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This report was prepared by Sarah Lewis, W.K. Kellogg Population Health Council Fellow, and Dennis Archambault, Director of Public Affairs; with contributions by Sukhesh Sudan, MPH student; and Janette Davis, Chief Financial Officer. Special thanks go to Chris Fussman, Coordinator of the Behavioral Risk Factor Surveillance System of the Michigan Department of Community Health. We are also grateful to our reviewers, Workgroup co-chairs Kate Kohn-Parrott, Steve Gold, and Gary Petroni; Marjorie Mitchell; Joe Ferguson; Executive-in-Residence (HSR & Analytics) David Goldbaum; and MPH student Meredith Hipp; and to Grants Manager Justen Lewis for advice and feedback. Excerpts from this report should credit the Detroit Wayne County Health Authority/W.K. Kellogg Foundation Population Health Council. The data presented in this report was analyzed by the Detroit-Wayne County Health Plan(s) Initiative and published in February 2015 on the Health Authority web site at www.healthaccess1.org as: “Snapshot of Health in Detroit and Wayne County Communities Using Michigan Behavioral Risk Factor Survey Data.”

For more information about the programs and services of Detroit Wayne County Health Authority call 313-871-3751 or visit our website at www.healthaccess1.org.
Unnatural Causes expert and public health official Dr. Anthony Iton has urged public health practitioners to “characterize and fully illuminate the powerful relationship between social inequities and health inequities” in order to rise to the challenge of eliminating health disparities. Geographic analysis of health outcomes and social determinants of health is a powerful tool. The themes described in the 2013 State of Population Health—transportation, housing instability, economic insecurity—represent the structure of opportunity in society. This edition of the report adds to the health equity picture by illustrating the relationship between social determinants of health and health outcomes, measures of quality of life, risk factors, and health care access at the community level in Wayne County and Detroit.

In our role as a local agent to create consensus around population health recommendations for policy change and health status improvement, the Population Health Council has established an inclusive infrastructure, including nearly all of the key stakeholders in public health. Our priority this year has been to promote a more action-oriented agenda, at least in part due to 2014 Population Health Forum participants, who charged us to reduce health inequities through upstream approaches including policy intervention, message refinement and coordination, and fostering partnerships across sectors.

In response to this charge some of our accomplishments include recruitment of guest speakers and new members from multiple health and non-health sectors, including the food system, urban planning and design, housing advocacy and environmental justice.

The Population Health Blog was conceived as the voice of the many stakeholders who are contributing to our goals of creating a healthier community. Since its launch one year ago, nearly 50 pieces have been posted on topics ranging from maternal infant health outcomes to urban design, chronic stress and foreclosure. More than half were from guest contributors.

In recognition of the social and economic determinants of health, we co-sponsored the Wayne State University Law School Foreclosure/Bankruptcy Conference. Foreclosure is a prime example of a factor that affects both individuals and communities.

Finally, we made a significant policy statement by reaching consensus on a public statement regarding water bill assistance to low income Detroiters. We recommended that a solution must not just provide assistance in the form of charitable donations, but also be sustainable and is best funded through a means-tested public source like the Medicaid program.

We look forward to continued active collaboration with our organizational partners to improve population health in all of Wayne County.

Message from the Population Health Council Co-Chairs

Dr. Mouhanad Hammami, M.D.
Co-Chair,
Population Health Council
Chief of Health Operations,
Wayne County Department of Health and Human Services
County Health Officer,
Wayne County

John A. Powell
Co-Chair,
Population Health Council
Director, Haas Institute for a Fair and Inclusive Society
University of California, Berkley
Collaboration has defined the work of the Health Authority, with the Population Health Council serving as one of our most ambitious efforts. In its third year, the Council has demonstrated its ability to be relevant and responsive to issues impacting our community, while serving as a reflective and prophetic force in local health policy. We are grateful for the hard work of our Council members, all of whom have very challenging professional roles. Having the right people at the table does make a substantial difference.

Earlier in the year, the Health Authority, together with the Greater Detroit Area Health Council, cosponsored our first Population Health Forum. Targeted to public officials and others with an interest in population health, we focused the forum on the Robert Wood Johnson County Health Rankings. Its message and purpose are evident to organizations like ours that share accountability for the health status of our region. We can and must positively impact the health indicators of our community in relative as well as absolute terms.

At a recent event highlighting the 25th year of America’s Health Rankings, published by United Health Foundation (http://www.americashealthrankings.org/MI), panelists observed that opportunities to collaborate abound: between environmentalists and public health, between medical care providers and community organizations, between community stakeholders and business. For example, community benefit agreements can be implemented around economic initiatives at the local level to foster development while benefitting or assisting the affected community.

We believe that the Population Health Council is the vehicle for achieving consensus and moving this agenda forward, by identifying the key issues and addressing them collaboratively. Together with our community partners, we are advocating for Health in All Policies at the local level of government.

Another population health initiative sponsored by the Health Authority is the Detroit-Wayne County Health Plan(s) Initiative. Its objective is to design and deploy one or several health plans that address highest-priority medical conditions prevalent in Detroit and Wayne County. The organizations involved are highly motivated, ready and capable of deploying innovative health and wellness interventions. They include community health care providers, public health officials and organizations with the capacity to impact the social determinants of health. David Goldbaum, Executive-in-Residence of health services research and analytics, is directing this initiative.

We are grateful to the W.K. Kellogg Foundation for its continued support of the Population Health Council, and our population health fellow Sarah Lewis.

Message from the Executive Director

Chris Allen
Executive Director,
Detroit Wayne County Health Authority
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Executive Summary

This second annual *State of Population Health* shares the same goals as the first: identify key population health issues and encourage collaborative engagement to improve the health status of individuals in Detroit and Wayne County. Supporting health status analysis at the community level and identifying meaningful correlations with the social determinants of health is the first step toward actionable, measureable programmatic interventions. Thus Health Authority initiatives as well as initiatives implemented by our organizational partners to address population health problems are woven throughout the narrative.

