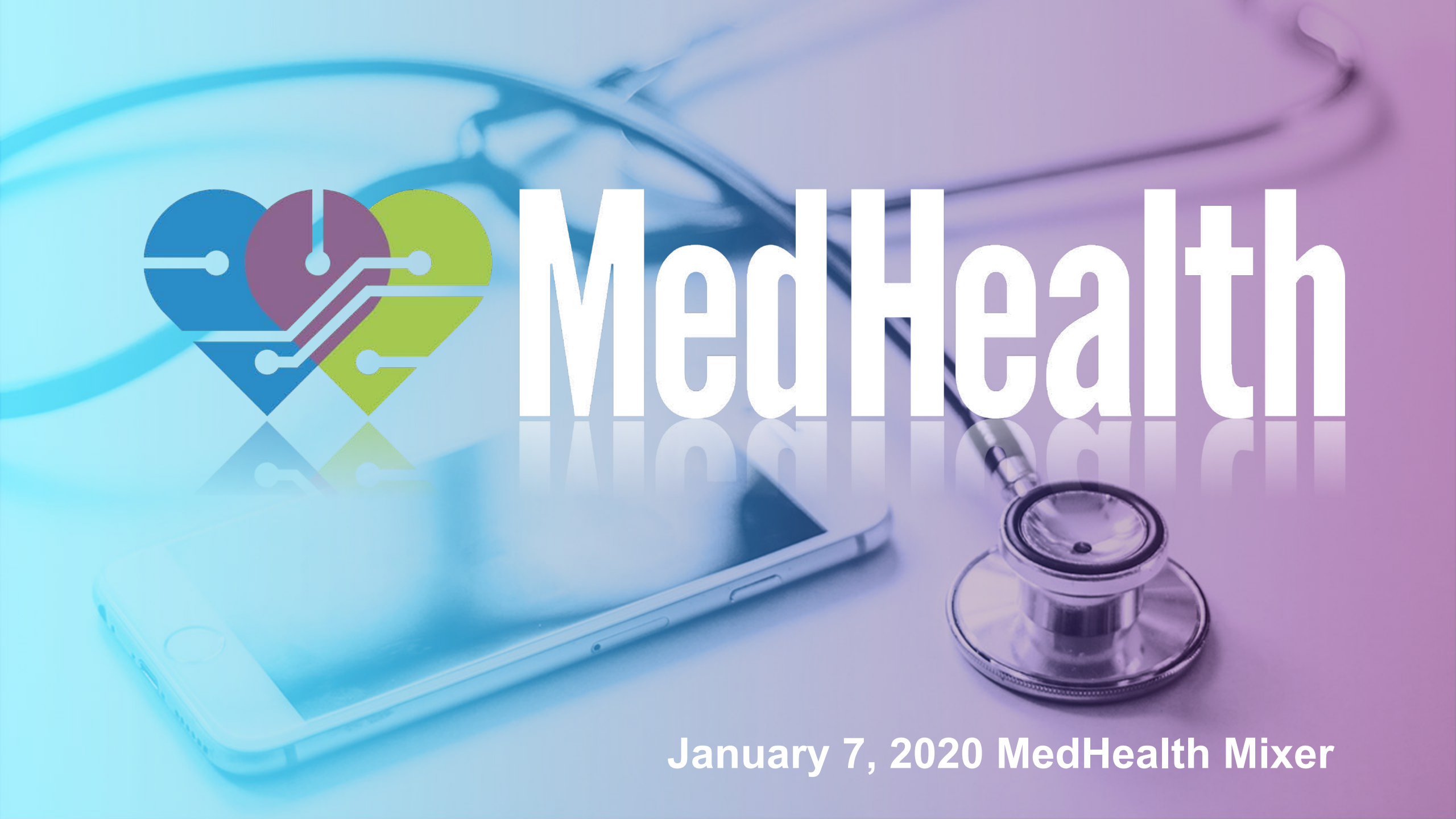

MedHealth
January 7, 2020 MedHealth Mixer

Welcome

Paul Riser, TechTown

MedHealth

MedHealthInnovation.org

Agenda

- Keynote Speaker
- MedHealth and the 2020 Summit
- Becoming Involved in the 2020 Summit
- MedHealth Summit Success Story
- Networking

MedHealth

Improving Population Health Outcomes through Innovation

Dr. Phillip D. Levy, Wayne State University

MedHealth

MedHealthInnovation.org

Improving Population Health Outcomes Through Innovation

Phillip D. Levy, MD, MPH, FACEP, FAHA, FACC

Professor and Associate Chair for Research

Department of Emergency Medicine

Assistant Vice President for Translational Science and Clinical Research Innovation

