2019 COMMUNITY HEALTH NEEDS ASSESSMENT

IMPLEMENTATION STRATEGY

Building Healthier Lives and Communities

Beaumont, Royal Oak

ROYAL OAK

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Executive summary

Beaumont Health understands the importance of serving the health needs of its communities. To do that successfully, we must first take a comprehensive look at the issues our patients, their families and neighbors face when making healthy life choices and health care decisions.

Beginning in January 2019, Beaumont began the process of assessing the health needs of the communities served by the eight Beaumont hospital facilities for an updated community health needs assessment. IBM Watson Health was engaged to help collect and analyze the data for this process and to compile a final report made publicly available by Tuesday, Dec. 31, 2019.

The community served by Beaumont includes Macomb, Oakland and Wayne counties. These counties comprise the majority of the geography covered by the combined primary service areas of each of the eight hospitals and contains 3.9 million people. Each hospital's primary service area is defined by the contiguous ZIP codes where 80% of the hospital's admitted patients live.

IBM Watson Health performed a quantitative and qualitative assessment. More than 200 public health indicators were examined, and a benchmark analysis of the data was conducted. The analysis compared community values to the overall state of Michigan and United States values. For a qualitative analysis and to get input from the community, focus groups, key informant interviews and a survey were conducted. The focus groups solicited feedback from leaders and representatives who served the community and had insight into community needs. The interviews were conducted with public health and community leaders along with key Beaumont leaders to gain their perspective on the community needs. Participants in these sessions included state, local or regional governmental public health departments (or an equivalent department or agency) with knowledge, information or expertise relevant to the health needs of the community, as well as individuals or organizations serving and/or representing the interests of medically underserved, low-income and minority populations in the community. Additionally, a community survey was fielded to solicit input directly from community members regarding their perception of community health needs.

Needs were first identified when an indicator for a hospital community was worse than the state benchmark. A need differential analysis conducted on all the low performing indicators determined the relative severity by using the percent difference from benchmark. The outcome of this quantitative analysis aligned with the qualitative findings of the community input sessions to create a list of health needs in the community. Each health need received assignment into one of four quadrants in a health needs matrix. The matrix shows the convergence of needs identified in the qualitative data (interview and focus group feedback) and quantitative data (health indicators) and identifies the top health needs for each community.

The results were aggregated across the eight hospital communities to identify the predominant health needs for the overall Beaumont community. Needs were identified for the overall Beaumont community if they were common across at least five of the eight Beaumont hospital communities.

In June 2019, the Beaumont CHNA Prioritization Workgroup met to review the health needs matrix and prioritize significant community health needs for Beaumont. The meeting was moderated by IBM Watson Health and included an overview of the CHNA process for the Beaumont community, the methodology for determining the top health needs and the selection and prioritization of significant health needs for the community Beaumont serves.

The group reviewed the Beaumont Health needs matrix and identified the significant community health needs to prioritize. They next used criteria selected by the Beaumont CHNA Steering Committee to score the community's significant health needs. The list of significant health needs was then prioritized based on the overall scores. The session participants subsequently reviewed the prioritized health needs for each community and chose the four community health needs with the highest prioritization scores as those to be addressed by Beaumont through subsequent implementation strategies. The health needs to be addressed by Beaumont include:

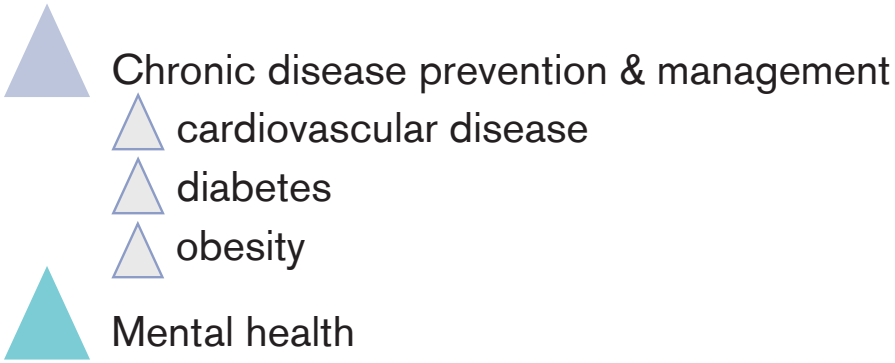
- Chronic disease prevention and management (cardiovascular disease, diabetes, obesity)
- Mental health

A description of these needs is included in the body of the full report. The hospital facilities will each develop implementation strategies with specific initiatives to address the chosen health needs, to be completed and adopted by Beaumont by April 15, 2020.

The Community Health Needs Assessment for Beaumont has been presented and approved by the Beaumont Health board of directors, and the full assessment is available to the public at no cost for download and comment on our website at beaumont.org/chna.

This assessment and corresponding implementation strategies are intended to meet the requirements for community benefit planning and reporting as set forth in federal law, including but not limited to the Internal Revenue Code Section 501(r).

The health needs to be addressed by Beaumont include:



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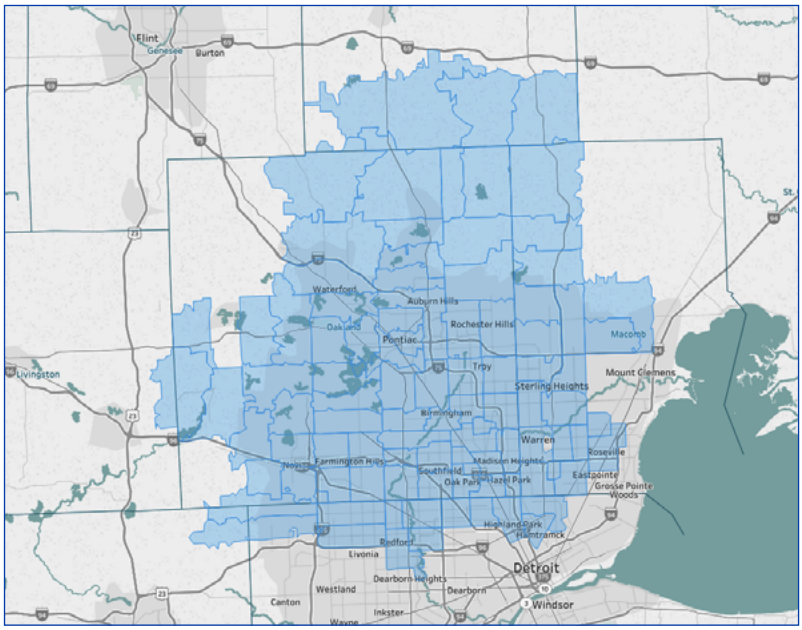
Beaumont, Royal Oak

Beaumont, Royal Oak opened on Jan. 24, 1955. Today it is a major academic and referral center with Level I adult trauma and Level II pediatric trauma designations.