Further, this report both widens the geographic focus by incorporating Wayne County, and sharpens it, by presenting health indicators at the zip code level. Based on these analyses, the Population Health Council presents these key findings:

- An essential part of implementing the Patient Protection and Affordable Care Act (ACA), enrollment in Healthy Michigan reached over 90 percent of the target population. Increased health literacy efforts would support and enhance the work done by navigators.

- The concept of the safety net is ever expanding to include agencies and services outside the health care sector, but access to and quality of health care remains a priority, especially for people living in shortage and underserved areas.

- The great variation in risk factors, chronic conditions prevalence, and preventive strategies reported across Detroit and Wayne County zip codes was reflected in an equally wide variation of health outcomes and quality of life. This supports the observation that one’s life expectancy could very well be predicted by one’s zip code.

- Effectively addressing the social determinants of health including poverty, income and education likely plays as important a role as traditional health care services delivery in providing for health and wellness. Reporting health variables categorized by levels of social determinants helps reveal important patterns obscured by the overall picture.

- Understanding and addressing community level health concerns requires community level health data, calling for analysis of data from surveys, claims, vital records and other data at the sub-County, sub-City levels.

In the coming year, the Population Health Council will focus its efforts on persistent and pervasive health inequities. These include more targeted research, continued development of best practice interventions, and effective responses to regulations, policies, and practices that negatively affect the health of Wayne County citizens.
State of the Safety Net

Implementation of the Affordable Care Act

Access to care, particularly preventive, wellness care, is an essential component of population health. While representing a relatively small portion of health expenditures, prevention and screening are keys to effective population health approach. The Patient Protection and Affordable Care Act (ACA) has expanded access to health insurance for most low income people. Michigan is one of the states that has entered into a partnership with the federal government to implement an expanded Medicaid program, known as Healthy Michigan. With the expansion the goal of universal payment to providers for health care services for all is closer to being achieved. However, this effort does not ensure that all populations can afford deductibles and copayments for catastrophic policies, nor does it ensure that enrollees will take advantage of the no-cost wellness benefits provided under the program.

Michigan, particularly Southeast Michigan, was very well prepared and organized to promote awareness and enrollment in the health insurance exchange and Healthy Michigan plans, thanks to the leadership of the Michigan Consumers for Healthcare, which funded navigation agencies throughout the state, including six in Wayne County. The Health Authority served as a lead navigator, convening other navigation agencies to coordinate efforts in Wayne County. The Health Authority also provided extensive training for certified application counselors, extending the reach of enrollment efforts. The City of Detroit also led and organized navigators to focus on Detroit-specific objectives.

Enrollment reached over 90% of the Healthy Michigan eligible population. Statistics on county-specific enrollment through the Healthcare Marketplace were not made available by the federal government during the first year of the ACA implementation.

Increased health literacy, leading to positive health behavior change, and increased use of community-based primary care services, remain opportunities for enhancing the potential of the ACA to improve health status and reduce health costs. Efforts are under way to promote health literacy among all populations, particularly those compromised by illiteracy and language barriers.

Health Care Coverage

Compared to 7% in the United States, only 4% of Michigan and Wayne County children were uninsured in 2012. This has improved since 2008, when 5% were uninsured. A Statistical Appendix to this Report presents preliminary results from a study using the latest three years of data from the Michigan Behavioral Risk Factor Survey (MiBRFS). Based on these data, Detroit adults between the ages of 18 and 64 were almost twice as likely to report being uninsured compared to the average Michigander (32% versus 17%; see Appendix Figure 5). When final ACA data for 2014 become available, uninsurance rates are anticipated to be dramatically lower.

1 The Report Appendix is available at the Health Authority web site at www.healthaccess1.org.
Safety Net Overview

The Health Resources and Services Administration (HRSA) defines Medically Underserved Areas (MUAs) as a whole county or a group of contiguous counties, a group of county or civil divisions or a group of urban census tracts in which residents have a shortage of personal health services. Such locations are often contiguous with high rates of infant mortality and poverty. Medically Underserved Populations (MUPs) may include groups of persons who face economic, cultural or linguistic barriers to health care. Most of the City of Detroit; along with the cities of Highland Park, Inkster, River Rouge, Ecorse and Wayne; and parts of Romulus, Taylor, Lincoln Park and Dearborn are considered a MUA or MUP.

Health Professional Shortage Areas (HPSAs) have a shortage of primary medical care, dental and/or mental health providers. They may be urban or rural areas, population groups or medical or other public facilities. Most of the cities of Detroit and Highland Park as well as parts of Hamtramck, Redford and Inkster are designated HPSAs. In 2014, census tracts and facilities in Wayne County classified as HPSAs broke down as follows:

- Primary Care HPSAs were so designated if the physician to population ratio was under 1:3,500. In Wayne County the service areas of Inkster, Brightmoor, Eastside Detroit, MacKenzie/Brooks, North Central Detroit/Highland Park, Southwest Detroit and Tireman/Chadsey are primary care HPSAs.
- Dental HPSAs are based on a dentist to population cutoff ratio of 1:5,000. In Wayne County the low income populations of River Rouge and Southwest Detroit; the Medicaid eligible populations of Northeast, Northwest and Southeast Detroit; and the entire city of Ecorse are designated dental HPSAs.
- Mental Health HPSAs are based on a psychiatrist to population ratio of 1:30,000. In Wayne County the service areas of Dearborn, East Detroit, Hamtramck, Northwest Detroit and South Detroit are designated mental health HPSAs.

George Washington University tests community benefit web tool in Detroit

George Washington University has enlisted the guidance and expertise of the Health Authority, its Primary Care Network Council, and public health and community agencies to develop and test a prototype tool to provide easy access to the community benefit investment information that all nonprofit hospitals must submit annually to the Internal Revenue Service. When finalized, the tool will enable users to compare hospital investments on the basis of factors such as geographic location, community economic status, and hospital characteristics such as size and teaching status. Data will be provided in a report format based on pre-populated information hospitals provide in their IRS Schedule H worksheet, as well as from other publicly accessible data sources. Detroit is one of eight locations in the nation testing this tool.

