introduction

In the spring of 2012, the Marion County Public Health Department (MCPHD) convened a steering committee of providers, consumers and experts in the public health field to guide MCPHD in a Community Health Assessment (CHA) process.

The goals of the CHA were to:

- Describe the community health status of Marion County, with comparisons to its urban peers and national standards (where applicable)
- 2) Identify important health trends or disparities
- 3) Identify significant causes of poor health and the pathways between social determinants of health,¹ intermediate outcomes and final health outcomes
- 4) Prioritize the identified issues.

The work group also identified where potentially important issues could not be ranked due to data limitations.

Purpose of CHA

- Increase awareness of community health issues
- Describe social determinants & risk factors
- Compare Marion County to peer cities and nation
- Identify health disparities in county
- Prioritize community health needs
- Provide database for MCPHD's Community Health Improvement Plan
- Provide basis for planning programs& policies
- Engage coalitions and partners
- Improve health status of community

Next Steps

All CHA reports will form a baseline for the upcoming Community Health Improvement Plan . This report is being disseminated among MCPHD's programs and partners and other public health organizations. It will also be posted on the MCPHD's and other partners' websites. This chapter focuses on the prevention activities in Marion County that strive to protect both the environment and the population. Rather than age-based health summaries, this chapter focuses on the county as a whole.

Public Health

10 essential public health services

Developed in 1994 by the Core Public Health Steering Committee (consisting of representatives from U.S. public health service agencies and related public health entities), the 10 essential public health services create a framework to define and guide public health services and actions. Through this framework, a nationally recognized action plan is accessible and can be readily applied to any state and local public health agency.

The 10 services are:

- 1) **Monitor** health status to identify and solve community health problems.
- 2) **Diagnose** and investigate health problems and health hazards in the community.
- 3) **Inform, educate and empower** people about public health issues.
- 4) **Mobilize** community partnerships and action to identify and solve health problems.
- 5) **Develop policies and plans** that support individual and community health efforts.
- 6) **Enforce** laws and regulations that protect health and ensure safety.
- 7) **Link** people to needed personal health services and assure the provision of health services when otherwise unavailable.
- 8) **Assure** competent public and personal health care workforce.
- 9) **Evaluate** effectiveness, accessibility and quality of personal and population-based health services.
- 10) **Research** new insights and innovative solutions to health problems.

Background

Marion County Demographics and Health Determinants

The MCPHD employs the Indiana County Health Rankings system to evaluate Marion County's overall health status in terms of key health indicators and social determinants of health, such as education, poverty and health care access. The 2012 County Health Rankings for Marion County can be seen in the table below or by accessing www.countyhealthrankings.org.

Broad population indicator measures from the County Health Status Indicator website place Marion County in context with other large urban areas:² http://www.healthindicators.gov/Indicators.

The table compares Marion County indicators with national rates and the Healthy People 2020 objectives, a national benchmark. In addition, it compares the county with five peer Midwestern urban counties whose populations range between 500,000 and 1 million: Louisville, KY (Jefferson Co.), Cincinnati, OH (Hamilton Co.), Columbus, OH (Franklin Co.), Nashville, TN (Davidson Co.) and Milwaukee, WI (Milwaukee Co.).

Shading is used to highlight the areas where Marion County performs worse than its peer counties. One such example is crime. Using three years of data from the Uniform Crime Reporting program, the County Health Rankings report Marion County as having 1,155 violent crimes per 100,000 population. Violent crimes are defined as offenses that involve face-to-face confrontation between the victim and the perpetrator including homicide, forcible rape, robbery and aggravated assault.

As pointed out in the Robert Wood Johnson County Health Rankings Report,³ which factors crime rates into overall health scores, high levels of violent crime compromise physical safety and psychological well-being. Crime rates also can deter residents from pursuing healthy behaviors outdoors, such as exercising. Additionally, some evidence indicates that increased stress levels may contribute to obesity prevalence, even after controlling for diet and physical activity levels.

2012 County Health Rankings	HP 2020 goal	National average	Peer county ⁴ran ge	Marion vs. Peers			
Social & economic factors							
High school graduation (average freshman graduation rate)	82.4%	74.9%	70%-83%	81%			
Some college (post-secondary education)	_	21.3%	56%-68%	58%			
% Unemployment	In development	10.8%	9%-15%	10%			
% Children in poverty	_	21.6%	24%-35%	31%			
% Inadequate social support	_	-	18%-26%	23%			
% Children in single-parent households	_	-	38%-49%	45%			
Violent crime rate per 100,000	Reduction goals are specific to crime	367 (Indiana)	582-1,323	1,155			
Environment							
Air Quality Index (AQI)	10 days AQI<100		3-33	12			
% Limited access to healthy foods	In development	-	3%-10%	5%			
% Fast food restaurants in neighborhood	_	-	50%-60%	55%			
Clinical care							
% Uninsured	0%	15.5%	14%-18%	18%			
Ratio of population to primary care physicians	-	-	589:1- 936:1	602:1			
Health behaviors							
% Adult smokers	12%	17%	20%-24%	26%			
% Obese adults	31%	27.2%	27%-34%	30%			
% Adults with physical inactivity	33%	24.2%	25%-29%	26%			
% Excessive drinking	25.3%	28.0%	19%-23%	16%			
Motor vehicle crash death rate per 100,000	12.4	13.8	9-16	12			
STI rate per 100,000 (chlamydia)	In development	586.7	568-1,040	753			
Teen birth rate (ages 15-19)*	36.2	41.2	47-61	67			
Health outcomes							
Mortality							
Premature death (Years of Potential Life Lost)	5,466	6,951	8,045- 10,061	9,229			
Morbidity							
% Low birth weight	8%	8.2%	9.0%-10.5%	9.2%			
http://www.countyhealthrankings.org/; http://healthypeople.gov/2020/default.aspx							

Infectious Disease Prevention and Monitoring

Immunizations & Vaccine Preventable Diseases

Immunizations, one of the most effective public health tools available, are often called the cornerstone of children's preventive health. Every year, recommendations for routine use of vaccines in children, adolescents and adults are developed by the Advisory Committee on Immunization Practices (ACIP). When adopted by the director of the U.S. Centers for Disease Control and Prevention (CDC), they become official CDC/Health and Human Services policy.⁵

Although the cost of health care, including vaccines, continues to rise, vaccines remain a cost-effective step in protecting the public's health. According to the Every Child by Two campaign, the economic benefits of several common vaccines far outweigh the costs. For example, as shown in the table below, every \$1 spent on MMR (measles, mumps, rubella) vaccines saves \$26 that would have been spent on treating individuals with the condition.

For every \$1 spent on:						
DTaP saves	\$27.00					
MMR saves	\$26.00					
H. Influenza type b saves	\$5.40					
Perinatal Hep B saves	\$14.70					
Varicella saves	\$5.40					
Inactivated Polio (IPV) saves	\$5.45					

A study⁷ detailing the economic advantages of vaccines can be accessed at: http://archpedi.jamanetwork.com/article.aspx?articleid=486191.

Additional vaccines have been added to the recommended list by ACIP since this last economic study was published; however, individual studies on each of those vaccines show the economic rewards are just as rich.

One such vaccine, first introduced in 2006, aims to prevent the human papillomavirus virus (HPV), the most common sexually transmitted infection (STI). It currently affects approximately 20 million Americans, with 6 million people becoming infected each year. HPV is so common that at least 50% of sexually active men and women get it at some point in their lives.⁸

There are more than 40 HPV types that can infect not only the genital area but also the mouth and throat. HPV can also cause genital warts and cancers, including vulvar, vaginal, penile, anal

^{*} County health ranking data for teen birth rate is for 1,000 live births among women ages 15-19. HP2020 goal is teen pregnancies in ages 15-17. At healthindicators.gov, birth rates for ages 15-19 for 2008 were: national, 41.4, Indiana, 43.7, and Marion County, 62.7.

and oropharyngeal cancers, though most people who become infected do not know they have it. This lack of symptoms is what makes this vaccine such a strong public health tool in fighting the spread of the virus.⁹

Another vaccine introduced in 2006 prevents rotavirus, the leading cause of severe acute gastroenteritis (vomiting and severe diarrhea) among children worldwide. Two different rotavirus vaccines are currently licensed for use in infants in the United States. Rotavirus vaccine was found to prevent almost all (85%-98%) severe rotavirus illness episodes and to prevent 74%-87% of all less severe rotavirus illness episodes during the first year of an infant's life. 10

Healthy People 2020 has set childhood vaccination targets of 90% for ≥ 1 dose of measles, mumps, rubella vaccine (MMR), ≥ 3 doses of hepatitis B vaccine (HepB), ≥ 3 doses of poliovirus vaccine, ≥ 1 dose of varicella vaccine, ≥ 4 doses of diphtheria, tetanus, and pertussis vaccine, ≥ 4 doses of pneumococcal conjugate vaccine, and the full series of *Haemophilus influenzae* type b vaccine. For these and other vaccines, the National Immunization Survey estimates coverage among U.S. children ages 19 to 35 months to be at or above national target levels for ≥ 1 dose of MMR (91.6%), ≥ 3 doses of HepB (91.1%), ≥ 3 doses of poliovirus vaccine (93.9%), and ≥ 1 dose of varicella vaccine (90.8%). Coverage with the more recently recommended vaccines continues to increase; however,

Estimated vaccination coverage for vaccination series (modified)* and selected individual vaccines among children aged 19–35 months, by state and local area — National Immunization Survey, United States, 2011†

State	MMR (≥1 doses)		DTaP (≥4 doses)		HepB (birth)§		HepA (≥2 doses)¶		Rotavirus**		Vaccine series (modified)	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
U.S. (national)	91.6	(±0.8)	84.6	(±1.0)	68.6	(±1.3)††	52.2	(±1.4)††	67.3	(±1.3)††	73.6	(±1.2)
Indiana	90.6	(±3.9)	82.2	(±5.5)	83.4	(±4.6)	50.5	(±6.7)	63.9	(±6.7)	70.1	(±6.3)

coverage levels vary by state, and differences in coverage by poverty level still exist. 11

Abbreviations: CI = confidence interval; MMR = measles, mumps, and rubella vaccine; DTaP/DT/DTP = diphtheria, tetanus toxoids, and acellular pertussis vaccine (includes children who might have been vaccinated with diphtheria, tetanus toxoids, and pertussis vaccine [DTP], and diphtheria and tetanus toxoids vaccine [DT]); HepB = hepatitis B vaccine; HepA = hepatitis A vaccine.

