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Right Start 2016: Annual Report on Maternal and Child Health

Mothers Smoking During Pregnancy Increased, Disparities Exist by Race & Place

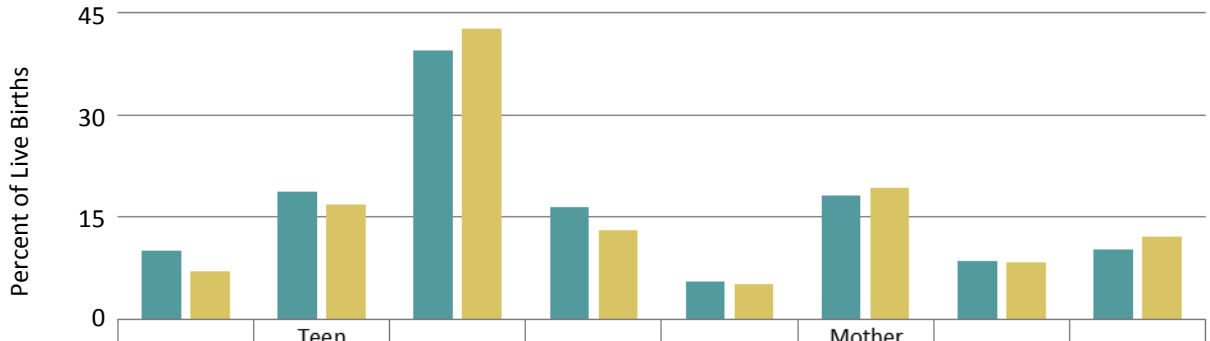
A mother's health is inextricably connected to the future health of her child. Whether she is able to access adequate prenatal care, visit the dentist or shop for healthy foods is important during her pregnancy. Living in a community environment without stress—clean air and water, low crime rates, parks and a robust public transportation system, for example is also critical to maternal health. Poverty—and concentrated poverty—and racism have toxic impacts on a mother's health and systems need to provide support and build on mothers' resiliency.

Race and place influence the health outcomes of both mothers and babies. Disparate outcomes in health are apparent by race and ethnicity. African-American mothers are more likely to have babies born too small or die before their first birthday. Latina mothers are experiencing worsening trends in most key measures of their health and that of their babies. Mothers living in one of the 18 contiguous counties in northern and mid-Michigan without access to a hospital with an OB/GYN unit or reliable transportation have much more difficulty receiving adequate prenatal care. All of these factors influence short- and long-term health, educational outcomes and the overall well-being of their children.

The annual *Right Start: Maternal and Child Health* report reviews eight indicators by county and for the 69 largest cities and townships in the state. This year's report compares 2008 (2006-2008 three year average) to 2014 (2012-2014 three-year average) and is focused on the high rate of births to mothers who reported smoking during pregnancy. Overall, the rate is 19.3% and it has increased by 6.4% from 2008.[1] Smoking during pregnancy is associated with preterm births, babies with low birthweight, infant deaths and other complications. Babies born too early or too small are likely to experience immediate health concerns, but also long-term issues. Additionally, expectant mothers and children exposed to secondhand and thirdhand smoke are at risk for other negative health outcomes.[2,3]

Since 2008, not including Medicaid dollars, state spending on smoking prevention and cessation initiatives in Michigan are down 34% from about $5.73 million to $3.78 million in the 2017 budget year (state and federal).[4] With the exception of one year (FY 2015), over the budget years 2008-2017, the state spent an average of $10,588 (state and federal dollars) each year on special projects targeted to help expecting mothers quit smoking.[5] A statewide survey of maternal and child health in Michigan reports that only 2% of moms participated in a class or support group to help them stop smoking to during pregnancy.[6] To reduce the number of expecting mothers who smoke during pregnancy, targeted resources must be expanded increase the availability of services and education about the impacts on babies. Further, more focus on smoking prevention, especially with youth, is needed. With the recent announcement from the federal government regarding regulations of e-cigarettes and hookahs, there will need to be appropriate public awareness and oversight to ensure that youth are not accessing these products—and starting to smoke at a young age.

Some progress in the health of moms and their babies, areas of concern remain.



	Mother under 20 years	Teen 15-19, already a mother	Mother unmarried	Mother no HS diploma or GED	Late or no prenatal care	Mother smoked during pregnancy	Low-birthweight babies	Preterm
2006-2008	10.0	18.6	39.4	16.5	5.6	18.1	8.5	10.1
2012-2014	7.0	16.8	42.6	13.1	5.1	19.3	8.4	12.2

Note: Only one-year of base data for 2008 is available for: mother smoking during pregnancy; late or no prenatal; and mothers without a high school diploma or GED. All other measures use base years 2006-2008 (3-year average) compared to 2012-2014 (3-year average).
Source: Michigan Department of Community Health, Vital Statistics and Health Data Development Section.