Community served

The Beaumont, Royal Oak community is defined as the contiguous ZIP codes which comprise 80% of inpatient discharges. Below is a map that highlights the community served (in blue) as a portion of the overall Beaumont community.

Beaumont, Royal Oak: Map of community served

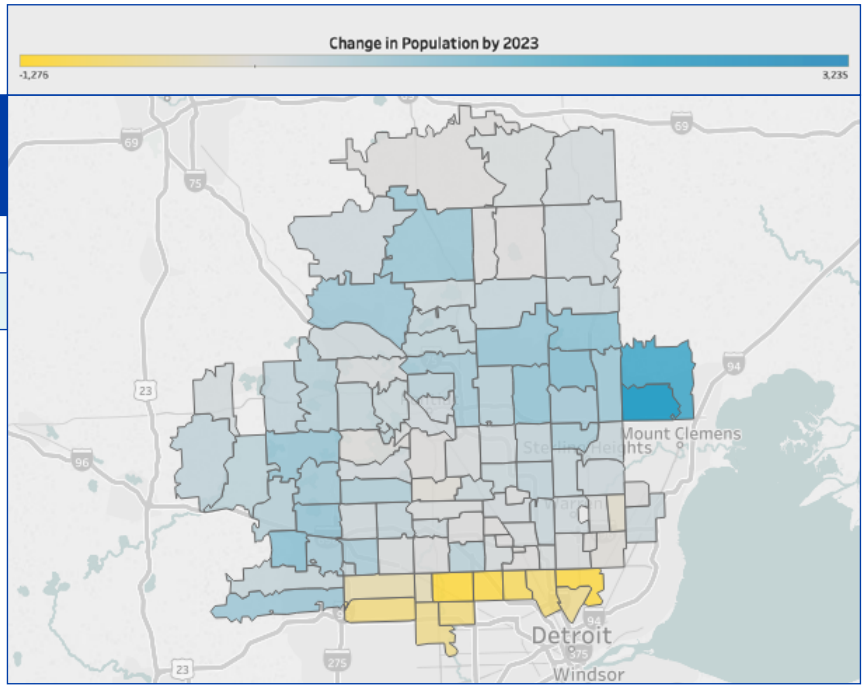


Source: Beaumont Health, 2019

Demographic and socioeconomic summary

The population of the community served is expected to increase 1.2% by 2023, an increase of more than 25,000 people. The community's population increase is slightly higher than Michigan's projected growth rate (0.6%) and is lower than the national projected growth rate (3.5%). Within the community, Macomb is expected to experience the most growth in five years:

2018 - 2023 Total population projected change by ZIP code



Zip Codes	Growth in five years (# of people)
48044 Macomb	**3,235**
48042 Macomb	**2,419**

Source:
IBM Watson Health / Claritas, 2018

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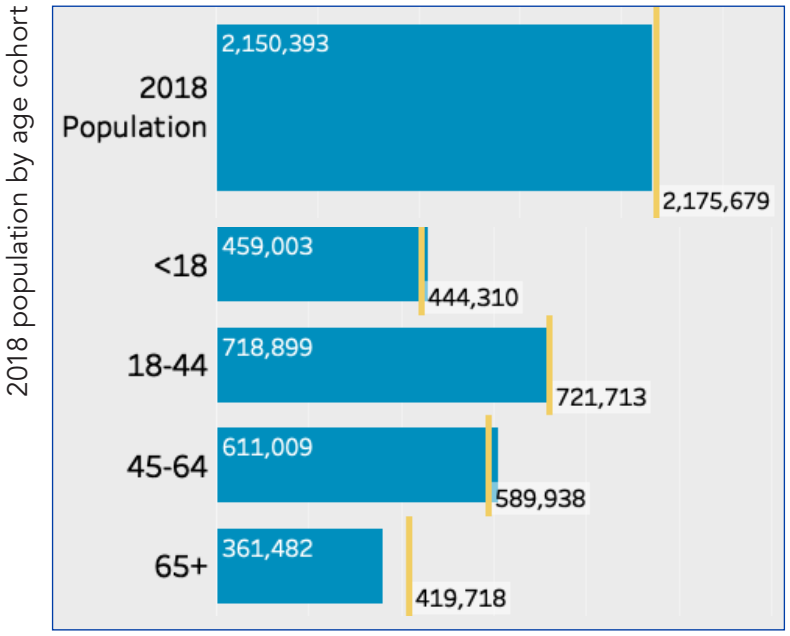
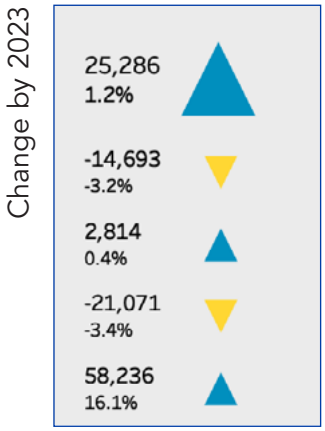
The community's population skews younger with 33.4% of the population ages 18-44 and 21.3% under age 18. The largest cohort (18-44) is expected to increase by just over 2,800 (0.4%) people by 2023. The age 65-plus cohort, currently the smallest cohort (16.8% of the population), is expected to experience the greatest growth (16.1%) over the next five years, adding 58,236 seniors to the community. Growth in the senior population will likely contribute to increased utilization of services as the population continues to age.



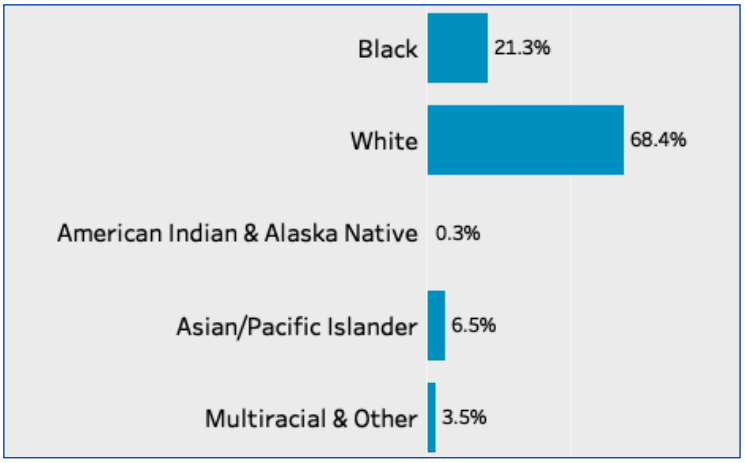


Population distribution by age

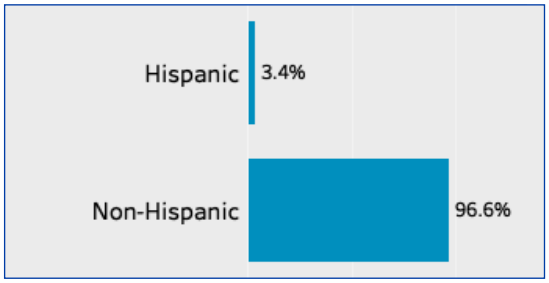
Source:
IBM Watson Health / Claritas, 2018

Population statistics are analyzed by race and by Hispanic ethnicity. The community is predominately white (68.4%) and black (21.3%). The white population is the only racial group projected to decline in the next five years: -1.5% or 21,000 people. The Asian/Pacific Islander racial group is projected to add the newest people to the community (23,224) by 2023, a 16.7% growth rate. In terms of ethnicity, the community is primarily non-Hispanic (96.6%), but the Hispanic population is expected to have a faster growth rate over the next five years (12.8% Hispanic vs. 0.8% non-Hispanic).