^{*} Includes \geq 4 doses DTaP/DT/DTP, \geq 3 doses of poliovirus vaccine, \geq 1 dose of any measles-containing vaccine, \geq 3 doses of HepB, \geq 1 dose of varicella vaccine, and \geq 4 doses of PCV, pneumococcal conjugate vaccine; *Haemophilus influenza* type B vaccine is excluded.

[†] Children in the 2011 National Immunization Survey were born during January 2008–May 2010.

^{§ 1} or more doses of HepB administered between birth and age 3 days.

^{¶ ≥2} doses HepA and measured among children aged 19–35 months.

While the data above include national and state rates, this survey does not sample at the county level enough to provide county-level statistics. The most recent data available for Marion County are from 2010, for teenagers ages 13-17. They show Marion County scoring comparably to national levels for both MMR and HepB but having an increased amount of varicella cases, or chicken pox.

In addition, Marion County has not been sampled enough in CDC's National Immunization Survey to provide county-level immunization coverage estimates. This is a data gap that should be addressed so that public health practitioners can strategically target populations who may not be adequately immunized.

Refugee Health

Since the 2005 Community Health Assessment, Marion County has become home to the country's largest resettlement of refugees from Burma (Myanmar). From 2009 through October 2012, Marion County has welcomed 4,380 refugees from Burma. This total represents 77% of all of the refugees arriving in Marion County in that time span. Exodus and Catholic Charities are two nonprofit refugee resettlement organizations operating under contracts with the U.S. government to provide refugees with rent, English language classes, job placement and training, and medical assistance.

The three major Burmese ethnic groups living in Indiana are the Karen, Karenni and Chin. The majority of the refugees living in Indianapolis are Chin. MCPHD is responsible for completing the initial health screening when the refugees arrive in the county. That initial assessment may prompt the staff to write referrals to other providers in the community for more in-depth care. MCPHD has partnered with the Chin Community Center to provide local care at a new clinic with easy access for many of the Burmese refugees. This collaboration will help alleviate some of the access to care issues for one of the vulnerable populations identified in Indianapolis. http://www.asianlearningcenter.org/images/uploads/Factoid%20for%20Burmese%20Community%20edited.pdf

Refugees from Iraq are the second most common refugee group arriving in Marion County, although their numbers are much smaller. From 2009 through October 2013, 177 refugees from Iraq have arrived in Marion County. This number represents 3% of all refugees arriving during that time span.

^{** ≥2} or ≥3 doses of rotavirus vaccine, depending on product type received (≥2 doses for Rotarix [RV1] and ≥3 doses for RotaTeq [RV5]).

^{††} Statistically significant increase in coverage compared with 2010 (p<0.05).

Tuberculosis Control

During 2011, there were 100 new cases of tuberculosis (TB) reported to the Indiana State Department of Health, an 11% increase from the previous year. However, TB cases have declined from 1,883 reported in 1956 to an all-time low of 90 cases reported in 2010. In 2011, TB cases were reported by over one-third of Indiana's 92 counties (n=34). Indiana's three most populous counties (Marion, Lake and Allen) accounted for nearly half (n=44, 44%) of all new cases.

Marion County's reported cases decreased to 30 cases in 2011 from 34 cases in 2010; Lake County reported 11 TB cases in 2011 from four in 2010; Allen County's caseload was reduced to three reported cases in 2011 from six in 2010. Marion and Lake counties exhibited higher incidence rates than the overall statewide rate of 1.5 per 100,000: Lake County, 2.2 per 100,000; Marion County, 3.3 per 100,000.¹³

The Tuberculosis Control Program in Marion County has partnered with local homeless shelters to increase screening for tuberculosis and has teamed up with several providers to provide directly observed therapy. Such strong collaborations help the county to keep tuberculosis at a low incidence.

Tattoo and Body Piercing Inspection Program

The Tattoo and Body Piercing Program is managed by the Department of Water Quality & Hazardous Materials Management (WQHMM). The department licenses and regularly inspects tattoo, body piercing and permanent makeup facilities. In addition, complaints regarding unlicensed and in-home tattooing are directed to WQHMM staff to investigate.

The purpose of this program is to minimize the risk posed by blood-borne pathogens to customers and employees. Unsanitary or unsafe work practices in these facilities can increase the chance of spreading blood-borne diseases, such as HIV, Hepatitis B and Hepatitis C. Infections and allergic reactions can also occur from these practices.

As of the 2012-2013 licensing year, there are 53 licensed tattoo and/or body piercing facilities in Marion County. The number of licensed facilities has steadily increased since the 2006-2007 licensing year, when just 33 facilities were licensed. These facilities are inspected at least annually, and monthly checks are conducted for the receipt of spore test results from each facility's sterilization equipment.

In the last five years, WQHMM has performed 1,053 inspections of these facilities. In addition, 76 site surveys were conducted for new facilities, and 130 complaints were received and investigated for reasons including unlicensed facilities, underage clients, in-home tattooing and sanitary maintenance.

Vector-borne Disease Control

Mosquito Control

West Nile Virus (WNV) has been a threat in Marion County as well as in the entire continental United States for more than 10 years. During that time, many equines, birds, mosquitoes and humans have tested positive for West Nile Virus. In 2012, Marion County had the highest number of WNV-positive mosquito pools and human cases since 2002, a result of both high heat and little rainfall.¹⁴

West Nile Virus is transmitted by mosquitoes. Milder symptoms for West Nile Virus include fever, headache, vomiting, swollen lymph glands and skin rash. Severe cases are rarer and include such symptoms as high fever, neck stiffness, stupor, tremors, convulsions, muscle weakness, paralysis and coma. In severe cases, its effects on the nervous system become progressively more evident (encephalitis, meningitis, etc.) and death can occur.

Marion County's Mosquito Control Laboratory samples mosquito larvae and identifies adults to help the Marion County Mosquito Control Program efficiently direct resources for effective control methods and pesticide usage.¹⁵

Rodent Control

In the past, MCPHD routinely followed Centers for Disease Control (CDC) guidance on how to conduct rodent surveys in urban areas. For more information on this process, visit http://www.cdc.gov/nceh/ehs/docs/ipm_manual.pdf. Since the rodent population in Marion County has been successfully contained in the previous two decades, this survey process is now reserved for geographic areas that have received several complaints, as well as targeted commercial areas that have a likelihood of attracting rodents. The emergence of hantavirus in the 1990s caused MCPHD to add mice to the species it controls through regular response and surveillance.

Surveys are conducted in off-peak months so the MCPHD rodent control staff can accurately confirm rodent populations have not surged. Autumn is typically the busiest time of year for the rodent control program. Advances in rodenticides have increased the efficiency of products, and the MCPHD department is now smaller than it was during the 1980s.

Currently, rodent control employees respond to an average of 2,500 complaints a year from the community, as well as referrals from other MCPHD departments and partnering agencies such as Indianapolis Downtown Inc. and the Indiana State Department of Health. MCPHD staff give an average of 30 presentations a year to local groups interested in rodent control initiatives.

In an effort to help residents prevent rodent infestations, MCPHD operates a hand-tool lending program. Community groups such as neighborhood associations and church groups are

welcome to borrow shovels, rakes and brooms from the department. The MCPHD rodent control employees deliver and pick up the tools. On average, over 100 tools are borrowed each year.

Built Environment: promoting health and sustainable living

Marion County Sidewalk Ordinance

Led by local public health coalitions and community leaders, concerns about the county's sidewalk infrastructure and its potential to benefit the health of communities led to the passage of a Sidewalk Amendment Bill in April 2008. Since then, the county and the City of Indianapolis have provided for additional installations and priority sidewalk projects.

Indianapolis Public Transportation Corporation/IndyGo

MCPHD continues to partner with local health coalitions to advocate for improved public transit within Marion County and the entire state by supporting expanded IndyGo routes, the Central Indiana Regional Transportation Authority and IndyConnect. MCPHD also maintains communication with state legislators and the governor about transit project options and funding.

Complete Streets Initiative

Health advocacy coalitions such as Health by Design, in collaboration with MCPHD and the Indiana State Department of Health, are working to develop and implement state and local Complete Streets policies throughout Indiana. Complete Streets are those designed and operated to enable safe access for all users – pedestrians, bicyclists, motorists and public transportation riders of all ages and abilities – in moving along and across roadways.

According to the City of Indianapolis, Marion County has about 68 miles of on-street bike lanes and an additional 70 miles of bike paths (including greenways and multi-use paths). More information about the city's sustainability plans can be accessed at: http://www.indy.gov/eGov/City/DPW/SustainIndy/Bikeways/Pages/BikewaysHome.aspx

Healthy Housing and Neighborhoods

Walkability

Walkability is the degree to which an area within walking distance of a property encourages walking for recreational or functional purposes. Research suggests that walkability can produce a variety of social, economic and environmental benefits such as increased physical activity, less air pollution and increased social capital in the form of community cohesion, trust and social activity.

According to the 2012 Community Health Assessment phone survey, ¹⁶ 91% of Marion County residents reported that a car or other private vehicle was their main source of transportation in the last seven days. Another 4% reported walking and 4% reported using public transportation. Less than 1% reported using a bicycle as a usual mode of transport.

There are approximately 3,150 miles of sidewalk in the county, counting each side of the road separately. ¹⁷ More than a quarter (28%) of residents reported not having paved walkways in their neighborhoods. The sidewalks that are present are not always smooth enough for wheelchairs and do not provide access to grocery stores or other services. This is an issue since 12% of people reported using special equipment. A quarter of residents reported not having lighted walkways in their neighborhoods.