This project is administered through the Population Health Council’s Community Needs Assessment workgroup, which is charged with promoting the aggregation of data from hospital community needs assessments, related action plans, and promoting collaboration among health care and wellness providers.
In Wayne County the following locations are designated as HPSA facilities:

- American Indian Health and Family Services of Southeast MI
- Wayne County
- Community Health and Social Services
- Covenant Community Care, Inc.
- Detroit Community Health Connection
- Detroit Health Care for the Homeless
- Health Centers Detroit Foundation
- The Wellness Plan
- Western Wayne Family Health Center

These health centers with 31 service access points serve Wayne County, but only 10.5% of the low income population (below 200% of the Federal Poverty Level) utilized them in 2013. When analyzed by zip code this ranged from 1% in Northville, Livonia and Plymouth to 26% in 48216 and 48210 and 33% in 48209 in Detroit.

## Population Profile & Social Determinants

Health outcomes and risk factors vary according to characteristics such as race, sex, income and education. In the County Health Rankings model of population health status measurement, clinical care represents only 20% of the equation. Given the link between non-health care factors and health outcomes, we would anticipate that the indicators presented in the following sections are likely to be highly correlated with demographic, economic and social factors.

### County Health Rankings Model of Health

- Health Behaviors: 30%
- Clinical Care: 40%
- Physical Environment: 10%
- Social and Economic Factors: 20%

Source: Uniform Data System, HRSA Bureau of Primary Health Care.

*Figure 2. Health Professional Shortage Areas in Wayne County, 2013*

*Figure 3. HRSA Health Centers in Wayne County Service Area, 2013*
The 2010 Census revealed that Michigan’s population decreased slightly since 2000, while population flows within the state were more dramatic. Between 2000 and 2013 Wayne County’s population decreased by 13.9%, and Detroit’s by twice as much at 28% (Appendix Table 1). A shrinking population can significantly impact the availability and effective utilization of community health and health care resources. As providers leave areas with decreasing populations, the people who remain are served by ever fewer providers.

Michigan’s age distribution is similar to the City of Detroit and Wayne County, with about a quarter of the population under age 20, and between 12-15% over the age of 65. About two thirds of State, County and City households consist of married couple and single parent families.

The Detroit Wayne County Health Authority, together with faculty from the University of Michigan School of Public Health, have initiated a new, two-year population health certification program for physician residents of the Authority Health graduate medical education program. Program details will be presented at the American Association for Teaching Health Center’s annual meeting in November.

“We’re excited to introduce this component in our teaching health center residency program” said Chris Allen, CEO of the Detroit Wayne County Health Authority. “We are committed to providing the finest community-based training experience for our primary care residents. This certification program will prepare them to practice ‘community-centered’ medicine.

“The University of Michigan School of Public Health is the finest in the nation. Our teaching health center is the largest in the nation. Together with our academic partners Michigan State University College of Osteopathic Medicine, we are creating a model for other medical training programs.”

Community-centered health care integrates high quality, personalized treatment, while diagnosing and triaging patients to interventions that address the social issues which create conditions that foster the infirmity. The Population Health Certification Program will build skills to practice medicine through a population health lens; treating the whole persona and the environmental conditions that influence their health. Through monthly lectures from University of Michigan School of Public Health faculty, and special resident projects, Authority Health residents complete the program prepared to practice...
Nearly two thirds of Detroit households and 45% of Wayne County households earn less than $35,000 a year, while the state average is 37%. The proportion of people in Wayne County and Detroit living in poverty is also higher than the State average. Notably, more than half of Detroit children live in poverty.9

For about a third of people across the State, County and City, a high school diploma is their terminal degree. A quarter complete some college, but a larger percentage of Wayne County and Michigan residents obtain a bachelor’s degree or higher than Detroit residents.

The racial and ethnic makeup of each geographic area varies widely. Even among the nominally “white” population, the Detroit population is more heavily immigrant than the rest of Wayne County or Michigan. Notably, immigrants experience more adverse social determinants than majoritarian whites.

The Authority Health is funded through the Health Resources Services Administration, which has allotted $21 million to train up to 85 residents over three years. Residents in internal medicine, family medicine, pediatrics, obstetrics and gynecology, psychiatry, and a fellow in geriatrics, will train in community health centers, mental health centers, private practices, hospitals, and other areas which will enhance their appreciation of community-centered care.

The curriculum will include local, state, and national perspectives on health inequities, apply strategies to eliminate disparities in health outcomes, and engage with programs and services to impact population health in Wayne County. Residents will develop an understanding of the contextual dimensions of population health, develop a population health practice, use data to promote change, discover and manage inequities in health, and engage communities.

Authority Health is part of the teaching health center program, which was created to establish an innovative community-based model for residency training that enhances physicians’ skills and broadens their perspectives in the service of diverse, vulnerable populations. The goal is to retain these physicians in medically underserved areas like urban Detroit. Nationally, more than 30 percent of teaching health center residents establish their practices in communities where they train, according to the Journal of Academic Medicine.
The built environment, including housing and transit, also plays a role in health. The housing element of the Sustainable Communities Index\(^5\) includes measures of housing cost, quality, stability, and residential integration. Connections between these housing characteristics and health include spending a high proportion of income on housing at the expense of health care, and disproportionately higher exposure to air pollution, exacerbating respiratory illness. Seventeen percent of Michigan households and 23% of Wayne County households have at least one of four housing problems including overcrowding, high housing costs, or lack of kitchen or plumbing facilities.\(^1\) Additionally, many households in Wayne County (14%) and Detroit (25%) do not have access to a motor vehicle or reliable transportation, making visits to health providers challenging.

Given the multi-dimensional nature of health factors and outcomes, a population health mindset presents “a new chance for synergy between traditional medical care and traditional public health.”\(^1\)

Access to Detroit Water and Sewage Service Becomes International Issue

Facing the prospect of hundreds of people living without clean water service in Metropolitan Detroit, the Population Health Council issued a statement warning of a potential public health crisis and recommending a sustainable solution. The United Nations issued its own statement of concern as to a potential human rights violation on humanitarian grounds and conducted a site visit to Detroit to speak with community advocates about the issue. The letter below, signed by Population Health Council co-chairs John Powell, Executive Director of the Haas Center for a Fair and Inclusive Society, and Mouhanad Hammami, M.D., Wayne County Health Officer and Chief of Health Operations, was published in the Detroit Free Press:

“To Whom It May Concern:

“The City of Detroit has drawn international attention by seeking to collect unpaid water bills from thousands of customers, many of whom had fallen behind and owed significant sums. In that action, many low income people who would qualify for means-tested social benefits programs have also been held accountable for bills that they may not be able to pay.