2018 Population by race

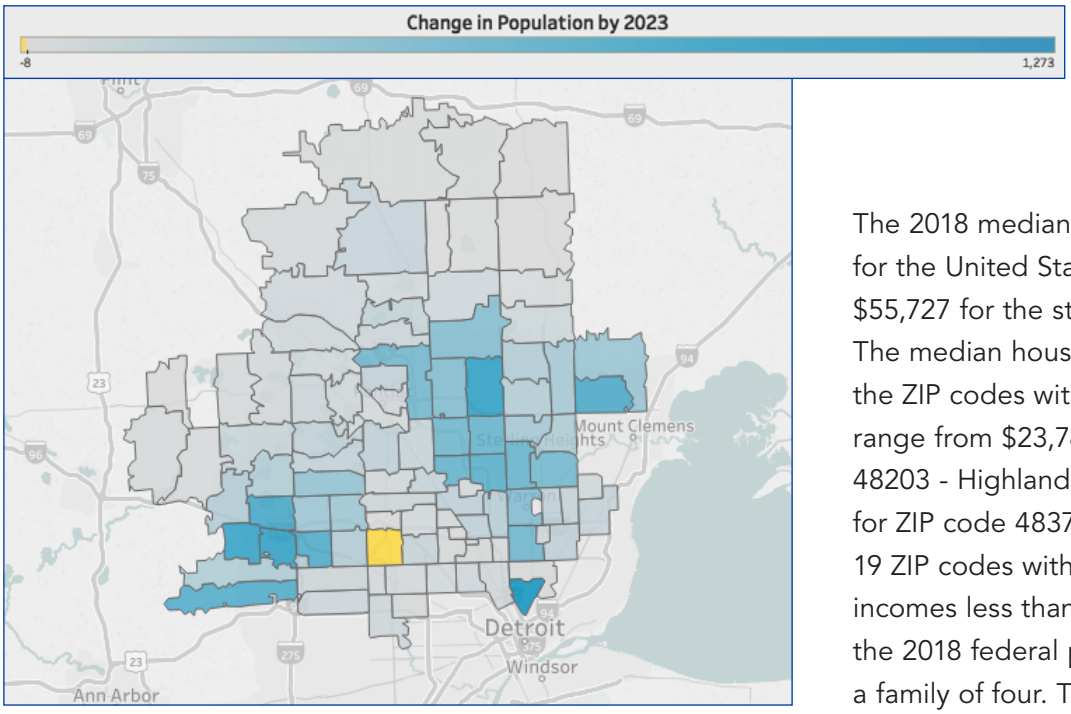


2018 Population by ethnicity



Source: IBM Watson Health / Claritas, 2018

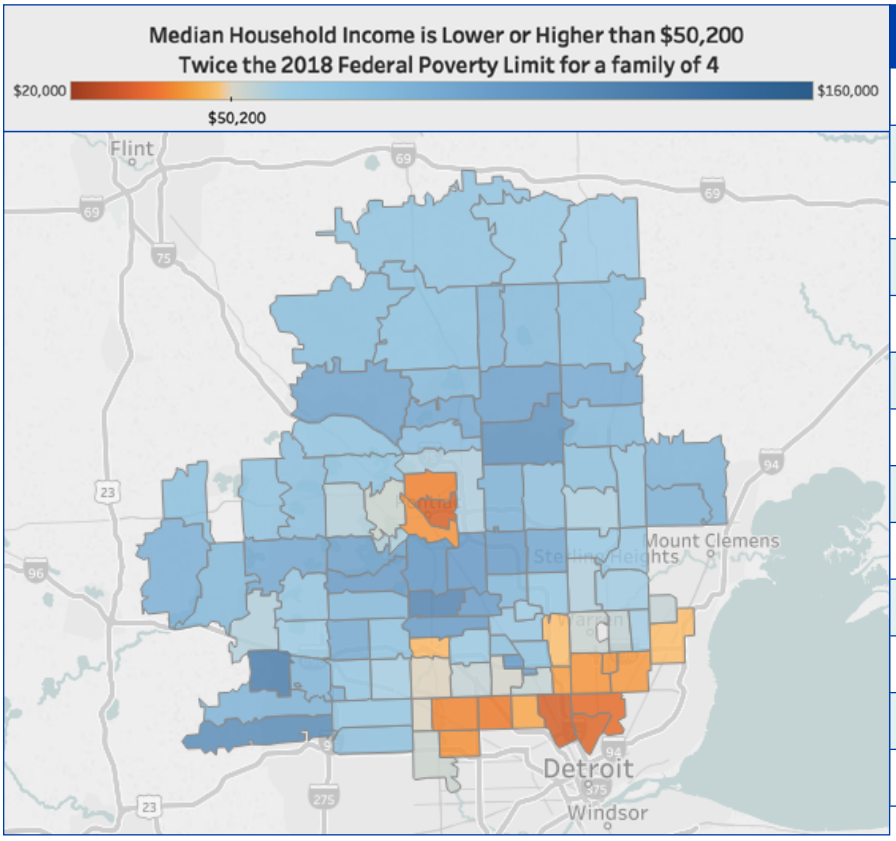
2018 - 2023 Asian/Pacific Islander race population projected change by ZIP code



Source: IBM Watson Health / Claritas, 2018

The 2018 median household income for the United States is $62,175 and $55,727 for the state of Michigan. The median household income for the ZIP codes within this community range from $23,782 for ZIP code 48203 - Highland Park to $161,301 for ZIP code 48374 - Novi. There are 19 ZIP codes with median household incomes less than $50,200, twice the 2018 federal poverty limit for a family of four. Thirteen ZIP codes have median household incomes less than $40,000:

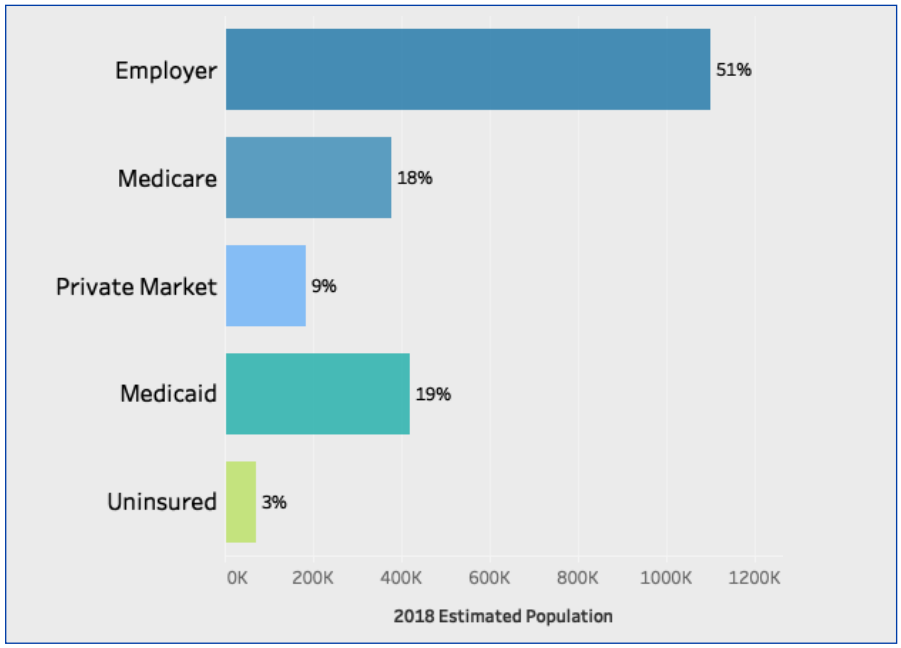
2018 Median household income by ZIP code



Zip Codes	Income
48203 Highland Park	**$23,782**
48342 Pontiac	**$24,311**
48212 Hamtramck	**$26,312**
48234 Detroit	**$28,249**
48235 Detroit	**$31,449**
48340 Pontiac	**$33,322**
48219 Detroit	**$34,018**
48223 Detroit	**$35,961**
48015 Center Line	**$36,752**
48341 Pontiac	**$36,829**
48091 Warren	**$36,939**
48089 Warren	**$38,085**
48030 Hazel Park	**$38,646**

Source: IBM Watson Health / Claritas, 2018

2018 Estimated distribution of covered lives by insurance category



Source: IBM Watson Health / Claritas, 2018

A majority of the population (51%) are insured through employer sponsored health coverage, higher than Michigan (47%) and the United States (46%). Of the remaining population, 19% are covered by Medicaid, 18% by Medicare and 9% by private market insurance (the purchasers of coverage directly or through the health insurance marketplace) and 3% are uninsured. Royal Oak's uninsured rate (3.0%) was lower than Michigan's (3.8%) and much lower than the national rate of 9.4%.

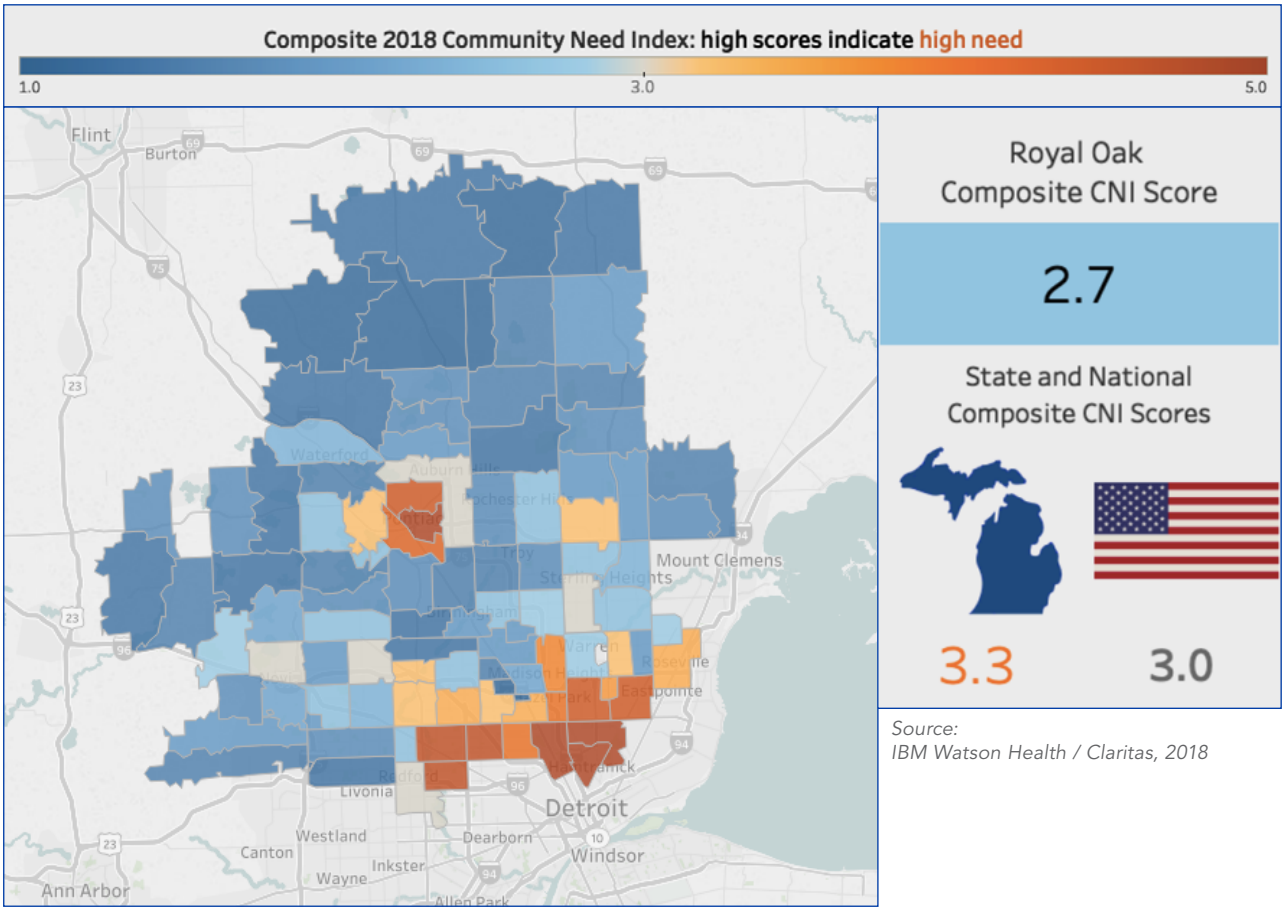
Beaumont, Royal Oak

The IBM Watson Health community need index is a statistical approach to identifying areas within a community where health disparities may exist. The CNI takes into account vital socioeconomic factors (income, cultural, education, insurance and housing) about a community to generate a CNI score for every populated ZIP code in the United States. The CNI strongly links to variations in community health care needs and is an indicator of a community's demand for various health care services. The CNI score by ZIP code identifies specific areas within a community where health care needs may be greater.