More than a third (37%) of respondents said their homes are more than a 10-minute walk from a park, green space or playground. The majority (70%) live more than a 10-minute walk from a library or community center. About half report having a full-service grocery store or supermarket within a 10-minute walk of home. Respondents also said their homes were more than a 10-minute walk from a bus stop or some other public transportation.

Recreational facilities such as city parks offer another way to increase physical activity among residents. According to the 2012 City Park Facts report released by the Trust for Public Land, Indianapolis has 11,270 total park acres, which average to 13.6 acres per 1,000 residents. This is slightly higher than the average of 13.1 acres per 1,000 residents for most U.S. cities.

The City of Indianapolis reports \$30 in park operating expenditures per resident compared to a national average of \$59 per resident. Indianapolis reports \$5 in capital expenditures per resident compared to \$18 per resident nationally. This equates to \$35 in total park expenditures per Indianapolis resident vs. \$77 per average U.S. citizen, a \$42 difference.

Neighborhood Safety

MCPHD partners with local and national coalitions to ensure that our local communities and those around the state have neighborhoods, public spaces and transport infrastructures that promote physical activity and healthy living. MCPHD undertakes this responsibility through community education on the benefits of routine physical exercise, policy advocacy at the state and local levels on progressive-built environment standards, and consistent evaluation of local health initiatives to achieve desired health outcomes. Some of MCPHD's coalition partners include Health by Design (HbD), The Indianapolis Public Transportation Corporation (IndyGo) and the Robert Wood Johnson Foundation.

Housing Stock in Marion County

According to the U.S. Census Bureau,¹⁹ Marion County has a homeownership rate of 56.9% compared to an Indiana average of 70.6%. Almost a third of Marion County's housing units (31.2%) are in multi-unit structures such as apartment buildings, while Indiana's average is only 18.5%.

The U.S. Department of Housing and Urban Development awarded the Indianapolis Housing Authority \$2.4 million in August 2013 to build, repair, renovate and/or modernize public housing in its communities. The authorities use the funding to make large-scale improvements, such as new roofs, or energy-efficient upgrades to replace old plumbing and electrical systems. The State of Indiana received \$21 million.

http://portal.hud.gov/hudportal/HUD?src=/states/indiana/news/HUDNo.2013-08-08

Lead and Healthy Homes

Over 216,000 of the 418,000 homes in Marion County were built before 1970.²⁰ Homes built before 1978 are at greater risk of having lead in the paint. Lead-based paint and lead-contaminated dust are the most hazardous sources of lead for U.S. children. Lead-based paints were banned for use in housing in 1978. All houses built before 1978 are likely to contain some lead-based paint; however, it is the deterioration of this paint that cause problems.²¹

Year home built	Estimated number of homes in county
Total:	418,040
Built 2010 or later	787
Built 2000 to 2009	42,228
Built 1990 to 1999	53,034
Built 1980 to 1989	47,972
Built 1970 to 1979	57,712
Built 1960 to 1969	59,957
Built 1950 to 1959	60,233
Built 1940 to 1949	29,933
Built 1939 or earlier	66,184

Source: U.S. Census Bureau, American Community Survey, 2008-2012.

Lead Levels

A study on spatial relationships between lead sources and children's blood lead levels in the urban center of Indianapolis established that children in urban areas had a disproportionate elevation of blood lead levels compared to their suburban counterparts and the rest of Marion County.²²

The U.S. Centers for Disease Control and Prevention recognize lead poisoning as the most preventable environmental cause of illness in children. Children between the ages of 1 and 3 are at greatest risk of lead poisoning: Their nervous systems are still developing, their smaller bodies are able to absorb more lead than adults, and they often explore their world via hand-to-mouth. Lead can enter the brains of children younger than age 7, disrupt brain development and lead to decreased cognitive ability such as a decrease of 4-7 points in IQ. ²³

Indiana has set the clinical definition of lead poisoning at 10 micrograms of lead per deciliter of blood. Rates of lead poisoning have gone down since the 1970s, when leaded gasoline and lead paint in housing were banned. However, exposure to lead paint in old houses is still a common problem: Lead-based paint remains the leading source of lead poisoning today. As the paint deteriorates, children may inhale or ingest the particles. Renovation and repair of older homes can generate dangerous levels of lead dust, thus lead-safe work practices are required by federal law.

In Indiana, 74% of housing units were built prior to 1980, meaning they might have lead-based paint. It is important to test children who live in older homes.²⁴ MCPHD's Lead Safe and Healthy Homes Department offers testing opportunities and information about the dangers of lead contamination.

Food Access and Monitoring

Foodborne Illness

In 2011, the CDC revised its estimates concerning the annual number of foodborne illnesses. An estimated 48 million Americans are thought to suffer from foodborne illness caused by 31 different pathogens each year, a decrease from previous estimates of 76 million cases per year. Looking at a basic cost-of-illness model, which includes estimates for medical costs, losses to productivity and mortality from illness, it is estimated that each case of foodborne illness costs \$1,068, with the aggregated annual cost of illness being \$51 billion.²⁵

Food Inspections in Marion County

The Food and Consumer Safety Department of MCPHD is responsible for inspecting and licensing food establishments. Food inspections are carried out in Marion County in an effort to prevent foodborne illness. Food inspectors are trained for four weeks, during which time they

learn the food inspection code, work with departmental software and spend time in the field with program specialists and other inspectors. Upon completion of training, new inspectors are able to perform some supervised inspections at low-risk facilities (those with minimal risk of foodborne illness transmission, such as gas stations or Dollar General stores). After successfully managing supervised inspections, food inspectors are allowed to move on to higher risk establishments.

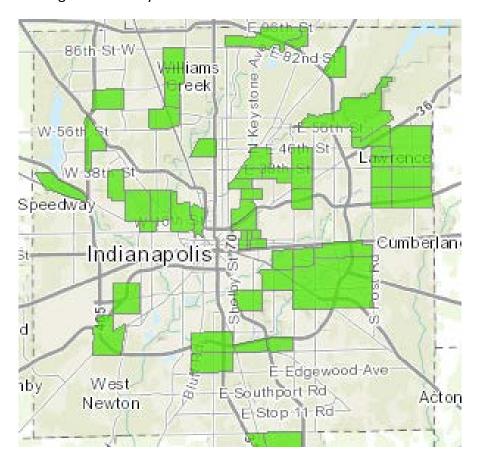
In order to sell food to the public, an establishment must be licensed. The largest numbers of licenses are given to restaurants: 2,672 restaurants held licenses in 2012 in Marion County along with 886 grocery stores, 299 taverns, 262 mobile restaurants, 201 schools, 100 limited service schools, 60 bakeries, 60 shared kitchen users, 46 commissaries and 17 vending establishments.

The number of each type of establishment has remained stable over the last five years, except for bakeries, which have almost doubled since 2007, when there were only 32, and shared kitchen users, which are businesses that rent or use space within an already licensed kitchen. The number of shared kitchen users has increased from one in 2007 to 60 in 2012; however, this is largely due to movement between categories of licenses, as the shared kitchen user license type is fairly new.

According to the Foodborne Outbreak Online Database (FOOD), Indiana was involved in multistate outbreaks with confirmed cases of Salmonella, Listeria monocytogenes, E.coli and Vibrio cholerae. These cases were found in foods such as cantaloupe, papaya, romaine lettuce, ground turkey, tomatoes and oysters.²⁶

Food Deserts

The walkability of a neighborhood can contribute to another public health issue, food deserts. Although there is no standard definition of a food desert, it is generally considered to be an area that lacks access to affordable fruits, vegetables, whole grains, low-fat milk and other foods that make up the full range of a healthy diet.



Food deserts of Marion County are shown in green. They are defined as urban areas in which a large number of residents live at a distance greater than 1 mile from a supermarket.²⁷

The estimated percentage of the U.S. population affected can vary greatly because there is no standard definition of a food desert. A small percentage of American consumers are limited in their ability to access affordable, nutritious food simply because they live far from a supermarket or large grocery store and do not have easy access to transportation.²⁸

One way that Marion County, specifically Indiana University Health, attempts to combat food deserts is through the Garden on the Go Program.²⁹ Garden on the Go is a mobile produce program that improves access to fresh, affordable fruits and vegetables in Marion County neighborhoods and beyond. Garden on the Go routes can be found at: http://iuhealth.org/images/uploads/Garden on the Go 2013 route2.pdf

School Cafeterias and Policies: healthy choices

The following findings represent a convenience sample of Marion County school cafeterias. The survey was distributed during the 2012-2013 school year to food service managers or designees during routine inspections conducted by MCPHD. This process was done outside of the normal inspection process, and food service managers could return surveys at any time following the inspection.

Of those schools that received surveys, 72% responded. Food service managers indicated that the most popular foods selected by students were pizza, chicken nuggets, hamburger/cheeseburger, chicken patty/sandwich, and taco/taco salad. Within the high school category, favorite foods included pizza, spicy chicken wrap/sandwich and chicken patty sandwich. In the K-8 category, the most popular foods were pizza, chicken nuggets and breakfast-for-lunch. Salad bars are available in 40% of high schools and 52% of K-8 schools. Only 9% of schools without salad bars concluded that incorporating one into their schools was feasible.

Fryers were more prevalent in the high schools than the K-8 schools (52% vs. 31%). Twenty schools (12%) allowed outside vendors to sell foods during the breakfast/lunch periods either once a week, three to five times per week, or every day. The top vendors came from Chick-Fil-A, Marco's Pizza, Papa John's, athletic departments, fundraisers, school clubs and vending machines. Roughly 20% of K-8 students have access to soft drinks, sport or energy drinks and/or snack foods during the school day, while 78% of high school students are permitted this access.

These data will be used as a baseline to gauge movement toward healthier cafeteria options in the future. There is a need to study proximity of fast food restaurants to schools, especially those with open lunch sessions, as these restaurants are likely to be patronized by students on a regular basis.

Air and Water Quality: disease prevention and hazard monitoring

Air Quality

Ambient Air Monitoring Data and Information

Air monitoring data are collected by the Indiana Department of Environmental Management (IDEM), ³⁰ which issues air permits to businesses. Both IDEM and the City of Indianapolis have programs aimed at improving air quality.