“The city has revised its approach to this matter by implementing a financial assistance plan for low income customers that draws on funds raised through water bill payments and philanthropic donations. The program assumes that all citizens in Detroit can pay at least some part of their water bills—an assumption that is not made by human service programs, such as Medicaid.

“From a public health standpoint, access to clean water is essential to hydration, as well as uses that protect public health through preventing infectious disease: sanitation, cleaning, food preparation, and personal hygiene.

“From a health equity standpoint, people who cannot afford to pay their water bill are likely to be more vulnerable in other areas of their life, too. Households with children, people with serious medical conditions and the elderly are more likely to be low income and more likely to need financial assistance with having water service restored and maintained. For example, nearly three quarters of children in Detroit (73%) are living below 150% FPL ($35,775 for a family of four).

“Public health agencies have not defined this as a public health emergency. That may be because the population of those made vulnerable by this action is relatively small compared with the overall population. But this is a population health problem.
“Free clinics, emergency facilities, and water distribution sites are noting requests for water. News reports have identified people implementing illegal water hook-ups and borrowing water from neighbors and families.

“On a broader scale, this issue raises the question of how society provides life sustaining resources to its vulnerable citizens. A financial assistance plan funded through philanthropic sources is not sustainable. The Heat and Warmth Fund, in July, administered a water assistance program that exhausted $800,000 in a few weeks. Financial assistance for water should be assessed and funded in the same way other means-tested programs are funded.

“The United Nations framework on water as a human right states that water must be sufficient, safe, acceptable, physically accessible, and affordable to all. To comply with the affordability criteria, water and water facilities and services costs should not exceed 3 percent of household income.

“Even if you accept the criticism of those who cite the percentage of residents who pay cable television and cell phone bills—66 percent and 72 percent respectively—and not their water bills, about a third of Detroit citizens don’t have those services and can’t pay their water bills. In a city of over 700,000 residents, that’s a considerable number.

“We recommend that the State of Michigan work with the City of Detroit to develop a sustaining funding stream to ensure that those residents who qualify for Healthy Michigan also receive water service, subject to annual income reviews. A systemic, sustainable solution is the only way of ensuring water for our vulnerable citizens.”

“...People who cannot afford to pay their water bill are likely to be more vulnerable in other areas of their life, too.”
Chairman’s Message

During the past decade, the Detroit Wayne County Health Authority has evolved considerably, from an organization focused on creating a health care safety net in Detroit and Wayne County, to a leading proponent of population health in the region. I am proud of the growth of the Population Health Council, in its efforts to represent all of the major stakeholders in the broad definition of this emerging field and its early achievements at analyzing critical data and recommending policy changes.

Population health has become the major focus of the Health Authority. While our mission remains true to the charge outlined in the InterLocal Agreement that established the organization in 2004, our focus has crystallized in population health. Whether you consider our community-based primary care teaching health center program, the Nurse-Family Partnership, the MOTION Coalition on childhood obesity, or the many community initiatives with which the Health Authority is affiliated, they all impact population health.

This State of Population Health Report now serves as our annual report, in that our efforts are geared—and measured by—health status improvement. This is not the sole responsibility of the Health Authority. Our public health partners—Michigan Department of Community Health, Wayne County Health and Human Services Department, and Detroit Health and Wellness Department—and the many community health providers and advocates all share in this challenge. The Health Authority is the entity put in place by our governmental bodies to coordinate and maximize the resources available to make a substantial change in our community’s health status.

With this report we include the Health Authority’s financial narrative, which will be included in the final audit statement available for review this spring. I’m proud of this organization’s ability to create nine clear audits in its history. For more information on this, contact Janette Davis, Chief Financial Officer, at 313-871-37521.

Thank you for your interest in population health and the mission of the Health Authority.

Gail Warden  
Chairman

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Management’s Discussion and Analysis For The Fiscal Year Ended September 30, 2014

Using the Annual Report

The annual report consists of three parts—management’s discussion and analysis, the basic financial statements and required supplemental information. For your information, we have provided a summary.
The General Fund is presented on a modified accrual basis of accounting; a short-term view to tell how the resources were spent during the year, as well as how much is available for future spending. This information is then adjusted to the full accrual basis to present a long-term view of the Health Authority as a whole. The long-term view uses the accrual accounting basis, which measures the cost of providing services during the current year and whether the full cost of providing government services has been funded.

The General Fund modified accrual basis financial statements provide detailed information about the current financial resources. This is important as it demonstrates compliance with various state laws and shows the stewardship of the Health Authority’s revenue.

The Health Authority’s full accrual statements present information about the Health Authority’s total economic resources, including long-lived assets and any long-term obligations. This information is important as it recognizes the long-term ramifications of decisions made by the Health Authority on an ongoing basis.

The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of required supplemental information that further explains and supports the information in the financial statements.

Condensed Financial Information

The table on the previous page compares key financial information in a condensed format.

The Health Authority as a Whole

The Health Authority’s had an increase in net positions of $755,277. This increase is in part the result of leveraging available foundation funding against Medicaid Match dollars; the Nurse Family Partnership (NFP) program represents 57 percent of this funding increase. The Health Authority’s primary source of revenue is from federal grants, specifically the U.S. Department of Health and Human Services (HRSA) and through the MDCH Interdepartmental Agreement-Medicaid Outreach Services, and Contributions and Donations. Salaries and fringes are a significant expense representing 48 percent and 13 percent respectively of the Health Authority’s total expenses, a slight increase from the previous year. This increase was the result of the continued growth of the Authority Health Teaching Health Center. Contracted and consulting services were at 12 percent for the year representing a decrease in expenses from the previous year.

The Health Authority’s Fund

The Health Authority’s Board has the ability to create separate funds to help manage money for specific purposes, and to maintain accountability for certain activities. The Health Authority’s major fund consists solely of the General Fund.