HOW ARE MICHIGAN'S MOMS AND BABIES DOING? NOT ALL BAD NEWS.

While areas of concern remain, the state overall has made some improvements in several important maternal and child health measures. Since 2008, Michigan has made significant strides in reducing the teen birth rate (30% decrease). There has also been a smaller, yet important, decline in the number of teen mothers giving birth to a second child while a teen. More mothers are also completing high school—a strong indicator for accessing prenatal care and improved financial security, which improve outcomes for kids. There have also been decreases in the rate of moms who receive late or no prenatal care at all (-9%) and babies born with low birthweights (-1%).

Teen and repeat teen births

In 2008, there were approximately 12,500 births to mothers under the age of 20. The number dropped to less than 8,000 resulting in a 30% decline in the rate for 2014. This is likely the result of a combination of factors, such as fewer teens having sexual intercourse and the increased access to long-acting reversible contraceptives (LARCs).[7] However, the overall rate in Michigan and the U.S. remain higher than those in any industrialized country. And, teen mothers will likely struggle to complete their own education and find a job making enough to meet basic needs. The stress of often raising a child alone, struggling to make ends meet and completing education or training makes it more difficult to create early learning environments to help their children be better prepared to enter school.[8] Additionally, low-income communities and communities of color are disproportionately impacted by teen births.

Almost all Michigan counties (71) had lower birth rates to young moms in 2014 with decreases ranging from between 2% and 52%. Although not all are statistically significant, 11 counties in smaller, rural areas experienced increases from 2008 ranging from a low of 1% to a high of 70%. These counties are Arenac, Benzie, Charlevoix, Cheboygan, Huron, Mackinac, Montmorency, Ontonagon, Oscoda, Presque Isle, and Schoolcraft. Similarly, out of the 69 cities and townships examined, only seven had more births to teens in 2014 than in 2008 with rate increases from 2% to 68%. Overall, these cities and townships had a rate decrease of 33% while all other cities and townships had a 25% decline in the rate over the trend period.

Equally important to child well-being is a young mom giving birth a second time (or more), which is about 17% of births to teens between 15-19 years old. Statewide the rate is down by 10% since 2008 and survey data show that a higher proportion of teen mothers reported using

postpartum contraception (92%) compared to non-teen mothers (83%).[9] However, rates vary at the local level; 16 counties and 17 of the 69 cities reviewed had a higher rate of babies born to teens who were already mothers since 2008. While the most populated cities and townships averaged a rate decline of 5%, all other cities and townships in the state improved more (15% rate decrease) over the trend period.

Mothers completing high school or receiving a GED

A mother's education level is one of the better predictors of whether she will access adequate prenatal care, smoke during pregnancy and be financially secure, which are all connected to both the mom's and child's well-being. Slightly more than 1 out of every 8 births in Michigan in 2014 was to a mother without a high school diploma or GED, which represents an improvement in the rate by 21%.

During the trend period, almost all counties where a rate could be calculated improved (66 of 80) while 34 counties had a rate improvement higher than the state average. Similarly, most cities and townships improved in the number of new moms with high school diplomas or GEDs (51 of 67). The city of Detroit had an improvement in its rate by 16% and Pontiac's rate improved by 19%, but still over 29% of births in these two cities were to mothers who had not completed high school or a GED program.

Late or no prenatal care

Receiving timely prenatal care is critical to identifying any medical issues—physical or mental—and increasing the chances for a healthy birth. Mothers who receive the necessary care and attention are more likely to be able to better care for both themselves and their babies. Additionally, babies who are born healthy have higher chances for better short- and long-term health and progress in school. In 2014, about 5% of births, or 5,752 births, in Michigan were to mothers who either received prenatal care late or did not get it at all. From 2008, this was a drop of about 1,000 births to moms not accessing prenatal care or receiving it late.

Over 40% of counties with calculable rates had an increase in the rate of mothers receiving late or no prenatal care from 2008 to 2014. The largest rate increases occurred in midsize counties (9%) while the rate decreased in urban counties (-12%). Almost half of the cities and townships with an available rate experienced an increase in the rate of women receiving late or no prenatal care. These rate increases ranges from a low of 4% in Ann Arbor and Canton to a high of 174% in Meridian Township.