Air quality in Central Indiana is poor. Indianapolis consistently ranks among the worst 25 cities in the nation for particle pollution. Marion and surrounding counties struggle to attain health-

based standards for both fine particle and ground-level ozone pollution. Some of this pollution is a result of the large number of cars on roadways. In just one generation, the number of children in the U.S. walking or bicycling to school has dropped significantly, from approximately 50% in 1969 to 15% in 2001. This trend is representative of Central Indiana, too.³¹

The City of Indianapolis has an Office of Sustainability, which collects ambient air quality data in and around Marion County for pollutants that have National Ambient Air Quality Standards (NAAQS). These pollutants are referred to as the criteria pollutants and include Carbon Monoxide (CO), Ozone (O3), Sulfur Dioxide (SO2), Nitrogen Dioxide (NO2), Particulate Matter 10 micron (PM10), Particulate Matter 2.5 micron (Fine Particles) and Lead (Pb).

The air quality standards are set at levels to protect the public health. Air monitoring is conducted by IDEM to ensure compliance with those standards. The gaseous pollutants (CO, O3, SO2) are measured 24 hours a day, seven days per week by IDEM staff. The particulate type pollutants (Fine Particles, PM10, Pb) are collected over a 24-hour period and measured from once every day to every sixth day (PM10 and Pb). Each year the agency collects nearly 160,000 total air measurements in Central Indiana. The Environmental Protection Agency (EPA) releases data on local air pollutants at: http://www.epa.gov/air/emissions/where.htm

Indoor Air

Beginning on June 1, 2012, the City of Indianapolis enacted a smoke-free ordinance for most workplace settings. Examples of public places and places of employment that may not allow smoking are hotels, motels, bars, taverns, nursing homes, health-care facilities, assisted living facilities, mental health facilities, bowling alleys, theaters and most other workplaces. Ecigarettes are considered a tobacco product and therefore included in the smoking ban. The Department of Code Enforcement, Indianapolis Fire Department and Indianapolis Metropolitan Police Department may enforce the provisions of the ordinance. More information about the smoking ban can be found at:

http://www.indy.gov/eGov/City/DCE/Licenses/Documents/Smoking%20Ordinance%20FAQ%20 5.1.12%20LINKED.pdf

Lead Emissions by Businesses

Lead emissions from permitted sources in Marion County have decreased from 1996 to 2007 by over 1.78 tons (61.58%).³² This decrease in lead emissions can be attributed to federally mandated programs such as the Clean Air Act and the closing of numerous permitted stationary sources. Additionally, source-specific operating provisions have been implemented at the largest stationary source of lead emissions in Marion County: Quemetco, Inc.³³ Marion County has not exceeded the NAAQS for lead measured at the two monitoring sites found within the "unclassifiable" portion of the county, where Quemetco, Inc. is located.

Diesel Reduction Efforts

The Indiana Diesel Reduction Project³⁴ was first initiated by IDEM's Office of Air Quality in an effort to improve air quality in Indiana. The Indiana Diesel Reduction Projects relate to the diesel oxidation catalysts (DOCs) or diesel particulate filters (DFPs) that were bought through Quantity Purchase Agreements (QPAs) and then made available to school and government agencies at reduced prices. According to the Indiana Diesel Reduction Projects table, the Metropolitan School Districts of Perry (75 units), Wayne (85 units) and Washington (47 units) townships have a status of "completed." The Metropolitan School District of Warren Township is still an on-going project with 59 units in process of being replaced.

Water Quality

Drinking Water Sources

The three main surface water sources in Marion County for drinking water are the White River (fed by Morse Reservoir), Fall Creek at Keystone Avenue (fed by Geist Reservoir), and Eagle Creek Reservoir at 56th Street. There are also groundwater wells that are used for municipal water, which provide 25% of the source drinking water. Marion County water utilities project that water demand will increase to 39 million gallons per day within 10 years. This increased demand must be met by existing groundwater resources.

The areas around the groundwater wells have been designated well-field protection areas, and the City of Indianapolis and MCPHD work with businesses in those areas to prevent pollution from entering the ground water.

Marion County is served by three public water utilities.³⁵ The largest is Citizens Water, which provides water to Indianapolis. Citizens Water provides surface water as its primary water source type to a population of 873,590. The two other water systems are the City of Lawrence Utilities and Speedway Water Works, which serve 46,100 and 12,881 people, respectively. Lawrence Utilities uses ground water while Speedway Water Works uses both surface and ground water. The EPA keeps an updated list of active water systems, found here: <a href="http://oaspub.epa.gov/enviro/sdw query v2.get list?wsys name=&fac search=fac containing &fac county=MARION&pop serv=500&pop serv=3300&pop serv=10000&pop serv=100000&pop ser

The EPA has not recorded any health-based violations for Citizens Water in the past 10 years. Health violations occur when the amount of a contaminant has exceeded safety standard (MCL) or when water is not treated properly. Citizens Water had several monitoring violations, primarily for turbidity, in February, March, April and December of 2006. Turbidity has no health effects itself, but it can interfere with disinfection of the water, leading to the presence and/or

growth of disease-causing organisms such as bacteria, viruses or parasites. There was one additional monitoring violation in April 2007 in which Dalapon, an herbicide that over a long period of time may cause minor kidney changes, was not adequately monitored.³⁶

City of Lawrence Utilities has had no health-based violations recorded with the EPA in the last 10 years. In July 2010, it had one violation in minor routine monitoring of water for the contaminate coliform, a bacteria naturally found in the environment that can be an indicator of other potentially harmful bacteria in the area.³⁷

Speedway Water Works had two health-based violations recorded with the EPA in the last 10 years, including Total Haloacetic Acid (HAA5) in October 2003 and Coliform in 2002. Speedway Water Works had violations in regular monitoring of multiple contaminates in 2001, which included Simazine, OXAMYL, Picloram, Dinoseb, Carbofuran and LASSO.³⁸ These contaminates may cause harm to different areas of the body such as the liver, the nervous system and reproductive systems when levels are above federal safety standards.³⁹

Municipal Water Disruptions

MCPHD works with public water utilities during public water disruptions to ensure licensed facilities (pools, food establishments, child-care facilities) as well as schools, health-care providers' offices and the public understand the actions they need to take, which may include following "boil water" or "do not use" instructions depending on the contamination.

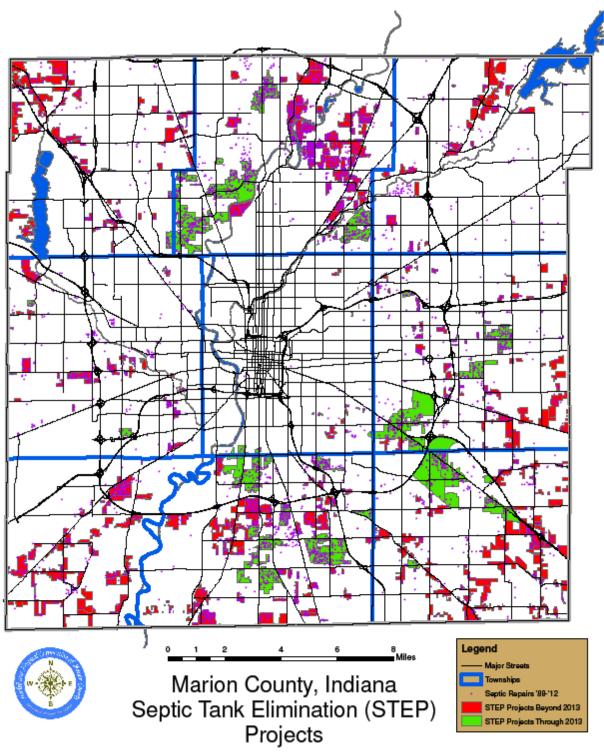
Households on Septic Tanks

A septic system is a small-scale sewage treatment system with no connection to main sewage pipes. A septic system usually consists of a septic tank and a drainage field where laterals (sometimes called "fingers") filter the runoff water into the surrounding soil. MCPHD permits new systems as well as repairs on existing systems. New septic systems are permitted only when municipal systems are not available within a specified distance to the home.

According to Citizens Energy Group, more than 20,000 homes in Marion County are served by private septic systems. Septic systems have a limited life and eventually fail, leaching human waste into ground water, backyards and neighborhood ditches and streams. Septic systems are linked to high E. coli bacteria counts in many small neighborhood streams and ditches during dry weather, when children are most likely to play in them.

Between 2009 and 2013, 7,000 homes in Indianapolis and Marion County had been or were planned to be taken off septic systems as part of the Septic Tank Elimination Program (STEP). Connecting these homes to the sanitary sewer would address approximately 25% of the homes on septic systems. More information about STEP can be found at the following link: http://www.citizenswater.com/Wastewater/STEP.aspx.

This map shows the plan to connect these aging systems to municipal utilities.



Created 21 OCT2013, Marion County Health Department, Water Quality and Hazardous Materials Management.

Source: Citizens Energy GroupSTEP Project Areas & Marion County Public Health Department Septic Case and Permit data.

Households Wells

There is no comprehensive list of active wells in Marion County. Some may have been abandoned over the years; therefore, the records tracked by MCPHD do not provide a good estimate of the number of currently active residential wells. In 2012, 460 private well samples were collected, with results and information to correct problems given to well owners.

MCPHD's Water Quality Division offers free well testing for bacteria, metals and anions. Environmental health specialists provide information on correcting any problems found by the testing, such as how to chlorinate a well that has bacteria.

Combined Sewer Overflow

Combined sewers are a method for conveying both stormwater and sewage in one system. Historically, these systems were built in hundreds of communities across the United States before indoor plumbing became commonplace.

Combined Sewer Overflow (CSO) is a public health hazard that occurs when raw sewage overflows into nearby rivers and streams. This occurs most commonly during periods of heavy rain. During periods of normal rainfall, the sewer systems function properly by conveying both stormwater and sewage to wastewater treatment facilities. However, within the combined sewer system in central Indianapolis, even a minor storm can cause raw sewage to overflow and pollute waterways.