Consistent with the increase in net assets and the leveraging of foundation dollars the fund balance increased by $724,539; this is $30,738 less than the change in net position. This difference is the result of how governmental accounting recognizes depreciation and capital outlays, in addition to financing activity with respect to governmental activities.

Funding Sources

For fiscal year 2014, the Health Authority’s sources of funding came from the community at large and various stakeholders, including: Michigan Department of Community Health/Federal Government, the Department of Health and Human Services - County of Wayne, W.K. Kellogg Foundation, the Jewish Fund, the Michigan Consumers for Healthcare and the U.S. Department of Health & Human Services – Health Resources and Services Administration (HRSA).
Indicators of Population Health

We have reported on some health conditions and risk factors by the key social determinants of income, race and education. However, data on some ethnic groups such as Arab/Arab American and smaller minority populations such as Asian, Native American and Hispanic/Latino tend to only be available at the State level.2

Primary Risk Factors

Analyses of MiBFRS data show the prevalence of three key primary health risk factors—smoking, lack of physical activity and low consumption of fruits and vegetables—across the State, County and City. Overall, less than half of respondents reported that they currently smoke or used to smoke (Appendix Figures 1a-1c). When analyzed by zip code, smoking prevalence ranged from 11% in Canton to 38% in Redford. The proportion who said they used to smoke also varied, from 10% in north central Detroit zip codes to 34% in Lincoln Park.

About a quarter of Michigan and Wayne County residents and a third of Detroiters said they had not engaged in any leisure time physical activity including running, calisthenics, golf, gardening, or walking during the past month (Appendix Figure 2). Low fruit and vegetable consumption was apparent across the three geographies, with a range of 24% to 40% of people reporting they ate them less than once a day (Appendix Figure 3).

2 Notably, the MDCH Health Disparities Reduction and Minority Health Section has conducted a BRFS-like survey of Arab American adults, with a report expected in 2015. Locally, colleagues at ACCESS (Arab Community Center for Economic and Social Services) have conducted surveys and published more than 70 papers on Arab and Arab American health.

Introducing “The Raising of America,” “Health in All Policies”

The Raising of America,” an outgrowth of the landmark documentary, “Unnatural Causes: Is Inequality Making Us Sick,” will be aired on Public Broadcasting Service in 2015. A collaboration of community health organizers, known as “Power to Thrive,” organized a statewide community engagement around the issues raised in the film.

After “Unnatural Causes” was aired, more than 25,000 community dialogs, policy forums, trainings, classrooms, and town hall meetings were held, increasing awareness of the reasons behind health disparities and launching widespread initiatives involving population health. Michigan organizers hopes the conversation will be enriched by “The Raising of America.”

“The Raising of America” focuses on the first years of life. Little has been done to develop a “compelling new narrative capable of changing the way parents, practitioners, policy makers and the public think about society’s responsibilities and interest in these first crucial years,” according to the film’s website (http://www.raisingofamerica.org/?q=project). “The conventional default explanations of child development – ‘good’ vs. ‘bad’ parents, genetics and cultural dysfunction – still predominate. Perhaps not coincidentally, little progress has been made in improving outcomes for America’s children.”

“Power to Thrive” organizers will use the film to also raise awareness of
**Obesity and Overweight**

Rates of overweight (having a body mass index or BMI between 25 and 29.9) and obesity (having a BMI over 30) have been increasing at an alarming rate, partly as a result of the poor nutrition and inadequate physical activity described above. Michigan adults reporting no leisure time physical activity are much more likely to report obesity than their physically active counterparts (39% versus 29%).

Being overweight can lead to multiple costly chronic conditions such as diabetes, heart disease and stroke.

As shown in Appendix Figure 10a, about a third of people in Michigan, Wayne County and Detroit are classified as having a healthy weight. However, analyses reveal that weight status varies by factors such as geography, race, income, and education. Geographically, combined overweight plus obesity was lowest in the Grosse Pointes at 54%, and over 75% in 6 different Detroit communities (Appendix Figures 10b and 10c).

Growing rates of childhood obesity has been reported extensively and is a particular concern in the County; however, the MiBRFS only interviews adults.

**Secondary Prevention Strategies**

People who have a routine annual checkup are more likely to engage in other preventive health practices, such as getting health screenings and immunizations. The MiBRFS data show that about one third of Wayne County residents and one quarter of Detroit residents said they have not had a routine checkup in the past year, compared to 32% in the state of Michigan (Appendix Figure 4a). Across Wayne County this indicator ranged from 15% in 48227 in Detroit to 45% in southwestern Wayne County communities (Appendix Figure 4b).

“The Health in All Policies,” a movement to institute a health lens on community development. Ingham County was the first to introduce a “Health in All Policies” resolution. Organizers in several other counties are working in a similar vein. According to the American Public Health Association, which advocates for the concept, “The environments in which people live, work, learn, and play have a tremendous impact on their health. Responsibility for the social determinants of health falls to many non-traditional health partners, such as housing, transportation, education, air quality, parks, criminal justice, energy, and employment agencies. Public health agencies and organizations will need to work with those who are best positioned to create policies and practices that promote healthy communities and environments and secure the many co-benefits that can be attained through healthy public policy.”

MOTION Coalition launches new logo, continues childhood obesity advocacy

The MOTION Coalition (Michigan Organizations To Impact Obesity & Nutrition) was created out of the Health Authority’s Childhood Obesity Task Force which was convened to address the urgent issue of childhood obesity. Childhood obesity is not just a medical matter, but a community predicament. Reflecting this dynamic, the coalition is comprised of various stakeholders from youth organizations to health and human service agencies.

The mission of the coalition is to “accelerate organizational and community efforts that promote physical activity and healthy eating in children to optimize their health and wellbeing.”

The vision statement, “Thriving children, thriving communities,” reflects the broad view that this group is taking on the issue of childhood obesity.

In 2014, the coalition launched a new logo, offering a distinctive graphic identity.

The group pursues six broad goals:

1) Foster and accelerate improvement in child and family health by reducing and preventing obesity through healthy eating, increased physical activity and education.

2) Drive measurable change in childhood obesity rates in the county health rankings data.