Overall, the composite CNI score for the community served is 2.7, lower than the CNI national benchmark score of 3.0 and state average of 3.3, potentially indicating fewer health care needs in this community.

In the Royal Oak community, about 70% of ZIP codes have a composite CNI score of less than 3.0. Despite indicating overall lower need, the community contained pockets of high need. Seven ZIP codes (48203 - Highland Park, 48212 - Hamtramck, 48219 - Detroit, 48223 - Detroit, 48234 - Detroit, 48235 - Detroit and 48342 - Pontiac) have composite CNI scores greater than 4.5, pointing to potentially more significant health needs among those populations. These communities have scores of 5.0 in three of the five barriers scores that comprise the CNI composite score: culture, housing and income.

2018 Community need index by ZIP code



Source:
IBM Watson Health / Claritas, 2018

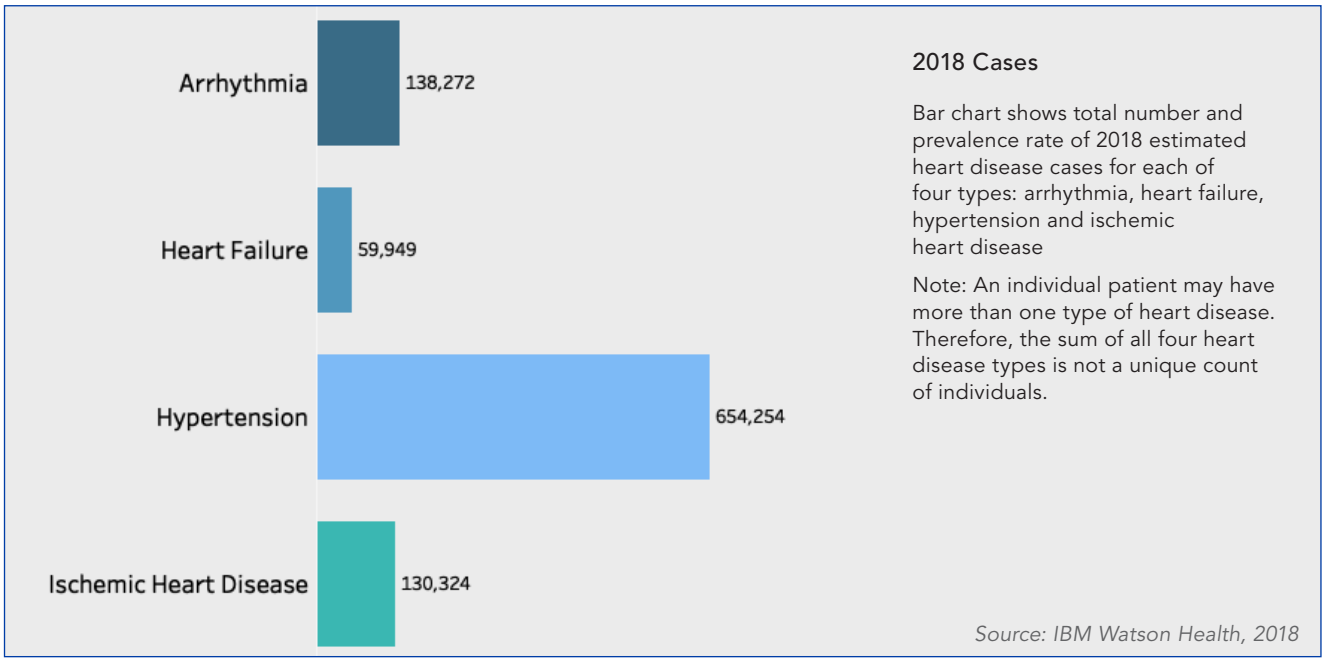
ZIP Map where color shows the Community Need Index on a scale of 0 to 5. Orange color indicates high need areas (CNI = 4 or 5); blue color indicates low need (CNI = 1 or 2). Gray colors have needs at the national average (CNI = 3).

IBM Watson Health community data

IBM Watson Health supplemented the publicly available data and population statistics with estimates of localized disease prevalence of heart disease and cancer as well as Emergency Department visit estimates.

IBM Watson Health heart disease estimates identified hypertension as the most prevalent heart disease diagnoses; there are more than 650,000 estimated cases in the community overall. The 48044 ZIP code of Macomb has the most estimated cases of each heart disease type due primarily to population size. Bloomfield Hills (ZIP codes 48304 and 48302) has the highest estimated prevalence rates for arrhythmia (96 cases and 91 cases per 1,000 population), heart failure (40 cases and 38 cases per 1,000 population), hypertension (378 cases and 365 cases per 1,000 population) and ischemic heart disease (96 cases and 91 cases per 1,000 population).