Under the EPA's Clean Water Act, Indianapolis and other combined sewer communities must develop plans to reduce these overflows to protect human health and the environment. For more information about CSOs in Marion County and the long-term plan to decrease them, please visit: http://www.citizensenergygroup.com/Wastewater/CSO.aspx

Watershed

Marion County sits on a large watershed, or drainage basin. When water in the area becomes polluted, it enters into the watershed and thus affects a larger area than the pollutant's initial source of entry. There are two types of pollution sources, point and nonpoint. Nonpoint sources are those where pollution has entered the water through runoff from agricultural areas and pastures. Point sources are those where direct pollution has occurred from sources such as pipe discharges, whether they are from home sewers or industrial sources.

Both point and nonpoint sources can contribute to pollution of water with material such as E. coli, which is an indicator for human and animal sewage.⁴⁰ The White River currently has levels of E. coli above the level set by the state. Additionally, cyanide has been found to be elevated in some locations. Dissolved oxygen is well above minimum standards at all sampling locations.⁴¹

Water Quality Index

Beginning in 1998, MCPHD's Department of Water Quality and Hazardous Materials Management (DWQHMM) has routinely sampled and monitored major streams and rivers. Minimum Surface Water Quality Standards, State of Indiana (327 IAC 2-1-6) provides the basis for the department's surface water sampling and monitoring program. Specific standards exist for each parameter such as E. coli levels, pH and dissolved oxygen. A fairly large amount of data have been collected to determine long-term compliance or noncompliance with 327 IAC 2-1-6.

A common inquiry from the public, lawmakers and the media is whether Fall Creek is "polluted" or "clean." In response to similar requests, the Canadian Council of Ministers of the Environment (CCME) organized a task force to develop a water quality index to "grade" rivers and lakes using data collected from fixed locations over several months.

Relied upon as a natural resource, Fall Creek is an important waterway within Marion County. Geist Reservoir was created near the headwaters of Fall Creek as a freshwater source for a downstream water treatment plant. Downstream of that plant and the 39th Street pedestrian bridge, approximately two dozen combined sewer overflow locations discharge raw sewage into Fall Creek during wet weather events, preventing raw sewage from backing up into homes and businesses. Flowing through historic neighborhoods and on the fringes of downtown Indianapolis, Fall Creek is the natural connection between several diverse neighborhoods before it flows into White River on the northwest side of Downtown.

Sampling and monitoring data collected from three fixed sites (39th Street pedestrian bridge, Central Avenue bridge and Indiana Avenue bridge) along Fall Creek were used to calculate a CCME index value. Two-year intervals of data collection were used to calculate an index value for each site to account for seasonal fluctuations as well as more extreme weather events such as droughts or flooding. The measured data parameters of E. coli, dissolved oxygen, specific conductance and pH were used for all sites and time intervals.

The values for each time period and each site were then compared to aid in determining whether the water quality was improving, declining or remaining static over time at each site, and whether there were differences between sites. The following table shows the final calculated index value for each site, the scale used to classify the site, and the time intervals selected.

Table 1. Calculated Water Quality Index Values for Fall Creek Sampling Sites.

39th Street Central Avenue Indiana Avenue

<u>2003-2004</u>	<u>2005-2006</u>	<u>2007-2008</u>
72, fair	76, fair	64, marginal
49, marginal	52, marginal	49, marginal
47, marginal	57, marginal	47, marginal

	<u>Scare</u>
95-100	Indicates excellent water quality
80-94	Indicates good water quality
65-79	Indicates fair water quality
45-64	Indicates marginal water quality
0-44	Indicates poor water quality

For these sites and time intervals, Fall Creek remained static in terms of water quality over time. Additionally, the water quality index indicates the furthest upstream site (39th Street) had slightly better water quality than the Central Avenue and Indiana Avenue sites. The higher water quality index value for the 39th Street site was anticipated, as only one CSO location is known to exist upstream of the 39th Street pedestrian bridge, while several dozen CSO locations are known to exist from the 39th Street pedestrian bridge to where Fall Creek connects with White River.

Each sampling point can be thought of as representing a segment of Fall Creek between two sampling points. For example, it is approximately three miles from the Indiana Avenue sampling location to the Central Avenue sampling location. Thus, the water quality index value for the Indiana Avenue sampling location could represent this three-mile segment of Fall Creek. The Central Avenue water quality index value would represent the segment of Fall Creek between the Central Avenue Bridge and the 39th Street pedestrian bridge.

When further index values are available, DWQHMM plans to create a visual representation of the index value for each stream segment, which will be available on our website and other media. In addition to Fall Creek, water quality index calculations and visual representations of the index are planned for Pogue's Run, Pleasant Run, Eagle Creek and White River. Some examples of the information provided through the visual representation include:

- Locations of inputs potentially impairing water quality (CSO discharges, neighborhoods served by septic systems)
- Location of sampling locations (including macro-invertebrate collection sites)
- Location and route of the Deep Rock Tunnel Project (DRTP), which is part of the Long Term
 Control Plan. When completed, the DRTP is designed to store additional sanitary sewage
 and stormwater (several million gallons per rain event) into the combined sewer system,
 thus reducing the number of times the CSO locations discharge raw sewage into Fall
 Creek.

One of the primary goals of using a water quality index is to educate the public about environmental health. When individuals understand the factors and circumstances that impair or improve water quality, combined with the means to measure overall water quality of local streams and rivers, the public, watershed groups, private entities and government agencies will be in a better position to direct resources and prioritize projects.

Fish Advisories in County Waters

The Indiana Fish Consumption Advisory (FCA) is a multi-page document containing useful information and advice on the consumption of fish, including those caught from a local water body and those that have been purchased. The advisory is compiled with the collaboration of

three state agencies: the Indiana Department of Environmental Management (IDEM), the Indiana State Department of Health (ISDH) and the Indiana Department of Natural Resources (DNR).

The most common contaminant triggering advisories in Marion County fishing waters is polychlorinated biphenyls (PCBs), a man-made organic chemical that at one time was widely used in industries needing a substance that was resistant to heat and fire. PCBs and mercury, along with other organic compounds and metals, are sometimes found in area fish. Consumption guidance is aimed at those who fish for recreation or sport in Indiana. This advice ranges from eating fish once per week to no consumption of certain fish from certain waters.

After years of fish tissue analysis over many areas of the state, places where fish can be eaten with unlimited consumption have been added to the advisory as a sign of progress as well as expansion of advisory and sampling locations. The consumption advice is divided into two groups: the general population, described as women age 45 and older and men age 15 or older, and the sensitive population, described as women who are or may become pregnant and children under age 15. For details about ISDH's fish consumption advisory, please visit: http://www.in.gov/isdh/23650.htm.

In 2012, 25,443 residential fishing licenses were sold to Marion County residents, and 305,425 licenses were sold within the state. These figures do not include any other fishing license, such as one-day fishing passes, residential fishing and hunting licenses, or the seniors' "Fish for Life." There were a total of 26,228 nonresidential fishing licenses sold in Indiana in 2012, including all types of fishing license. 43

Swimming Pools and Inspections

Swimming pools pose a number of potential health and safety hazards. The CDC reported 5,789 non-fatal and 3,881 fatal unintentional drownings in the United States from 2005-2009.⁴⁴ Drowning is the leading cause of injury death among children ages 1-4 years.

Swimming pools also present the potential for contracting recreational water illnesses (RWIs) caused by germs spread by swallowing, breathing mists or having contact with contaminated water. RWIs include infections of the gastrointestinal, neurological and respiratory systems as well as skin, ear, eye and wound infections. ⁴⁵ Top causes of recreational water outbreaks are Cryptosprodium, Pseudomonas, Legionella, Giardia, Shigella, Norovirus, E. coli, Campylobacter and Adenovirus. Injuries associated with the chemicals used for disinfection and pH adjustment also occur frequently. The CDC estimated 28,071 cases of acute illnesses and injuries associated with pool chemicals in the United States from 2002-2008. ⁴⁶

MCPHD's Pool Program aims to reduce injury, illness and death related to public and semipublic swimming pools, which include pools, spas and wading pools that are not associated with private, single-family residences. Trained environmental health specialists conduct routine monthly inspections on the licensed facilities. Additional inspections are performed based on complaints, unsatisfactory bacteria tests, illness/injury reports, or as deemed necessary by the Pool Program.

In the summer (June through August), 879 pools are inspected by the Pool Program, and 322 pools are inspected year-round. An average of 4,977 inspections were performed annually from 2006-2012 by two full-time and four seasonal inspectors. The inspections include a 45-item checklist of health and safety items and a water sample test for bacterial quality. Education conducted during inspections and periodic trainings sponsored by the Pool Program are also important components of the Pool Program's injury and illness prevention strategy. The Pool Program's regulatory authority rests in the state pool code (410 IAC 6-2.1) and, when necessary, inspectors can issue notices of violation or bring suit against pool facilities to ensure compliance with the pool code.