A woman's experience with prenatal care may also impact whether she seeks early care and/or completes the recommended number of visits during her pregnancy. Between 2012-2013, surveys show that about 90% of Michigan moms were satisfied or very satisfied with their prenatal care.[10] Another 10% reported feeling neutral, dissatisfied or very dissatisfied.[11]

Babies with low birthweights

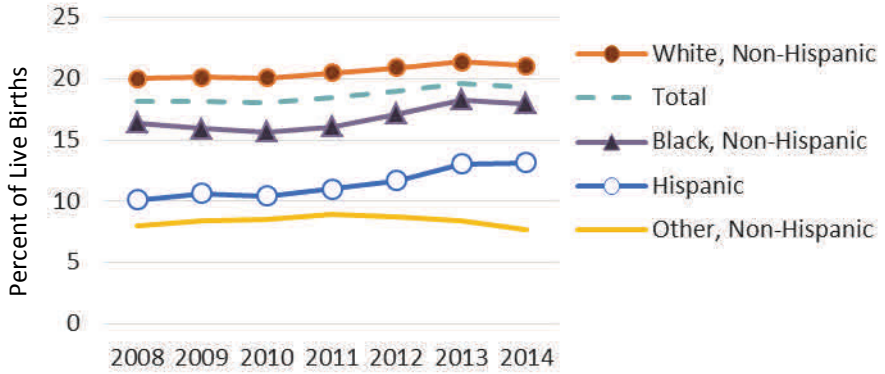
Babies who are born too small can experience many health risks early on in their lives, which can impact their long-term overall well-being. Low birthweight in babies is associated with preterm births, poor prenatal care, smoking during pregnancy and a number of other pregnancy and birth-related complications. Albeit very minimal, the state has had some progress in reducing the percent of babies born too small. In 2008, 8.5% of Michigan births were low birthweight and in 2014, the rate dropped to 8.4%, representing slightly over 1,000 fewer babies born too small.

Over the trend period, about 38% of counties with rates had an increase in babies born too small. The rate changes ranged from slight increases of 1% in Oakland County to more than doubling in Baraga and Iron counties. Even more, 38 of 69 cities reviewed experienced an increase in the rate of babies born with low birthweights. The largest rate increase occurred in the city of Burton where the rate of babies born too small went from 7.7% to 10.2% of births. Some of the cities/townships with the lowest rates also had the largest decreases, including Georgetown Township and White Lake Township.

SMOKING AND PRETERM BIRTHS ON THE RISE.

One of the main results of smoking during pregnancy is that the baby is born too early. There are a number of negative health outcomes for children who are born too early and/or whose mother smoked during her pregnancy. Smoking during pregnancy causes chemicals, such as nicotine, carbon monoxide and tar to be passed on into the baby's bloodstream, which can reduce the amount of

While the rate of births to white mothers smoking during pregnancy is higher than average, the rate for Hispanic mothers rose significantly.



Source: Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics

oxygen a baby receives and slow growth and/or damage his or her heart, lungs and brain.[12] Plus, smoking while pregnant can cause a number of complications at birth, low birthweight in babies, birth defects and increase the likelihood of a sleep-related death.[13]

Further, when babies are born too early, they are more likely to experience adverse health outcomes. For example, children who are born preterm and whose mothers smoked during pregnancy are at a higher risk of chronic lung disease and asthma.[14] Additionally, preterm delivery is a leading cause of death, disability and disease in babies.[15]

Not only are these two measures—smoking during their pregnancy and babies born too early—strongly related, but both rates have increased statewide from 2008 to 2014. In Michigan in 2014, 19.3% of births were to mothers who smoked while pregnant, more than a 6% rate increase from 2008, and the state ranks 27th in the country on this measure (No. 1 having the lowest rate). Further exposure during pregnancy occurs when there is smoking in the home. In 2012-2013, about 6% of births were to mothers who did not smoke, but reported that smoking was allowed in their homes.[16] Similarly, while the rate of smoking during pregnancy has increased, in 2014, over 12% of births were considered preterm (less than 37 weeks gestation), which is more than a 20% rate increase from 2008.