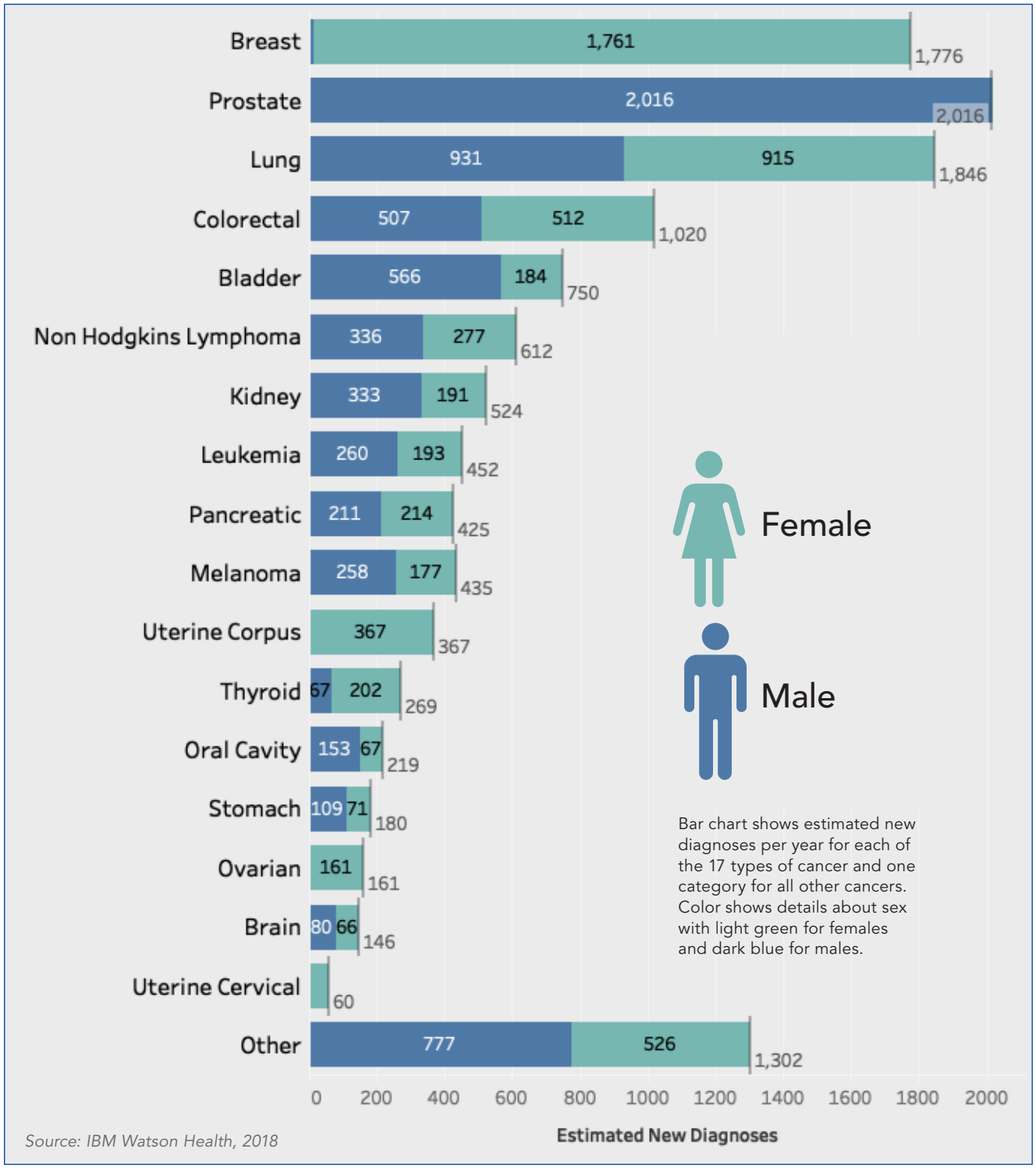
2018 Estimated heart disease cases



Beaumont, Royal Oak

For this community, IBM Watson Health's 2018 cancer estimates revealed the cancers estimated to have the greatest number of new cases in 2018 are prostate, breast and lung cancers. The cancers projected to have the greatest rate of growth in the next five years are pancreatic, bladder, melanoma and thyroid, based on both population changes and disease rates.

2018 Estimated new cancer cases



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Estimated cancer cases and projected five-year change by type

Cancer type	2018 Estimated new cases	2023 Estimated new cases	5-year growth (%)
Bladder	750	835	11.36%
Brain	146	153	4.52%
Breast	1,776	1,885	6.13%
Colorectal	1,020	962	-5.66%
Kidney	524	572	9.28%
Leukemia	452	492	8.73%
Lung	1,846	1,973	6.86%
Melanoma	435	482	10.89%
Non-Hodgkin's lymphoma	612	666	8.78%
Oral cavity	219	237	8.29%
Ovarian	161	169	4.73%
Pancreatic	425	476	11.84%
Prostate	2,016	2,024	0.37%
Stomach	180	191	5.98%
Thyroid	269	296	10.21%
Uterine - cervical	60	58	-2.46%
Uterine - corpus	367	396	8.03%
Other	1,302	1,421	9.15%
Grand total	**12,561**	**13,289**	**5.79%**

Note: Case numbers are rounded to the nearest integer, which may mask minor differences. *Source: IBM Watson Health, 2018*

Beaumont, Royal Oak

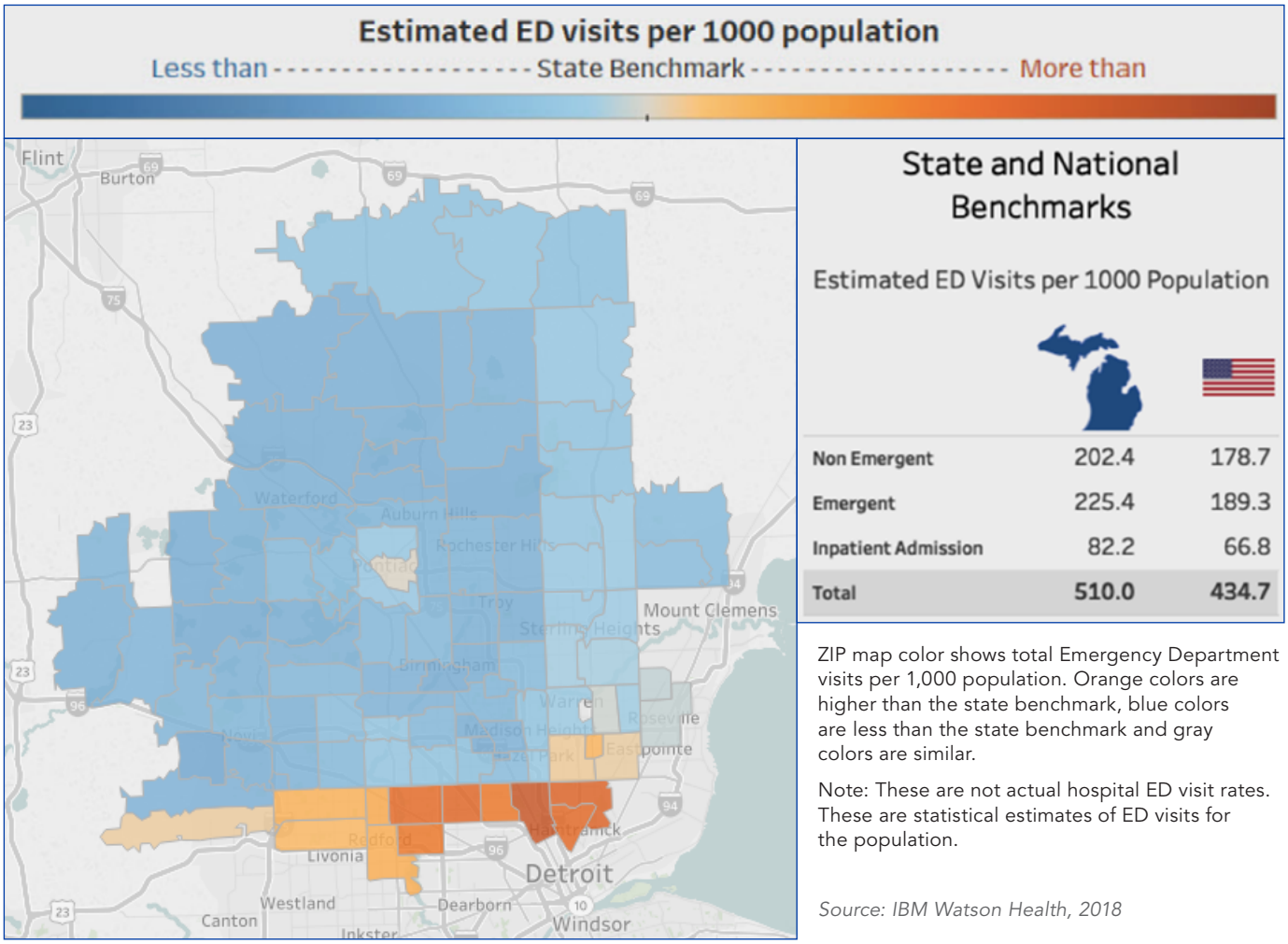
Based on population characteristics and regional utilization rates, IBM Watson Health projected all Emergency Department visits in this community to increase by 1.8% over the next five years.