Hazardous Materials

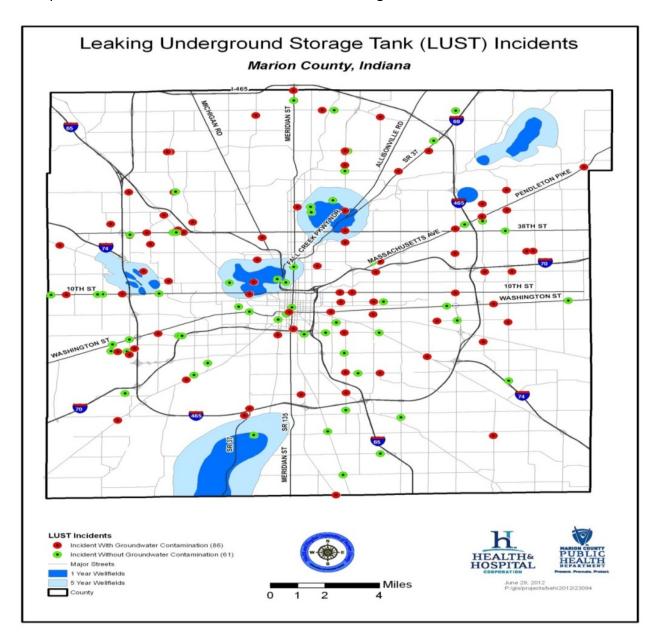
Brownfield Sites

A brownfield is a property where redevelopment is complicated due to actual or potential environmental contamination. The Indiana Brownfields program has existed since 2005. It works in partnership with the U.S. EPA and other agencies in Indiana to help communities make productive use of their brownfield properties through redevelopment.⁴⁷ There are many unidentified brownfields in Marion County due to its history as an industrial city. A map of Marion County brownfield sites can be found here:

http://maps.indy.gov/MapIndy/Index.html?theme=Brownfields

Leaking Underground Storage Tanks

The map below shows past incidents of leaking underground storage tanks in Marion County. Green icons indicate that no ground water was contaminated, while red icons indicate that groundwater contamination did occur. Marion County has had 187 leaking underground storage tank reports from 2007 to 2013 that increased the risk of groundwater contamination.⁴⁸



http://inmap.indiana.edu/dload_page/environment.html

Water Quality and Hazardous Materials Management

The Environmental Emergency Response Team at MCPHD is comprised of four hazardous materials specialists (HMS), four environmental health specialists (EHS), one indoor air quality specialist (IAQS) and three supervisors. All members of the EERT are trained to the NFPA 472 hazardous materials technician level. In addition, members of the EERT have received specialized training in improvised explosive devices (IEDs) and radiation as well as in chemical and biological threats and terrorism.

The EERT has a primary (HMS) and a secondary (EHS or IAQS) responder on call 24/7. In addition, there is an on-duty supervisor available to assist with complex responses or additional incidents. Both primary and secondary responders have take-home emergency response vehicles equipped with sophisticated environmental and chemical/biological/radiological detection instruments. All members of the EERT are certified in Level A, B and C entry.

The EERT responds to chemical releases, fish kills, sewage releases, Indiana State Police meth lab occurrence reports, infectious waste in public areas, incidents involving radiological materials, and chemical and biological terrorism, including BioWatch actionable results. The EERT also provides follow-up to incidents, such as the cleanup of released hazardous materials by the responsible party, to ensure compliance with the Code of the Health and Hospital Corporation of Marion County.

The EERT has an agreement with IDEM to assist its On-Scene Coordinators (OSCs) with incidents in Marion County. In addition, the EERT provides mutual aid assistance to adjacent local health departments in District 5 and has assisted response agencies in other Indiana Homeland Security districts.

The EERT addresses complaints made directly to the WQHMM complaint line, receives pages from the City of Indianapolis Public Safety Communications Agency and responds to referrals from the IDEM spill line. The EERT also assists the OSCs from the U.S. EPA who are stationed in Indianapolis. In 2012, the EERT responded to 95 emergency incidents, 107 sanitary sewer overflows, eight fish kills and 240 general complaints or referrals.

Public Health Preparedness: all-hazards preparedness

Emergency Preparedness and Response

Public health departments have greatly strengthened their preparedness response since 9/11. MCPHD's own Public Health Emergency Preparedness Department (PHEP) is responsible for readiness, response and recovery activities associated with intended or unintended biological emergencies, including terrorist attacks, other bio-releases, disease importation, radiation, paninfluenza and extreme temperature emergencies. The current extreme temperature plan for Marion County can be accessed at:

http://www.indy.gov/eGov/City/DPS/DHS/Preparedness/Documents/CEMP%20DECEMBER%20 2012/Extreme%20Temperature%20Plan%20Dec%202012.pdf.

The department works closely with epidemiologists and other public health staff to monitor and investigate trends in reportable communicable diseases. PHEP also assists with Water Quality/Hazard Materials Management issues associated with natural disasters (tornados, floods, severe weather, blizzards and hurricanes), chemical and radiological emergencies (particularly those associated with surveillance), medical management systems, communications etc.

Collaboration with Local and State Agencies

The Comprehensive Emergency Management Plan (CEMP) of the Consolidated City of Indianapolis defines the planned response to extraordinary emergency situations associated with natural and man-made disasters, technological incidents and national security emergencies in or affecting the Consolidated City of Indianapolis.

There are 15 emergency support functions identified as critical to the health and safety of the people in Marion County. Under the direction of the mayor, upon proclamation that a disaster has occurred or is imminent, the director of MCPHD will coordinate the response of medical and health care resources. The director will provide liaison with the responsible representative for Emergency Support Function (ESF) at the State Emergency Operations Center (SEOC). ESF 11 shall establish direct responsibility for the safety of food and water supplies. ESF 8 shall establish prevention and control of epidemics, the delivery of emergency medical services (including personnel and supplies) and the identification of victims and emergency mortuary services.

In addition to leadership in ESF, MCPHD also is involved with ESF 15, Public Information, to ensure that sufficient assets are deployed in the field during an Incident of National Significance to provide accurate, coordinated and timely information to affected people and groups, including government, the media, the private sector and the local populace. The public

information officer from MCPHD will be responsible for disseminating critical information and working closely with state and local agencies in support of efforts prior to, during, or after an Incident of National Significance.

Exercises are held each year to practice response plans so that MCPHD will be prepared to hold the roles in ESF 8 and 15 if needed. The city's complete Comprehensive Emergency Management Plan can be accessed at:

http://www.indy.gov/eGov/City/DPS/DHS/Preparedness/Documents/CEMP%20OCTOBER%2020 11/ESF%20Descriptions.pdf

In addition to continuously training current staff to respond to an emergency event, MCPHD manages a Medical Reserve Corps (MRC). Medical Reserve Corps units are community based and function as a way to organize and utilize local volunteers who want to donate their time and expertise to prepare for and respond to emergencies and promote healthy living throughout the year. MRC volunteers, who supplement existing emergency and public health resources, include medical and public health professionals such as physicians, nurses, pharmacists, dentists, veterinarians and epidemiologists. Many community members – interpreters, chaplains, office workers, legal advisers and others – also can fill key support positions.⁴⁹

The MRC is growing and is always open for more volunteers. Here is a count of currently registered volunteers as of Nov. 26, 2012:

Volunteer type	Count
Physicians	30
Physician assistants	4
Nurse practitioners	3
Nurses	95
Pharmacists	4
Dentists	9
Veterinarians	1
Mental health professionals	3
EMS professionals	21
Respiratory therapists	2
Other public health/medical	12
Non-public health/non-medical	27

To learn more about Marion County's Medical Reserve Corps and to volunteer to be a member, visit: https://www.medicalreservecorps.gov/MrcUnits/UnitDetails/88.

One reason for strengthening the MRC in Marion County is the CDC's Cities Readiness Initiative (CRI). CRI is a federally funded program designed to enhance preparedness in the nation's largest cities and metropolitan statistical areas, where more than 50% of the U.S. population reside. Through CRI, state and large metropolitan public health departments have developed plans to respond to a large-scale bioterror event by dispensing antibiotics to the entire population of an identified metropolitan statistical area within 48 hours.⁵⁰

Although city agencies strive to build better response plans, individuals must take responsibility for their own families' preparedness plans. The U.S. Department of Homeland Security maintains a website (www.ready.gov) that offers specific advice for families to consider in making their disaster plans. All Marion County residents are strongly encouraged to become familiar with such online resources to learn more about what is needed to survive a tornado, flood, ice storm, earthquake or other disaster that could strike Central Indiana.

Conclusion

Public health aims to prevent morbidity and mortality in a number of ways. No one issue takes priority over others; improving one aspect of the environment can positively impact many other environmental and public health variables. For example, a community's strong healthy homes approach can reduce infestation that could trigger asthma attacks. A reduction in such attacks helps children improve school attendance, thereby increasing their likelihood of reaching their full potential both academically and physically.

An educated and active society is often a healthier society. Small investments in the built environment can lead to large improvements in the health of Indianapolis residents. To learn more about local environmental and preventive efforts, please contact some of the agencies listed in the acknowledgment at the end of this report. Many of the groups are often looking for volunteers from the community. Reach out and see how you can help protect the city's health.

Acknowledgments

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DATA SOURCES and METHODS



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Data Sources

The main sources of local data used in this Community Health Assessment are listed in Table 1. The main sources from which comparison statistics were drawn are listed in Table 2.

Table 1: Major Sources of Detailed Local Data

Data set	Use	Chapters supported	Type of information	Comparative data
Death certificates (2008-2012) (1998-2002)	Leading causes of death (mortality rates) for county residents	All age group chapters	Death frequencies; Rates per 100,000 population; rate changes over time; sex- and race- specific rates; racial disparities; Years of Potential Life Lost (YPLL)	National Vital Statistics: deaths HP2020
Birth certificates (2008-2012)	Rates of birth; fertility rates; access to care; high-risk birth outcomes; maternal risks; teen births	Perinatal chapter	Rates per 100,000 population; age- and race-specific rates; racial disparities; rate changes over time	National Vital Statistics: births
Infant mortality (county infant birth and death certificates)	Rates per 1,000 live births (IMR); leading causes of death	Perinatal chapter	Race-specific rates; rate changes over time	National Vital Statistics: IMR HP2020
Hospital discharge data (2009-2011)	Leading causes of hospital usage	All age group chapters	Rates per 10,000 pop'l; age-, sex- and race-specific rates; racial disparities; rate changes over time	National Hospital Discharge Survey
Marion County & U.S. Behavioral Risk Factor Surveillance Survey (BRFSS) (2008-2010)	Prevalence of chronic diseases; health behaviors; preventive care and health care; social determinants of health	All adult age group chapters	Annual CDC phone survey of adults >18 years old	U.S. and metro areas' BRFSS County Health Rankings website
Emergency department visits (2009-2011)	Leading causes of ED usage; injury-specific causes of visits	All age group chapters	Rates per 10,000 population; age-, sex- and race- specific rates; racial disparities	None
Community Health Assessment phone survey (2012)	Disease risk factors; neighborhood environments; demographics; chronic disease prevalence for adults >18 and households with child(ren) 5-17	School-age youth & adult group chapters	Phone survey of 5,013 area adults, demographics neighborhood environment; health behaviors and disease prevalence rates	None
FBI Uniform Crime Reports	Homicide and aggravated assault statistics	Adolescent and young adult chapters	Arrest counts and rates per 1,000 population by county and township	County Health Rankings
Indiana Dept. of Corrections	Incarceration rates; recidivism rates; correctional institution populations	Adolescent and young adult chapters	Incarceration rates and counts; inmate health status	Indiana data
Consumption and Consequences of Alcohol, Tobacco and Drugs in Indiana, IUPUI Health Policy Center (2011)	Substance abuse data and consequences	All adult chapters	Rates of use per 10,000 population depending on substance and data source	National Survey of Drug Use and Health, SAMHSA
Indiana Dept. of Education	Free & reduced lunch populations; suspensions/expulsions	Young child and adolescent chapters	Percent of county school district populations	Indiana