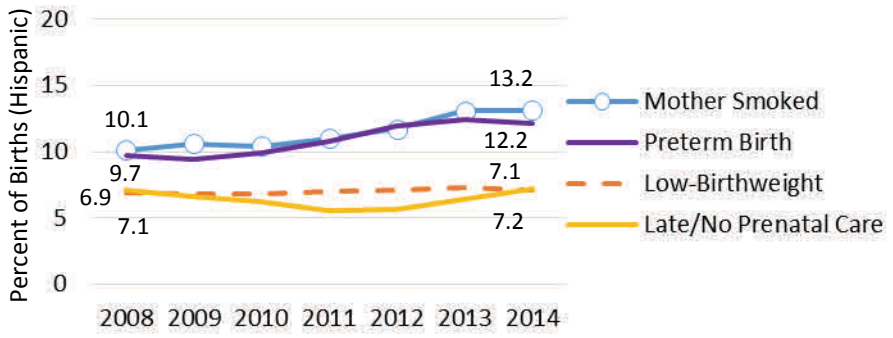
In 2014, Michigan's largest 69 cities and townships, averaged 16.6% of births to mothers who smoked during pregnancy. This is lower than the remaining cities and townships, which averaged 22.1% of births. Of the 69 cities and townships reviewed, Bloomfield Township had the lowest rate of births to moms who reported smoking while pregnant (2.7%) and Bay City had the highest rate (39.4%). From 2008 to 2014, 22 of these cities and townships experienced a decline in births to mothers who smoked during pregnancy ranging in rate decreases of 0.3% to 47% (average of -17.2%). However, Pontiac saw its rate more than triple from 2008 and the rates for Meridian Township and Muskegon doubled. Cities and townships examined that experienced increases over the trend period averaged a rate increase of nearly 33%.

Related, only 11 of the 69 cities and townships had a decline in the rate of babies born too early averaging an almost 10% rate decrease. The remaining communities experienced rate increases averaging over 28%. The city of East Lansing had the lowest preterm birth rate (8.4%), along with one of the largest improvements (-19%). Pontiac, on the other hand, had the highest rate (20.6%) of births to babies born too early—and it had one of the highest rate increases nearly doubling from 2008 (11.1%). The rest of Oakland County, while having a lower rate of preterm births (12.4%), still had a rate increase from 2008 of over 41%.

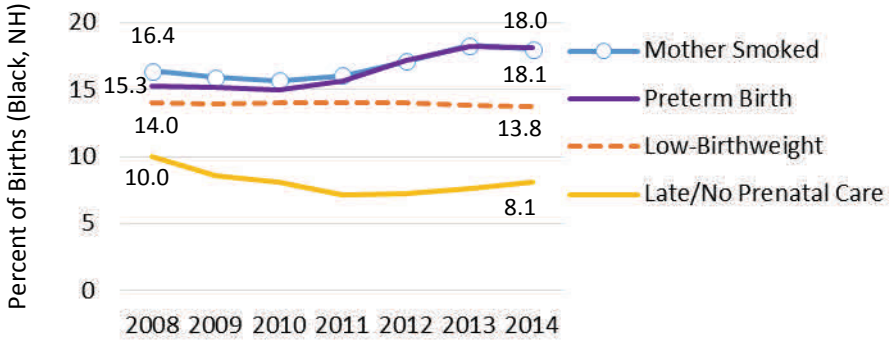
DISPARATE HEALTH OUTCOMES EXIST BY RACE AND PLACE.

Many health disparities by race and ethnicity exist for mothers and babies today due to historical policies and practices. Institutional racism and system biases over time have led to fewer people of color with access to healthcare, insurance and services and to an underrepresentation in the healthcare workforce. For example, public health improvements in the 19th Century, such as sanitation, housing and improved water and milk supplies, often left out many communities of color from experiencing the benefits of this progress.[17]

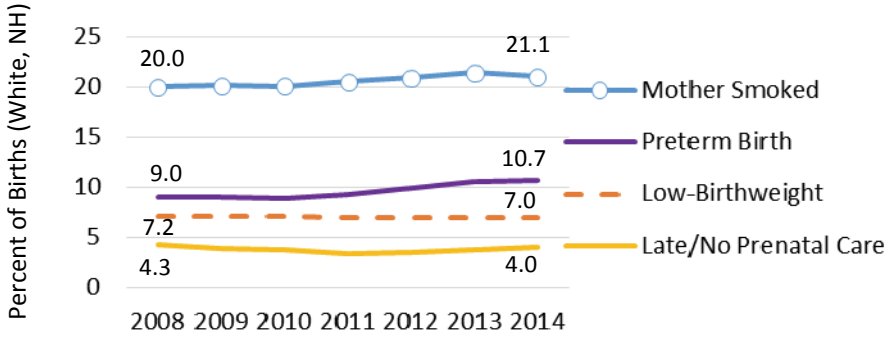
Latina Mothers: Key indicators of health worsening, especially smoking and preterm births.



African-American Mothers: Key indicators stagnate, smoking and preterm births rising.



White Mothers: Key indicators stagnate, smoking and preterm births rising.



Note: Single year data for 2008, 2-year average for 2009, and 3-year averages for other years.
Source: Michigan Department of Community Health, Vital Statistics and Health Data Development Section.