3) Facilitate cross sector collaboration to make childhood obesity a priority and raise awareness.
4) Convene various community groups, organizations, and individuals to share data, resources and disseminate best and promising practices related to healthy lifestyle and childhood obesity prevention and intervention.

5) Identify and work to diminish factors that contribute to the increase in childhood obesity rates, including those that impact vulnerable populations.

6) Promote advocacy of best and promising practices, programs, special events, and policy efforts advancing child and family health and wellbeing at local, state, and national levels.

The coalition convenes three work groups that each year will focus on more targeted action items taking steps towards accomplishing the coalition’s broad goals. The three work groups are Policy and Advocacy, Education and Public Awareness, and Resource, Data Dissemination and Surveillance.

If you would like more information about the coalition or are interested in joining please email Josie Urban at jurban@dwcha.org.

Many cancers can be detected in their early stages through screening, making this an important secondary prevention strategy for population health, especially for cancers that cause a high burden of disease. Colorectal cancer is the second leading cause of cancer-related deaths in Michigan. Self-reported colorectal cancer screening was slightly lower in Detroit than in Wayne County (Appendix Figure 6).

Sixty-two percent of Wayne County and 51% of Detroit respondents over the age of 65 reported getting the pneumonia vaccine (Appendix Figure 7a). Across all zip codes this measure ranged from 34% in Hamtramck and parts of east Detroit to 77% in Downriver communities (Appendix Figure 7b). More respondents over the age of 65 reported getting the flu vaccine in Wayne County (53%) than in Detroit (41.7%) (Appendix Figure 8). Detroit residents were significantly more likely to say they had been tested for HIV than in Wayne County (69% versus 41%, Appendix Figure 9).
Chronic Conditions

Managing conditions at the appropriate level of care and improving the quality of community-based health services are two strategies to achieve the “triple aim” of the ACA: to increase access and improve quality while lowering costs. Non-communicable conditions for which good outpatient care can potentially prevent the need for hospitalization include diabetes and associated complications, chronic obstructive pulmonary disease (COPD), asthma, hypertension, heart failure, and angina without a cardiac procedure. The hospitalization rate for ambulatory care sensitive (ACS) conditions per 1,000 Medicare enrollees was 87 in Wayne County and 70 in Michigan, as compared to 65 nationally. Two of the most important ACS conditions, asthma and diabetes, are described in more detail below.

Asthma

According to the Centers for Disease Control and Prevention, 1 in 12 people in the U.S. have asthma, 7 million of them children. In Michigan it is the 3rd leading cause of hospitalization among children under the age of 18 (excluding newborns), accounting for 5.4% of admissions. These figures are elevated in Wayne County and Detroit. The American Lung Association reported in 2014 that Wayne County has the highest number of pediatric asthma cases in Michigan, along with the highest population of the state living in poverty.

20% of Detroit and 16% of Wayne County residents reported ever being diagnosed with asthma, while 15% and 11% said they still had asthma (Appendix Figure 11a). Current asthma prevalence estimates range from 7% in the Taylor/Wyandotte/Southgate area to 23% in northeast Detroit. Studies show that the lower the income level of a community, the higher the asthma hospitalization rates. In general, higher income groups were less likely to report asthma compared to low income groups in the MiBRFS.

Food2Families creates distribution channel for low income single mothers

During the past couple years, the Ecology Center has demonstrated how the food prescription concept can work in Wayne County, with a pilot program developed at the CHASS community health center in Southwest Detroit (http://www.ecocenter.org/healthy-food/fruit-vegetable-prescriptions).

Jasmine Page, the Health Authority’s administrative intern, improves on this concept to create a program for low income mothers in the Nurse-Family Partnership Program. She called it the “Food2Families” program. She noted in her introduction, “Many first time moms who live in the Detroit area experience food insecurity due to lack of grocery stores and compromised produce quality and variety.” A healthy maternal experience involves several components, “including a diet that is supplemented with a variety of fruits and vegetables. Several studies have shown that those who consume more fruits and vegetables experience better birth outcomes and a reduction in chronic disease such as heart disease and obesity.”

Food2Families includes several components:

- Nurse-Family Partnership nurses will introduce the program to their clients during the course of their assessment and encourage them to participate. They will monitor progress through daily diet logs/journals, and nutrition counseling held at regularly scheduled counseling sessions.
- Service locations will be placed at various points throughout the city where participants and community members can purchase from a mobile mini-market, Fresh Corner Café, Fresh Food Share, or an Eastern Market affiliate.
Community Priority Health Issues

Public Sector Consultants Inc., a Michigan consulting firm, prepared a listing of “Community Priority Health Issues” for the Michigan Health Endowment Fund Listening Tour, held throughout the state during October. As part of the Affordable Care Act, nonprofit hospitals are required to conduct a community health needs assessment every three years. The needs assessment must include input from people representing the broad interests of the community served. Hospitals must document the priority health issues identified by the community and make a written report widely available to the public. The first round of these needs assessments was completed during 2012 and 2013. Priorities identified in order of importance are shown in the following graph.

Diabetes

As shown above, diabetes has been identified as a major priority area for intervention across local community health needs assessments (CHNAs), both through community engagement strategies and data analysis. In Wayne County it is a leading cause of death, accounting for 25.1 deaths per 100,000 people in 2012. In Detroit the diabetes mortality rate is similar at 28.1, and the overall Michigan rate of 23.3.

In addition to the mortality and poorer quality of life diabetes and its complications can engender, a large proportion of health care dollars is spent on diabetes care. National studies have found that diabetes accounts for 9.4% of all emergency department (ED) visits, with more than half (57.9%) treated and released. Since the Michigan data do not show...
diabetes as a leading cause of hospital discharges at the State, County or City level, it suggests patients are more likely to be treated and released without inpatient hospital care. Furthermore, diabetes related ED visits are higher in low income communities, illustrating one of the multiple factors at play in managing this complex disease.

Increasingly, children are being affected by diabetes. In Michigan it is the 11th leading cause of hospitalization among children under the age of 18, accounting for 2.4% of admissions. This figure is similar in Wayne County and Detroit (Figure 10); although the admission rate is higher in Detroit.