Estimated ED use rates for Michigan and the U.S. are 510 visits and 435 visits per 1,000 respectively. The highest ED use rates were in ZIP codes 48203 - Highland Park (874.9 per 1,000), 48234 - Detroit (809.5 per 1,000) and 48235 - Detroit (794.0 per 1,000). The ED use rate in Highland Park is more than twice the U.S. benchmark and 72% higher than the Michigan state benchmark.

ED visits consisted of three main types: those resulting in an inpatient admission, emergent ED visits treated and released and non-emergent ED visits that were lower acuity. Non-emergent ED visits present to the ED but can potentially be treated in more appropriate and less intensive outpatient settings.

Non-emergent outpatient ED visits could be an indication of systematic issues within the community regarding access to primary care, managing chronic conditions or other access to care issues such as ability to pay. IBM Watson Health estimated non-emergent ED visits to decrease by an average of 2.0% over the next five years in this community.

Total estimated 2018 Emergency Department visit rate



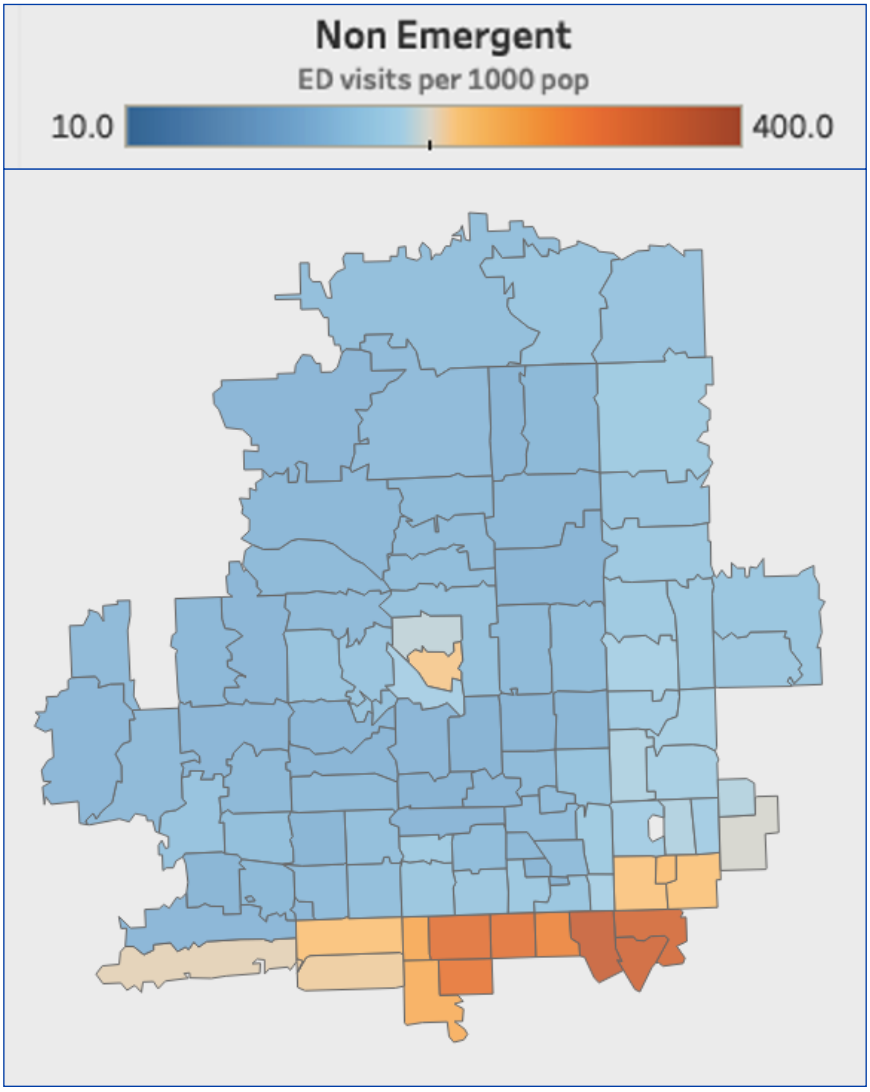
Non Emergent	202.4	178.7
Emergent	225.4	189.3
Inpatient Admission	82.2	66.8
Total	**510.0**	**434.7**

ZIP map color shows total Emergency Department visits per 1,000 population. Orange colors are higher than the state benchmark, blue colors are less than the state benchmark and gray colors are similar.

Note: These are not actual hospital ED visit rates. These are statistical estimates of ED visits for the population.

Source: IBM Watson Health, 2018

Non-emergent estimated 2018 Emergency Department visits by ZIP code



ZIP map color shows total Emergency Department visits per 1,000 population by non-emergent status. Orange colors are higher than the state benchmark, blue colors are less than the state benchmark and gray colors are similar. Color range is set for the entire study region. ED visits are defined by the presence of specific CPT® codes in claims.

Non-emergency visits to the ED do not necessarily require treatment in a hospital Emergency Department and can potentially be treated in a fast-track ED, an urgent care treatment center, or a clinical or physician's private office.

Source:
IBM Watson Health, 2018

Note: These are not actual hospital ED visit rates.
These are statistical estimates of ED visits for the population.

2019 CHNA implementation strategy

The implementation strategy for the chosen health needs of 1) chronic disease prevention and management (cardiovascular disease, diabetes, obesity) and 2) mental health are outlined in the following pages.

Over the next three years, each Beaumont Health hospital will execute its implementation strategies which will be evaluated and updated on an annual basis.