Over 2008 to 2014, Latina mothers and their babies have experienced significant worsening in a number of measures that are important to their health. While rates of White mothers smoking during pregnancy remain the highest of the state's three largest racial/ethnic groups (21.1%), the rate for Latina mothers has increased the most—rising by nearly 30%. The rate increased by almost 10% for African American mothers and 5.2% for White mothers. Similarly, the rate of Latina mothers whose babies are born too soon rose by over 26% during the trend period. After a few years of improvement or stagnation, the rate of Latina mothers receiving late or no prenatal care and whose babies have low birthweight worsened from 2011-2014.

African-American mothers experience worse maternal and child health outcomes on three of four key measures than White mothers and their babies. African-American mothers smoking during pregnancy (18%) and whose babies were born too early (18.1%) trend similarly. The rate of expectant mothers smoking increased by nearly 10% while preterm births worsened by over 18% during the trend period. Although the rate of African-American mothers receiving late or no prenatal care improved in 2014 compared with 2008, there has been a worsening trend since 2011. The percent of African-African mothers whose babies are born with low birthweight remains high and stagnant.

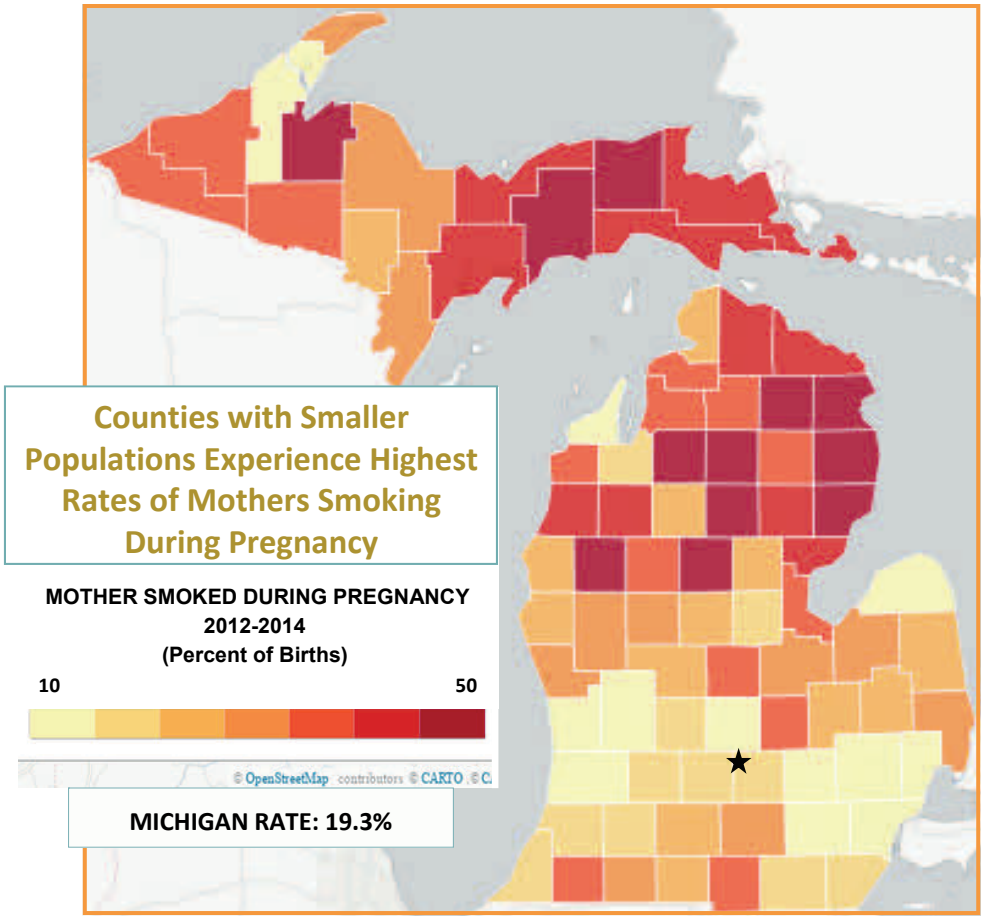
On three of four of the health indicators, White mothers and their babies do better than both Latina and African-American mothers and babies. However, the rate of smoking during pregnancy is highest amongst White mothers (21.1%) and the rate

increased by 5.2% from 2008 to 2014. Despite these higher rates, survey data show that healthcare providers are less likely to discuss the dangers of smoking during pregnancy with White mothers (71.5% discussed) than with Black mothers (85% discussed).[18] Like Latina and African-American mothers, White mothers experienced improvements in receiving prenatal care during 2008-2011 with worsening trends since; however, the 2014 rate represents an improvement (7%) from 2008, unlike the other two groups. Similarly, while mostly remaining steady, the rate of low birthweights in babies born to White mothers has slightly improved (2.8%).