Table 2: Sources of County Population Data and Comparison Statistics

Data source	Use	Website
Census 2010 Summary Files 1 & 2	Demographic data	http://factfinder2.census.gov http://www.census.gov/prod/cen2010/doc/sf1.pdf
American Community Survey 2009-2011	Household income, employment, health insurance, education and poverty status; household composition	https://www.census.gov/acs/www/
Small Area Income and Poverty Estimates	County-level estimates of population in poverty	http://www.census.gov/did/www/saipe/
RWJF County Health Rankings	County health and social determinants of health comparative data	http://www.countyhealthrankings.org/app/#!/indiana/ 2012/rankings/marion/county/outcomes/overall/snap shot
National Hospital Discharge Survey	Hospital discharges and inpatient procedures	http://www.cdc.gov/nchs/nhds.htm
National Healthcare Quality Report	State-specific health care quality information	http://nhqrnet.ahrq.gov/inhqrdr/
Annie E. Casey Kids Count Data Center	Child and youth education, income and risk data	http://datacenter.kidscount.org/
Healthy People 2020 (HP2020)	CDC objectives for 29 common conditions	http://www.healthypeople.gov/2020/
CDC SEER Data	Cancer incidence and prevalence	http://seer.cancer.gov/
Behavioral Risk Factor Surveillance Survey (BRFSS)—SMART data	Health behaviors; disease prevalence; health care use in metro areas	http://www.cdc.gov/brfss/

Determination of Statistical Significance

In this report, the reader will sometimes see the term "statistically significant difference" when two groups or time periods are being compared. A statistically significant difference is a difference that is likely due to an underlying difference between the groups being compared rather than because of chance or random fluctuations. In this report, we use a threshold of p < 0.05; in other words, we refer to a difference as "statistically significant" if that difference would be very unlikely (i.e., would occur less than 5% of the time due to random variation) were there truly no difference between the groups being compared.

95% Confidence Intervals

Some statistics are presented with 95% confidence intervals or 95% confidence limits. The statistics we present are imperfect, since they are based on sampling (rather than on data from every person in the county) and on imperfect measurements. The 95% confidence intervals

estimate how precise those statistics are. Based on the variation among the people measured, they indicate the range within which the true difference is likely to fall for 19 out of every 20 statistics presented (i.e., 95% of the time).

Death Rates and Cause of Death Categories

The death of a Marion County resident is recorded on a death certificate. For each death, a physician lists the causes and conditions of that death on the death certificate. Based on that information, the underlying cause of death is determined by the county nosologist using a national, standard method.¹ Unless otherwise noted, all cause of death analyses in this report are based on the underlying cause of death. Along with cause of death information, death certificates include other information about the death as well as the decedent's demographics.

Death rates in this report, excluding infant mortality rates, are age-adjusted to the year 2010 U.S. standard population.² Population denominators for death rates are U.S. Census Bureau estimates of the population as of July 1 for the year(s) in which the deaths occurred.

The cause of death categories for deaths of all ages used in this report are taken from the List of 113 Selected Causes of Death in the National Center for Health Statistics (NCHS) Instruction Manual, Part 9, ICD-10 Cause-of-Death Lists for Tabulating Mortality Statistics, Updated October 2002.³ The List of 113 Selected Causes of Death is used by NCHS to rank leading causes of death for the all-ages population.⁴

Table 3: Classification of Diseases, Tenth Revision (ICD-10) Ranks 1-10, Codes for U.S. Deaths, 20034

Diseases of heart (100-109,111,113,120-151) Malignant neoplasms (C00-C97)Accidents (unintentional injuries) (V01-X59,Y85-Y86) Cerebrovascular diseases (160-169)Chronic lower respiratory diseases (J40-J47) Diabetes mellitus (E10-E14) Influenza and pneumonia (J10-J18) (*U03,X60-X84,Y87.0) Intentional self-harm (suicide) Nephritis, nephrotic syndrome, nephrosis (N00-N07, N17-N19, N25-N27) Alzheimer's disease (G30) Septicemia (A40-A41)

http://www.healthypeople.gov/Document/html/tracking/THP PartA.htm#table3

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Years of Potential Life Lost

Years of Potential Life Lost (YPLL) approximates how many more years of life people might have lived if a certain cause of death were eliminated. It emphasizes mortality due to causes of death that tend to be more predominant among younger persons, such as accidents, congenital anomalies and homicides. YPLL is calculated by subtracting the age at death of each decedent from 75, and then summing all those differences for a total YPLL. The age of 75 approximates average life expectancy in the United States and is the standard used by NCHS.⁵ If each decedent's age is not available, an estimated YPLL can be computed using the midpoints of reported age groups.⁶

Race-Specific Statistics

Several data sources classify people by Hispanic status and, separately, by race. In this report, Hispanic ethnicity is generally presented as a race category. To convert data sets that coded both Hispanic ethnicity and race into the race classification used in this report, all persons of Hispanic ethnicity were classified as Hispanic, and those persons not of Hispanic ethnicity were classified as being of another race.

In the 2010 U.S. Census, people could indicate that they were multiracial by choosing more than one race in response to the census race question. In previous years, people were limited to indicating only one race on the census questionnaire. Many statistics in this report use denominators from census data and numerators from other sources that attribute only one race to a person. To resolve the differences in how race was classified in the different data sources, multiracial persons were considered to be equal parts of each race they indicated. They were counted as contributing equal portions of a person to each race group which they indicated, with those portions summing to one. This approach avoids the misleading results that can arise if multiracial people are omitted from the denominators of such statistics.

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Marion County Hospital Discharge Data

Hospital discharge data for 2000 to 2010 from all community acute care facilities in Marion County have been de-identified and compiled by the Indiana Hospital Association (IHA). The records include all inpatient stays and procedures occurring in these facilities. Discharge diagnoses are coded using the International Classification of Diseases, 9th Revision, Clinical Modification (ICD–9–CM), noted below. Sex-, race- and age group-specific counts are reported.

Unless otherwise noted, all hospital discharge data analyses in this report are based on the principal diagnosis (if so identified) or first-listed diagnosis in a patient's medical record. The data do not include individual identifiers, but they do include demographic information such as age, gender, race and ZIP code of patient residence. Because these data do not identify individuals, hospitalization rates and average length of stay are based on total hospital visits rather than on patients. If one patient had multiple visits for the same condition, each visit would be counted rather than the patient being counted just once. Therefore, the proportion of discharges for diagnoses that often involve multiple hospital admissions, such as cancer or other chronic conditions, may overestimate the proportion of persons hospitalized for that condition, relative to more transient conditions such as injuries.

Like the national hospital discharge data, the Marion County statistics reflect only discharges from short-stay hospitals and not long-term institutions or federal facilities such as Veterans Administration hospitals.

In accordance with national practice, discharges of newborn infants were excluded from the analysis of the hospital discharge data so that total included discharges would be more specific to hospitalizations for health problems.

Data Sources and Methods 12/08/2014

⁷ International Classification of Diseases, 9th Revision, Clinical Modification, 6th edition. U.S. Department of Health and Human Services, National Center for Health Statistics, Health Care Financing Administration. Washington: Public Health Service. 2003. http://www.cdc.gov/nchs/about/otheract/icd9/abticd9.htm

Table 4: Categories of Principal Diagnoses Used in Discharge Diagnoses⁸

Description	ICD-9 Codes
Infectious and parasitic diseases	001-139
Neoplasms	140-239
Endocrine, nutritional and metabolic diseases and immunity disorders	240-279
Diseases of the blood and blood-forming organs	280-289
Mental disorders	290-319
Diseases of the nervous system and sense organs	320-389
Diseases of the circulatory system	390-459
Diseases of the respiratory system	460-519
Diseases of the digestive system	520-579
Diseases of the genitourinary system	580-629
Complications of pregnancy, childbirth, and the puerperium	630-677
Diseases of the skin and subcutaneous tissue	680-709
Diseases of the musculoskeletal system and connective tissue	710-739
Congenital anomalies	740-759
Certain conditions originating in the perinatal period	760-779
Symptoms, signs, and ill-defined conditions	780-799
Injury and poisoning	800-999
Supplementary classifications	V01-V83

Table 5: Preventable Hospitalization Categories

Description	ICD-9 codes
Vaccine preventable condition	032-033.9, 037-037.9, 045.0-045.9, 055.0-055.9, 072.0-072.9
Diabetes	250.1-250.93, 251.0-251.1
Hypokalemia	276.8-276.89
Malignant hypertension	401.0, 402.0-402.00, 403.0-403.01, 404.0-404.03, 405.0- 405.09, 437.2
Congestive heart failure	428.0-428.9, 402.01, 402.11, 402.91
Pneumonia	481-483, 485-486
Asthma	493.00-493.92
Perforated/bleeding ulcer	531.0-531.00, 531.10-531.11, 531.2-531.21, 531.4-531.41, 531.50-531.51, 531.6-531.60, 532.0-532.11, 532.2-532.21, 532.4-532.41, 532.6-532.60, 533.0-533.60
Ruptured appendix	540.0-540.1
Pyelonephritis	590.00-590.19, 590.8-590.80
Cellulitis	681-682
Gangrene	785.4-785.49

⁸ International Classification of Diseases, 9th Revision, Clinical Modification, 6th edition. U.S. Department of Health and Human Services, National Center for Health Statistics, Health Care Financing Administration. Washington: Public Health Service. 2003. http://www.cdc.gov/nchs/about/otheract/icd9/abticd9.htm

The Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is a national telephone survey administered by state health departments with technical assistance from the Centers for Disease Control and Prevention (CDC). ⁹ It surveys adults age 18 years and older about health behaviors, preventive health practices, health care access and activities. The survey methods are described on the BRFSS website. ¹⁰

Indiana's 2009-2011 BRFSS sample included over 1,000 completed interviews for Marion County. Starting in 2009, MCPHD paid for increased sampling among black and Hispanic residents to allow more reliable analyses regarding those populations.