Priority #1

Chronic disease prevention and management (cardiovascular disease, diabetes, obesity)

Goal #1: Decrease rates of chronic disease in children and adults by promoting healthy eating and active living behaviors.	
Objective #1: Provide education and services that support healthy eating, active living and maintaining a healthy weight.	
OUTCOME MEASURES	• Decrease percent of adult obesity. • Decrease percent of students who are obese.
STRATEGIES AND TACTICS	• Implement Cooking Matters program, cooking classes for children, grocery store tours and food demonstrations to equip families with knowledge and skills to prepare healthy meals. • Explore designation of a multi-sector Healthy Community coalition. • Engage stakeholders and partners to identify opportunities to collaborate on policy, systems, and environmental change for health improvement planning opportunities. • Explore strategies and partner collaborations to increase access to fresh fruits and vegetables and reducing food insecurity. • Provide education on chronic disease prevention and management through community events and Beaumont Speakers Bureau.
COMMITTED RESOURCES	Beaumont, Royal Oak will commit both financial and in-kind resources, including staff time, charitable contributions and employee volunteerism.
PARTNERS	• Gleaners Community Food Bank of SE Michigan • City and school districts • Local municipalities • Local school systems • Oakland County Health Division
EVALUATION	• Pre/post participant surveys • Partnership agreements
Objective #2: Increase opportunities for physical activity.	
OUTCOME MEASURES	• Increase percent of physically active adults. • Increase education and opportunities for physical education.
STRATEGIES AND TACTICS	• Implement community wide walking programs such as Wellness Walk & Talk, Neighborhood Walking Groups, mall walking and community walk events to increase physical activity and social interaction across the community. • Provide custom and adaptive bikes for kids with special needs. • Provide training for physical education teachers to implement the Coordinated Approach to Child Health (CATCH) physical education nutrition and physical activity program. • Implement the program A Matter of Balance: Managing Concerns About Falls to support physical activity among older adults.
COMMITTED RESOURCES	Beaumont, Royal Oak will commit both financial and in-kind resources, including staff time, charitable contributions and employee volunteerism.
PARTNERS	• Oak Park and Royal Oak Parks and Recreation departments • Oakland Mall • Southfield School District • Oak Park School District • Ferndale School District • South Lyon School District
EVALUATION	• Physical Education teacher evaluation surveys • Walking log metrics • Up and Go Test • Pre/post participant surveys • Participation rates

Goal #2: Decrease cardiovascular disease risk factors and prevent death from sudden cardiac arrest.	
Objective #1: Provide education programs and services.	
OUTCOME MEASURES	• Decrease percent of adult hypertension. • Decrease in cardiovascular disease risk factors. • Increase knowledge and awareness of self-monitoring practices.
STRATEGIES AND TACTICS	• Implement Blood Pressure Self-Monitoring Program in churches and community organizations. • Provide support programs including nutrition heart healthy classes, education on behavior change, Beaumont Quit Smoking Program and Guiding Hearts Support Group for prevention and management of cardiac conditions. • Implement and promote the availability of the Women Exercising to Live Longer (WELL) Program to increase physical activity and reduce cardiovascular disease risk factors. • Mentor and assist schools in attaining the state Heart Safe School designation and provide AED equipment as needed.
COMMITTED RESOURCES	Beaumont, Royal Oak will commit both financial and in-kind resources, including staff time, charitable contributions and employee volunteerism.
PARTNERS	• Local churches • Schools • Community agencies
EVALUATION	• Attainment of Heart Safe School designation • Pre/post participant surveys • Participation rates
Objective #2: Provide early detection screenings.	
OUTCOME MEASURES	• Decrease percent of adult hypertension. • Decrease in cardiovascular disease risk factors. • Decrease deaths from sudden cardiac arrest.
STRATEGIES AND TACTICS	• Provide blood pressure, cholesterol, glucose, BMI, heart and vascular screening across the community. • Implement the Student Heart Check Program to detect abnormal heart structure or abnormal rhythms and explore development of student support group for those currently diagnosed or affected by abnormal diagnoses.
COMMITTED RESOURCES	Beaumont, Royal Oak will commit both financial and in-kind resources, including staff time, charitable contributions and employee volunteerism.
PARTNERS	• Local churches • Schools • Community agencies
EVALUATION	• Pre/post participant surveys • Screening results • Participation rates

*Please see next page for Priority #1, **Goal #3:** Decrease rate of new diabetes cases and of diabetes complications.*

Priority #1 *cont.*

Chronic disease prevention and management (cardiovascular disease, diabetes, obesity)

Goal #3: Decrease rate of new diabetes cases and of diabetes complications.	
Objective #1: Provide early detection screenings, diabetes prevention programs and diabetes education services.	
OUTCOME MEASURES	• Decrease new incidences of diabetes.
STRATEGIES AND TACTICS	• Provide the Diabetes PATH chronic disease self-management program. Explore implementation of online version. • Provide support groups for those with diabetes and their caregivers. • Implement the National Diabetes Prevention Program for adults with pre-diabetes or at high risk for diabetes.
COMMITTED RESOURCES	Beaumont, Royal Oak will commit both financial and in-kind resources, including staff time, charitable contributions and employee volunteerism.
PARTNERS	• National Kidney Foundation of Michigan • Area Agency on Aging 1-B • Local churches • Libraries • Senior centers • Community organizations
EVALUATION	• Participation rates/volumes • Outcome measures • Increase in physical activity • Screening results • Average weight loss • Pre/post participant surveys • Participation rates

Priority #2

Mental health

Goal #1: Decrease rate of mental health and substance use disorders.	
Objective #1: Improve access and coordination of services.	
OUTCOME MEASURES	• Increase referral linkages for mental health and opioid use disorders. • Increase referral linkages for mental health and substance use disorders.
STRATEGIES AND TACTICS	• Support partnerships to improve integration of health care and community-based mental health services. • Improve access and coordination of services for substance abuse disorder through creating multidisciplinary care teams using community peer recovery coaches and linking individuals to community resources.
COMMITTED RESOURCES	Beaumont, Royal Oak will commit both financial and in-kind resources, including staff time, charitable contributions and employee volunteerism.
PARTNERS	• CARE of Southeast Michigan • Community mental health agencies • Universal Health Services
EVALUATION	• Partnership agreements • Patients connected to community resources
Objective #2: Provide education program and services..	
OUTCOME MEASURES	• Increase knowledge and awareness of mental health.
STRATEGIES AND TACTICS	• Implement mindfulness classes to address anxiety, depression, stress and chronic pain. • Provide education on mental health through community events and Beaumont Speakers Bureau. • Implement No Bullying Live Empowered (NoBLE) program to support bullied children and families
COMMITTED RESOURCES	Beaumont, Royal Oak will commit both financial and in-kind resources, including staff time, charitable contributions and employee volunteerism.
PARTNERS	• Common Ground • Local schools
EVALUATION	• Perceived Stress Scale • Self-Compassion Scale • Qualitative measures • Participant rates • Participation surveys

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