Mothers Smoking During Pregnancy

City/Township	2008 vs 2014 Rate Change	Percent of Births 2014 (3-Year Average) Total	White	Black	Hispanic	City/Township	2008 vs 2014 Rate Change	Percent of Births 2014 (3-Year Average) Total	White	Black	Hispanic
Allen Park	-7.7%	16.7	18.1	*	*	Meridian Twp	99.3%	10.1	12.8	11.1	9.4
Ann Arbor	71.0%	5.4	5.1	19.2	5.5	Midland	-11.8%	16.7	17.8	25.0	17.9
Battle Creek	12.6%	23.7	26.7	22.8	10.1	Mount Pleasant	56.4%	22.4	21.6	*	50.0
Bay City	36.1%	39.4	40.2	35.5	36.8	Muskegon	100.9%	29.5	32.9	27.7	18.9
Bloomfield Twp	*	2.7	*	*	*	Novi	-14.2%	6.4	9.5	3.7	*
Burton	-6.3%	28.9	32.0	15.6	18.6	Oak Park	17.7%	8.9	5.2	10.5	*
Canton Twp	10.2%	8.2	10.6	5.3	10.4	Orion Twp	-47.2%	18.1	18.8	*	22.2
Chesterfield Twp	7.1%	17.5	18.3	20.4	*	Pittsfield Twp	27.3%	9.9	11.1	18.9	5.2
Clinton Twp	-4.4%	17.6	20.9	10.0	21.2	Plainfield Twp	-37.3%	10.3	10.6	*	*
Commerce Twp	24.9%	15.0	16.3	*	13.3	Plymouth Twp	-41.9%	10.1	10.3	*	*
Dearborn	-10.4%	6.3	6.5	9.2	10.9	Pontiac	207.5%	21.4	38.2	18.4	11.0
Dearborn Heights	1.3%	15.1	16.5	10.3	23.1	Port Huron	15.0%	34.5	36.2	20.0	37.5
Delta Twp	32.3%	14.9	16.8	12.8	22.9	Portage	9.4%	14.4	15.1	16.3	9.3
Detroit	9.9%	18.1	25.2	19.0	7.6	Redford Twp	-12.4%	17.3	27.5	8.3	16.0
East Lansing	*	3.9	4.4	*	*	Rochester Hills	38.0%	7.6	8.6	*	11.4
Eastpointe	28.7%	18.0	31.3	6.1	28.6	Roseville	4.3%	24.5	30.8	8.9	26.7
Farmington Hills	-11.3%	6.0	8.7	4.6	*	Royal Oak	-28.8%	5.8	6.1	*	*
Flint	23.2%	27.7	39.7	20.8	28.6	Saginaw	24.5%	35.0	42.6	31.7	29.5
Flint Twp	-23.8%	27.0	32.2	18.8	34.6	Saginaw Twp	-0.3%	15.2	16.9	12.1	15.2
Garden City	59.3%	28.6	30.5	13.7	25.8	Saint Clair Shores	19.8%	16.4	17.4	*	*
Georgetown Twp	-20.6%	5.7	5.6	*	*	Shelby Twp	3.1%	14.0	14.9	7.1	9.1
Grand Blanc Twp	-6.0%	13.4	15.2	*	28.0	Southfield	-18.7%	6.3	8.0	5.7	10.3
Grand Rapids	3.3%	11.7	12.3	16.8	5.0	Southgate	9.4%	20.9	24.1	7.0	13.6
Highland Park	15.4%	21.3	*	21.3	*	Sterling Heights	18.9%	10.4	11.7	7.0	17.5
Holland	40.9%	11.2	12.6	14.3	8.8	Taylor	3.0%	27.5	36.3	13.3	20.5
Holland Twp	110.0%	12.0	14.0	31.8	9.2	Troy	-19.0%	4.5	6.6	6.5	*
Inkster	6.0%	21.9	32.2	19.7	20.6	Warren	-3.5%	19.2	24.7	13.0	22.2
Jackson	50.0%	34.7	38.0	30.4	23.5	Waterford Twp	74.6%	18.4	20.3	12.7	9.1
Kalamazoo	34.4%	22.8	20.7	31.5	11.9	W. Bloomfield Twp	14.7%	3.4	3.2	6.8	*
Kentwood	-23.3%	9.7	11.5	10.0	5.7	Westland	4.0%	21.0	26.9	11.8	13.8
Lansing	105.5%	24.2	28.1	22.8	21.3	White Lake Twp	15.3%	20.5	21.1	*	19.4
Lincoln Park	0.6%	28.9	38.8	17.9	11.3	Wyandotte	3.1%	26.3	27.0	*	27.3
Livonia	-7.6%	11.7	12.5	6.5	16.4	Wyoming	0.3%	13.6	16.7	17.0	5.3
Macomb Twp	14.4%	9.3	9.9	5.4	11.7	Ypsilanti Twp	-21.6%	21.2	20.6	25.3	13.7
Madison Heights	16.7%	15.7	18.0	10.0	*						