The MiBRFS data show a wide range of self reported diabetes prevalence (Appendix Figure 12b). In general, Detroit residents were more likely to report diabetes compared to the rest of Wayne County (14% versus 10%). The lowest reported prevalence was 5% in Canton and Dearborn and the highest was 31% in Southwest Detroit zip codes.

**Cardiovascular Disease**

Heart disease is the number one cause of hospital admissions and mortality among adults in Michigan, Wayne County, and Detroit. The MiBRFS data show a wide range of self reported stroke and overall cardiovascular disease (Appendix Figures 13 and 16). In general, Detroit residents were more likely to report these conditions than Wayne County residents. High blood pressure risk rises with lower income and can contribute to heart disease, stroke, congestive heart failure and kidney disease. At the zip code level the highest reported prevalence of this risk factor was 60% in zip code 48227 and the lowest was 23% in Livonia and Canton.

**Other Chronic Health Conditions**

10% of Detroit residents reported having COPD, emphysema or chronic bronchitis and 8% reported ever being told they had cancer. These estimates were 9% and 12%, respectively, for Wayne County residents. Since the prevalence of COPD and cancer differ by race, the geographic difference could reflect demographic characteristics.

**Mental Health**

There are 75,000 visits to mental health clinics in Wayne County every year, representing 1/3 of all Michigan mental health visits. A similar percentage of Michigan, Wayne County and Detroit residents reported ever being told by a doctor that they had some form of depression (20-21%, Appendix Table 2). Looking at the State-County-City level masks important differences for this indicator. For example, about a quarter of women in Wayne County and Michigan overall reported depression, a significantly higher prevalence than men. In Detroit, respondents with less than a high school diploma reported significantly higher depression (30%) than those with at least a high school diploma. Furthermore, there was substantial geographic variation within Wayne County borders, ranging from 8% in Northville and Plymouth to more than 25% in various Detroit communities, Highland Park, as well as central Wayne County, Taylor and Downriver.

A significantly higher percentage of Detroit residents reported poor mental health on the MiBRFS than Wayne County residents (25% versus 19%). This ranged from 10% in Dearborn to about a quarter of respondents in Redford, southwest Wayne County, Highland Park, and central and midtown/downtown Detroit zip codes.
Health Outcomes

Self-reported Health

Self-reported health is a strong predictor of actual morbidity and mortality. Wayne County experiences a large amount of premature mortality with 10,263, years of potential life lost before age 75 per 100,000 population, higher than the state average. About 17% of Michigan and Wayne County residents reported fair or poor general health on the MIBRFS, compared to 32% of Detroit residents. Residents of Canton, Northville and Plymouth report the best health at about 10% responding fair or poor, compared to 43% of Highland Park and adjoining 48238 residents.

In Michigan about a quarter of Black, Hispanic, Native American, and Other/Multi-Racial respondents say their health is fair or poor. In Detroit, Hispanic respondents report the worst health status with 41%, followed by Blacks at 31%, White at 28% and Other race with 25%. In Wayne County 21% of Blacks and 17% of Whites and Other race did so. A significantly larger percentage of Whites reported fair or poor health status in Detroit than in Wayne County.

The links between health, education, and income are well documented. A much higher percentage of Detroit residents reported their health status as fair or poor than Wayne County for two education categories (Figure 11). People with a college degree were significantly less likely to report poor health at the State, County and City level. People making less than $20,000 reported significantly worse health in Detroit than in Wayne County (44% versus 31%).

Examining the implications of interfering with natural birth

Health begins at birth. Well, actually, it begins with prenatal care. But researchers are finding that proper humane care at the point of birth will have a significant effect on the life of the child.

The Nurse-Family Partnership program hosted the Detroit premiere of Microbirth, a documentary film produced by One World Birth to raise awareness of the importance of natural childbirth, on Sept. 20, 2014.

One World Birth (http://www.oneworldbirth.net/category/blog/), a documentary film company based in England, has produced films that deal with various aspects of birth. “Microbirth,” is the latest in a series of seven films about birth. The feature-length documentary examines birth in a new way, through a microscopic lens. The film investigates the latest scientific research and the implications of interfering with the natural process.
Quality of Life

The limited ability to perform activities such as work or self-care; or having one or more disabilities, a physical, mental or emotional problem that substantially limits life activities, leads to a poor quality of life and often entails co-morbidities. In both Detroit and Wayne County, the lowest income group (<$20,000) was most likely to report an activity limitation, supporting the notion that disability and activity limitation are closely linked to socioeconomic factors. 15% of Detroit residents and 9% of Wayne County residents reported activity limitations; reported disability prevalence was 33% and 25%, respectively (Appendix Figures 21-22b). When analyzed at the community level, disability prevalence was highest in south Detroit, zip codes 48209 and 48210 at 44%; and lowest in Canton and Grosse Pointe with about 18%.

Infant Mortality

Infant mortality, death before the age of one, is an internationally recognized indicator of socioeconomic well-being in addition to being a health indicator. Wayne County ranks worst in Michigan in terms of infant mortality, while other Southeast Michigan counties are at or below the state average. Between 2008 and 2012, Detroit’s infant mortality rate was 14.1, more than double that of the State of Michigan. Data from 2010 to 2012 show not only the overall worse mortality in Detroit but also the persistence of racial disparity.

“Babies born with a low birthweight (< 2,500 grams) have a high probability of experiencing developmental problems and short- and long-term disabilities and are at greater risk of dying within the first year of life.” This risk is increased by the presence of smoking, poor nutrition, poverty, stress, infections and violence. In Wayne County five social determinants of health were identified as having the most powerful impact on a woman’s ability to have a healthy baby: education, employment, social isolation, social perception of girls and women, and structural racism.

The purpose of the documentary is to raise public awareness of the importance of “seeding the baby’s microbiome” at birth with the mother’s own bacteria – this bacteria helps train the immune system to recognize what is “friend” and what is “foe.” The producers believe that “seeding the baby’s microbiome should be an integral part of the birthing process. Even when vaginal birth isn’t possible, immediate skin-to-skin contact and breastfeeding can still help provide bacteria crucial to the development of the baby’s immune system. In the scientists view, seeding the baby’s microbiome at birth will make a difference to the baby’s health for its entire life.