The Marion County BRFSS sample was aggregated for the years 2008-2010 and stratified by age groupings of adults that would allow comparisons to U.S. BRFSS data.

Marion County Community Health Assessment Survey

Portions of this section were adapted from the Community Health Assessment 2012 Summary of Methods, Survey Research Center at IUPUI, Institute for Research on Social Issues, Sept. 28, 2012.

Description and Methodology

From June 1 to Sept. 12, 2012 a random sample telephone survey was conducted among 5,013 county respondents by the Survey Research Center (SRC) at IUPUI. The purpose of the survey was to assess community health needs for Marion County and to better understand the health risk profile of Marion County residents.

The questionnaire was developed by the Marion County Public Health Department in collaboration with the Community Health Assessment Steering Committee, which ranked the importance of various sections and suggested additions to the survey. Survey items were taken from standard instruments, including the CDC's Behavioral Risk Factor Surveillance System questionnaire and National Health Interview Survey.

All telephone interviews were conducted by experienced and supervised interviewers. The average interview lasted approximately 16 minutes; however, this increased to about 20 minutes for the 1,339 respondents in households with children ages 5-17, who answered some

⁹ Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention [2005]. http://www.cdc.gov/brfss/faqs.htm

¹⁰ Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention [2006]. http://www.cdc.gov/brfss/technical_infodata/weighting.htm

18 additional items concerning a randomly selected child. The child was selected by asking the adult to refer to a child who had the most recent birthday. All adult respondents age 18 and older answered items related to composition of the household, neighborhood safety, neighborhood walkability and access to key services such as grocery stores and public transportation. Survey topics also included self-reported height and weight, physical activity habits, eating habits, mental health, access to care and health status. A summary of the questionnaire items is provided below.

Respondents were informed at the outset of the phone call that their participation was voluntary and confidential. Each respondent was informed they would have an opportunity to be entered for a drawing to receive a \$50 Marsh Supermarkets gift card. One hundred respondents who completed the survey and said they would be willing to receive a gift card were selected at random to receive a gift card.

A random sample of landline (n=24,119) and cellphone (n= 26,981) numbers was purchased from Survey Sampling, Inc. The cellphone sample, which came from cellphone billing addresses in the county, increased the representation of younger and minority residents, adding to the precision of subpopulation-specific analyses. County-level landline numbers were pre-screened for disconnected numbers before being sent to the SRC, and they came with census block group identification attached to the sample record. Interviewers asked all respondents their county of residence, whether they were over 18 years of age, and to speak to the adult in the household with the most recent birthday. Eligible respondents were asked if they preferred to be interviewed in English or Spanish (290 interviews were completed in Spanish, 4,723 in English).

These two random samples were supplemented with a landline telephone oversample of likely Latinos (n=3,228 numbers), which was purchased from Geoscape, a company specializing in sampling racial/ethnic groups across the country. They provided a sample of likely Latinos based on last name, first name and residence. Block group identification was also attached to all sample records for this oversample.

As seen in Table 5, the cellphone sample produced completed surveys for 1,513 respondents, with an average 37.8 attempted calls per complete and a response rate of 13.1%. The landline sample produced 3,300 completed surveys (23.7 attempted calls per complete) for a response rate of 22.2%. The Latino oversample had 200 completes (29.3 attempted calls per complete) with a response rate of 15.5%. The response rates are standard for each population given the survey's length. Overall, SRC interviewers dialed 141,217 times to 54,328 telephone numbers to get 5,013 completed interviews.

Of the 5,013 interviews, 443 (8.84%) self-identified as Hispanic/Latino and 1,273 (25.4%) self-identified as black. The weighted sample statistics of 46% men and 53% women closely

represent Marion County's Census 2010 adult population (45.3% men, 54.7% women). The sample age breakdowns also approximate those of the county: 24.6% of the weighted sample were between 18 and 29 years old (vs. 25% in the 2010 Census), and 13.1% of survey respondents were 65 and over (resembling the county's 2010 Census population of 14.3% for that age group). Households with children ages 5 to 17 made up 34% of the weighted sample compared to 38% of households with children 5-17 in the county population. The children's survey was further weighted by the number of children in the household to represent the child population from age 5 to less than age 18 in Marion County.

Responses were weighted according to probabilities of being in the cellphone, landline and Latino oversample sample frames. Details of this weighting are provided below. Analyses were performed using SAS® software procedures for analysis of data from complex, stratified surveys.

Results of different surveys may differ due to differences in the questionnaires or in how the survey was conducted. The impact of such differences is difficult to determine. Comparisons between the Marion County CHA findings and those of other surveys should be interpreted with this potential source of extraneous differences kept in mind.

Table 6: Participation Rates

Rate	Cellphone	Landline phone	Latino over-sample	Definition
Response	13.1%	22.2%	15.5%	The number of completed interviews divided by the number of eligible respondents in the sample.
Cooperation	26.4%	41.9%	36.0%	The number of completed interviews divided by the number of eligible respondents ever contacted.
Refusal	36.6%	30.7%	27.6%	The number of interview refusals or break-offs divided by the number of eligible respondents in the sample.
Contact	50.7%	55.6%	45.9%	The number of eligible respondents ever contacted divided by the number of eligible respondents in the sample.

Questionnaire Item Summary

The questionnaire used in the survey can be found at (insert CHA SUMMARY link on website). Here is a list of its sections:

Respondent Selection

Sections for the 1,339 respondents with children:

- Child's demographics
- Child's health care
- Child's health conditions
- Child's activity, smoke exposure

Sections for all 5,013 respondents:

- Neighborhood safety
- Neighborhood walkability
- Neighborhood services
- Food habits
- General health and habits
- Physical activity, work wellness
- Health care access and use
- Chronic disease
- Health behaviors
- Demographics

Weighting of the Survey Responses

Sample design weights indicate the number of adults in Marion County each survey respondent represents. Our sample weights adjust for the overlapping dual frame sampling design. Compositing weight adjustment factors were used to account for the fact that some adults had the potential to be sampled through both the landline and cellphone sampling frames. These calculations are based on random selection of one adult from each landline phone number (representing a household) who participated, and also allows for sharing of a single cellphone by two or more adults in the same household.

Independent cellphone and landline samples were drawn from RDD frames that overlap in their coverage. As such, some Marion County adults (i.e. those with both cellphones and landline phones) had the potential to be selected from more than one frame. A large portion of Marion County adults fell into this category, so we had to adjust for differential probabilities of selection

based on phone service type (as well as a small oversample of the Latino population, which will be discussed later).

Marion County's adult population falls into four categories of phone service:

- No telephone service at all. This represents a very small portion of Marion County adults

 based on National Health Statistics Reports (NHSR) estimates, approximately 2.1%. We
 were not able to make sampling adjustments for this population.
- 2. Landline service only. This is a continuously declining group: Based on NHSR estimates and interpolation, it makes up approximately 5% of the Marion County adult population.
- 3. Cell service only. A rapidly increasing proportion of adults fall into this category. Based on NHSR estimates and interpolation, it represents 44% of the Marion County adult population.
- 4. Both landline and cell service. The most common category for adults. Based on NHSR estimates and interpolation, approximately 49% of Marion County adults fall into this group.

Weights were calculated by a three-step process:

First, we focused on landline frame adjustments. We took into account the household selection probability, the number of landlines in the household and, because we randomly selected one adult from each household, the within-household selection probability. For respondents with a landline only, the combination of these calculations established their score for the survey weight.

Second, we made cellphone frame adjustments. In these calculations, we considered the phone number selection probability and the within-cellphone selection probability (i.e. the number of adults sharing the same cellphone number). For cellphone-only respondents, the combination of these two probabilities established their score for the survey weight. For dual-use respondents, i.e. those who had both landline and cell service, we added the two cumulative probabilities together to establish their survey weight.

Third, we accounted for our oversample of Latino respondents. We purchased a sample of landline phone numbers that had a sampling frame based on surname, first name and geographic location. For the 200 Latino respondents that we obtained from this sample, we took the probability of selection given their geographic location's representation of Latino residents into consideration. This means that we added this probability (based on quartiles) to the weight determined by their phone selection group: landline-only, or both landline and cell service.

The resulting sample weights range from 4.50 to 3,181.50 with an average of 132.06. The sample weights for the landline sample range from 4.50 to 324.00 with an average of roughly 62. The cellphone weights range from 36.00 to 3,181.50 with an average of 294.64. The average weights for cellphone-only households are highest, while the average weights for landline-only households are the lowest because the sample only consisted of 1,513 cellphone numbers. Although researchers often have to follow this type of sample design weight with raking procedures, we did not have cause to do so. Analyses indicate that the sampling frame-based weights effectively adjust our sample to correspond closely to Marion County's demographic breakdown among adults.

Usually, raking procedures help adjust for differences by age and gender in samples and the population. However, the sample statistics closely represent Marion County's population. The Marion County, Indiana, adult population consists of 45.3% men and 54.7% women. Just over 46% of this weighted sample is men while 53% is women. Also, the sample characteristics by age closely approximate those of Marion County overall, according to the 2010 Census. One quarter of the Marion County adult population is between 18 and 29 years old, and this group is 24.6% of the weighted sample. Finally, respondents 65 and over are 13.1% of the final weighted sample, which resembles the Marion County percentage for this population of 14.3%.