* Data not available | Source: Michigan Department of Health and Human Services, Division for Vital Records and Health Statistics



Many times where someone lives has a significant impact on his or her ability to access appropriate and necessary care and services, which can lead to negative health. In Michigan, the rate of expectant mothers smoking tends to be much higher in counties with a lower population. Alcona County ranks 75th in population size (No. 1 being largest), but has the highest rate of births to mothers smoking during pregnancy (44.3%). On the other end, Wayne County—the most populous county—has one of the lower rates in the state (17.3%), ranking it amongst the top 10 counties. Other small counties faring poorly in the rate of births to mothers smoking during pregnancy include: Baraga (42.9%), Crawford (43.8%), Luce (42.9%) and Roscommon (44%). Although, there is a concentration of higher rates of births to expectant mothers smoking in the lower northern part of the state.

POLICY RECOMMENDATIONS: IMPROVING HEALTH OUTCOMES FOR MOMS AND BABIES, REDUCING SMOKING.

For children to do well, they must be healthy and this begins before birth. A mother's health, especially during her pregnancy, can have significant impacts on the well-being of her child over time. The effects of institutional and structural barriers that have led to racial and ethnic health disparities must be eliminated. Smoking—and the consequences of smoking—can be prevented in order to reverse the worsening trend in expectant mothers to improve the health of all babies. Annual healthcare costs directly caused by smoking are $4.59 billion in Michigan.[19]

Boost efforts to reduce and prevent smoking, especially during pregnancy and among youth.

Overall, the state has reduced funding to prevent smoking by 34% since budget year 2008. Funding targeted to help prenatal smoking has increased by a meager $800. It should be no surprise that less than 2% of mothers report receiving classes or support for smoking cessation and that only 5% of mothers who smoked during the last three months of pregnancy were referred to a smoking cessation program.[20,21] Further, in budget year 2016, the state ranked 44th in the country in meeting the Centers for Disease Control and Preventions' recommended spending levels in tobacco prevention.[22] In fact, the ratio of spending by tobacco companies to market their products to the state spending on tobacco prevention is 189.7 to 1.[23]

More than 24% of annual tobacco settlement receipts are used by the state to cover debt service, including $60 million in the last budget year (2016).[24] To increase public awareness with effective smoking prevention and cessation campaigns and ensure services are available, the state should increase the amount of funds it spends using tobacco settlement money and tax revenue on evidence-based initiatives targeted to helping expectant mothers quit smoking.

Ensure strong implementation of e-cigarette and hookah regulations to reduce smoking amongst youth.

Intentional marketing of tobacco products to young people has increased use in youth—90% of adult smokers started at or before the age of 18.[25] The use of e-cigarettes in youth also tripled between 2013 and 2014.[26] And, until recently, e-cigarettes and hookahs were not federally regulated and could be sold to minors. Beginning in August 2016, the U.S. Food and Drug Administration finalized rules requiring retailers to only sell e-cigarettes and hookahs to those who are 18 or older. There will need to be an ongoing education campaign to retailers and consumers about these changes and oversight to ensure compliance.

Increase cultural competency training with all health workers and grow a diversified workforce.

Michigan is becoming a more diverse state. In 2014 compared to 2008, 70 counties experienced an increase the number of young African-American children under six, 55 counties had an increase in young American Indian children and 74 counties had an increase in young Hispanic children. Only eight counties had an increase in the young White child population. The current healthcare workforce should be expanded in a way that reflects the changing population. Practitioners of color are also more likely to work in underserved communities and provide healthcare in communities of color.[27]

In addition to diversifying the healthcare workforce, providers need tools to help identify and address racial and ethnic health disparities, such as cultural competency. This improved understanding of the needs of communities of color may also include language barriers and other access issues that prevent the continuity of care and will help address healthcare disparities.