One World Birth is an advocacy film company that uses the content of its film to create conversation about the topic and a virtual community around its cause. As the producers note in their publicity materials, “What if we turned such a (mailing) list into a power base that could be directed where it is needed most? Whether that be for protest or support. If we could get one million like-minded people together in one place, wouldn’t that be powerful? This One World Birth community could be mobilized to sign online petitions, join campaigns and offer support and encouragement where it is sorely needed.”

The Detroit Wayne County Health Authority, through the Nurse-Family Partnership and other maternal health programs, will promote awareness of the issues presented in Microbirth through a variety of community channels. For more information contact Katie Moriarty, PhD, RN, director of the Detroit Nurse-Family Partnership, at kmoriarty_nfp@dwcha.org, or 313-871-3751.
Late initiation of prenatal care, lack of insurance, are among the factors contributing to inadequate prenatal care. Whatever the reason, infant mortality among Michigan mothers with inadequate prenatal care was 14.7 deaths per 1,000 live births, versus 5.4 who had adequate care. Very low birthweight Michigan babies (<1500 grams) die at 15 times the rate of low birthweight babies (<2500 grams): 247.3 versus 15.7. For babies weighing more than 2500 grams there are only 2 deaths per 1,000 births. Of the 50 largest cities in the nation in 2012, only Cleveland registered a higher proportion of low birthweight babies than Detroit (13.7% versus 13.6%). The lowest was Seattle at 6%.

“Development without displacement,” was the title of a conference held in Detroit in October and is the title of a report published by the Almeida County, California, public health department http://www.acphd.org/media/341554/development-without-displacement.pdf. It’s also a serious dilemma in Detroit, where a sudden burst in redevelopment, seemingly anticipating the city’s emergence from bankruptcy, is threatening the homes of thousands of low income senior citizens living in apartments contracting with the U.S. Housing and Urban Development Department. With those contracts coming up for renewal, apartment owners are realizing the value of their properties and increasing the rent to meet market demand.

Senior Housing Preservation—Detroit, a coalition of health and human service agencies, was organized the Luella Hannon Memorial Foundation to provide crisis response to seniors being evicted, develop preservation strategies, and articulate a vision for incorporating age and income diversity in the emerging Detroit.

From a population health perspective, forced relocation brings mental and physical trauma, with seniors relocating to areas that lack resources and friendly surroundings. The Health Authority has been an active proponent of this coalition.

Low income seniors face displacement as urban Detroit gentrifies
Conclusions and Recommendations

The America's Health Rankings program noted improvement in several areas of health status in the past 25 years, citing cancer mortality, air quality improvement, and declines in preterm births and smoking as a few examples. Furthermore, the correlation between social determinants and health is increasingly well documented and accepted. However, health disparities are persistent and will require changes in policy, in health systems, and in the community.

In general, City of Detroit adults reported a higher prevalence of primary risk factors for chronic conditions including asthma, diabetes, and high blood pressure. Quality of life measures were significantly higher across the board. Detroit adult residents also fared poorly in immunizations compared to Wayne County, which on most measures was statistically similar to Michigan. However, when analyzed by zip code and demographics, there was great variation across the City and County.

- The coincidence of multiple poor indicators suggests that population health resources be mapped onto communities that report poorly on multiple indicators. For example, diabetes prevalence was most highly reported in southwest Detroit, a community that also reportedly experienced high rates of obesity, asthma and disability.

- Communities with multiple positive indicators should also be further examined. Certain measures including reported poor mental health, diabetes, and disability tended to be lower in northwestern Wayne County and parts of Dearborn.

- The mental health indicators varied widely, with depression prevalence appearing to be similar at the City, County and State levels; but notable differences were present across sexes, education levels and zip codes. The distribution of mental health resources throughout the region needs to be more closely examined, so the formation of the Detroit Wayne Mental Health Authority is timely.

- Primary risk factors affect communities as diverse as Redford, southern Wayne County, Hamtramck and north and central Detroit. The same can be said for secondary health risk such as a low prevalence of cancer screenings or routine checkups, which may be a sign of good health or poor health. Studies should identify correlations, if any, among these factors, health outcomes and social determinants.

- As expected, outcomes including general health, asthma and birth outcomes varied by race, income and education at the State, County and City level. These disparities will be further investigated in a subsequent report.

The resources spent on health care need to translate into timely policies and programs that will further move the needle on persistent population health disparities. This is true at all levels of aggregation—State, County and City. Understanding and addressing community level health concerns—to enable innovative models and interventions that can reduce costs and improve health outcomes—requires community level data analytics. Health outcomes should be further analyzed alongside key social determinants to identify consistent and stable correlations and patterns of inequity across communities in Wayne County and Detroit. More initiatives are needed that analyze observational data disaggregated by socio-economic and demographic characteristics within zip codes, census tracts, or by suitably defined communities.

In the coming year, the Population Health Council will focus its efforts on persistent and pervasive health inequities. These include more targeted research, continued development of best practice interventions, and effective responses to regulations, policies, and practices that negatively affect the health of Wayne County citizens.
References

1 National KIDS COUNT, a project of the Annie E. Casey Foundation.
6 U.S. Census Bureau, Population Division.
7 Core Health Indicators Report. Community Commons Community Health Needs Assessment.
8 KIDS COUNT Michigan Data Book 2013.
9 Sustainable Communities Index. http://www.sustainablecommunitiesindex.org/webpages/view/55
10 U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy (CHAS).
11 America’s Health Rankings 2014.
13 Fussman C.
14 Fussman C.
18 The Sierra Club http://www.sierraclub.org/
20 Michigan Department of Community Health.
23 Michigan Department of Community Health.
24 Fussman C. 2014.
26 Dr. Mouhanad Hammami, Wayne County Department of Health and Human Services.
27 National Center for Health Statistics/County Health Rankings.
28 2011-2013 Michigan BRFS Results by Expanded Race/Ethnicity.
30 Michigan Department of Community Health.
31 National KIDS COUNT, a project of the Annie E. Casey Foundation.
33 KIDS COUNT in Michigan Data Profile 2013.