ENDNOTES

1. In 2008 changes were made to the data collection of the following indicators: 1) Mother smoking during pregnancy; 2) Late or no prenatal care; and 3) Mothers without a high school diploma or GED resulting in the availability of only one year of base data for those measures. All other measures use 2006-2008 (3-year average) compared to 2012-2014 (3-year average).
2. American Cancer Society. "Health Risks of Secondhand Smoke." http://www.cancer.org/cancer/cancercauses/tobaccocancer/secondhand-smoke, accessed November 9, 2016.
3. American Academy of Pediatrics. Julius B. Richmond Center of Excellence. "Dangers from Thirdhand Smoke." http://www2.aap.org/RichmondCenter/DangerFromThirdhandSmoke.html, accessed November 9, 2016.
4. House Fiscal Agency. "Memorandum: Smoking Prevention Program Funding." September 7, 2016. These funding trends do not include any Medicaid smoking prevention services and program spending. Prenatal smoking cessation funding levels are based on the Special Projects line item and/or Prenatal Care Outreach and Service Delivery Support line item.
5. Ibid.
6. Michigan PRAMS Survey, 2012-2013 birth years. 1.9% of mothers (95% confidence interval 1.4% - 2.5%) report that they received "a class or support group to help stop smoking cigarettes" during pregnancy.
7. Lindo, Jason and Analisa Packham. "Long-acting Reversible Contraceptives Reduced Teen Pregnancies, Especially in Higher–poverty Areas." Texas A&M University. Center for Poverty Research – University of California, Davis. http://poverty.ucdavis.edu/policy-brief/long-acting-reversible-contraceptives-reduced-teen-pregnancies-especially-higher, accessed November 9, 2016.
8. For more background information on teen births in Michigan, please see the 2015 Right Start report.
9. Michigan PRAMS Survey, 2009-2013 birth years. 91.8% of mothers under 20 years of age (95% confidence interval 89.2% - 93.7%) report that they or their partner were using postpartum contraceptives, compared to 82.3% of non-teen mothers (95% confidence interval 81.2% - 83.3%).
10. Michigan PRAMS Survey 2012-2013 birth years. 90.3% of mothers were satisfied or very satisfied with their prenatal care (95% CI 88.9% - 91.5%) and 9.7% of mothers were neutral or dissatisfied (95% CI 8.5% - 11.1%).
11. Ibid.
12. March of Dimes. "Smoking During Pregnancy." http://www.marchofdimes.org/pregnancy/smoking-during-pregnancy.aspx, accessed September 13, 2016.
13. Ibid.
14. Been, Jasper V., et. al. "Reducing tobacco smoking and smoke exposure to prevent preterm birth and its complications." Abstract. Paediatric Respiratory Reviews. September 19, 2015. http://www.prrjournal.com/article/S1526-0542(15)00087-1/abstract, accessed November 3, 2016.
15. Centers for Disease Control and Prevention. "Smoking During Pregnancy." https://www.cdc.gov/tobacco/basic_information/health_effects/pregnancy/, accessed November 3, 2016.
16. Michigan PRAMS Survey 2012-2013 birth years. 89.4% of mothers said that smoking was not allowed anywhere in their home during pregnancy (95% CI 88.0% - 90.7%). 8.3% said that smoking was allowed in their home in some times at some places, and 2.3% said that smoking was permitted anywhere (combined 10.6%, 95% CI 9.3% - 12.0%). 15.0% of Michigan mothers reported smoking during the final three months of their pregnancy (95% CI 13.5% - 16.7%); however the total proportion of live births exposed to smoke (mother or in the home) is 20.8% (95% CI 19.0% - 22.6%), nearly 6% more exposure than maternal smoking alone describes.
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18. Michigan PRAMS Survey, 2009-2013 birth years. Overall 74.3% of mothers (95% CI 73.1% - 75.4%) had a talk about the dangers of pregnancy smoking with their prenatal care providers. More non-Hispanic black mothers had this conversation (85.0%, CI 83.7% - 86.3%) than non-Hispanic white mothers (71.5%, CI 70.0% - 73.0%).
19. Campaign for Tobacco-Free Kids. "Broken Promises to Our Children: A State-by-State Look at the 1998 State Tobacco Settlement 17 Years Later." http://www.tobaccofreekids.org/microsites/statereport2016/, accessed September 6, 2016.
20. Michigan PRAMS Survey, 2012-2013 birth years. 1.9% of mothers (95% confidence interval 1.4% - 2.5%) report that they received "a class or support group to help stop smoking cigarettes" during pregnancy.
21. Michigan PRAMS Survey, 2012-2013 birth years. 15.0% of mothers reported smoking in the final three months of pregnancy (95% CI 13.5% - 16.7%). Out of these ~32,300 active smokers, only 1,800 received a class or support group to assist them with smoking cessation (5.6% of smokers, 95% CI 3.6% - 8.7%).
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