Wayne State University

Chief Innovation Officer

Wayne State University Physician Group

Disclosures

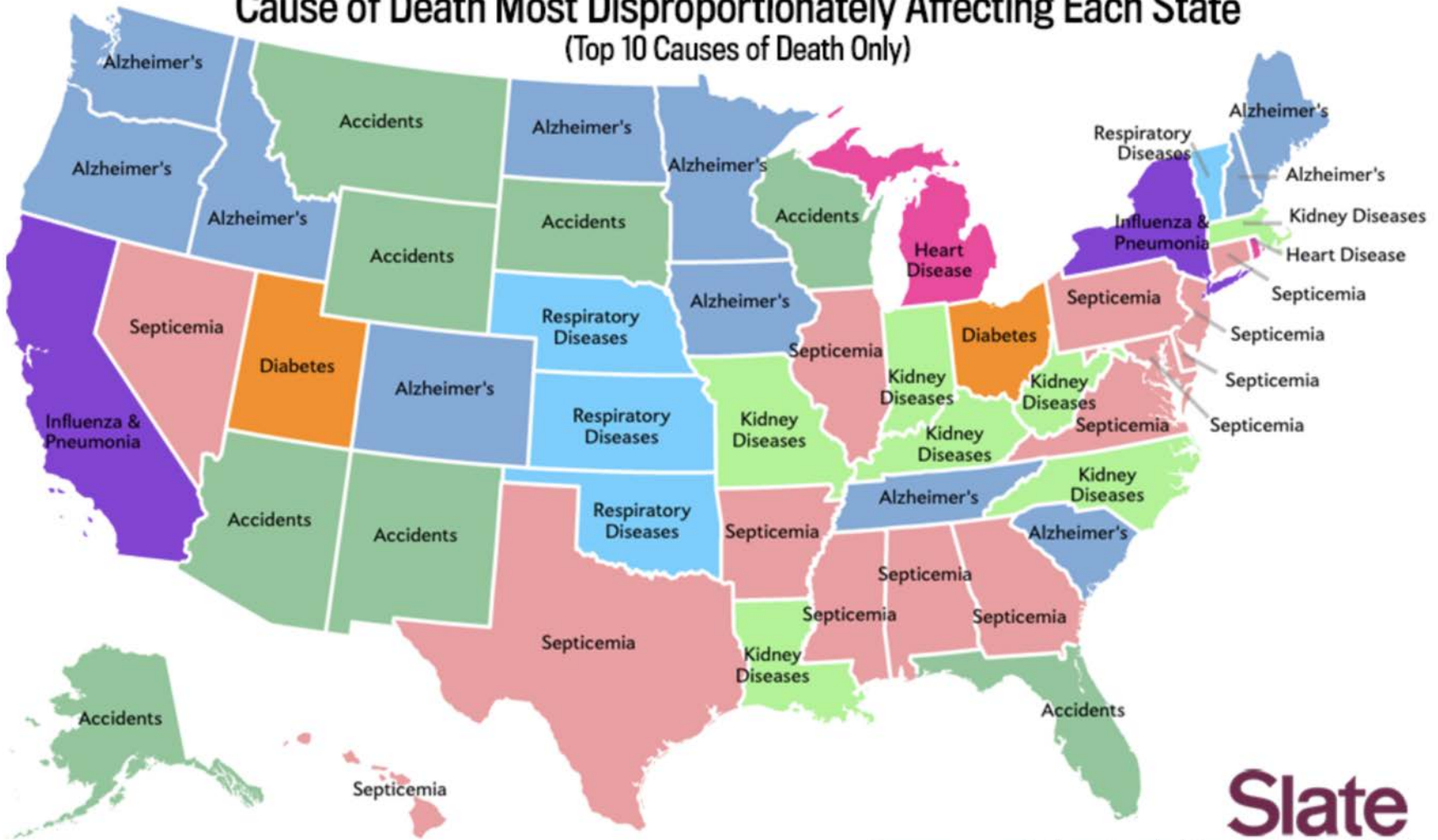
- Consultant: BMS, Roche Diagnostics, Ortho Clinical Diagnostics, Baim Institute
- Research Contract: Novartis Pharmaceuticals, Edwards Lifescience, BMS, Amgen
- Grant Support: NHLBI (R01 HL146059 and R01 HL127215), NIH Admin (U24 NS100680), MDHHS (CDC 1815, 1817, and WISE WOMAN); MHEF (R-1907-144972)
- Other: Chair, ACC Accreditation Management Board; Member, ACC NCDR Management Board; President, Metro Detroit American Heart Association; Vice Chair, AHA/ACC Guideline for Evaluation and Diagnosis of Chest Pain; Vice Chair, ACC Chest Pain in the ED AUC Writing Committee; Co-Chair, ACEP Emergency Quality Network (E-QUAL) Chest Pain Initiative; CMO, Patient Insight
- Ownership Interests: Emergencies in Medicine LLC, Mespere, Patient Insight

Most Common Cause of Death

Data source: Centers for Disease Control and Prevention. Map by Ben Blatt/*Slate*.

Cause of Death Most Disproportionately Affecting Each State

(Top 10 Causes of Death Only)



Slate

Data source: Centers for Disease Control and Prevention. Map by Ben Blatt/*Slate*.

Driven By The Motor City…

Age-adjusted mortality rates per 100,000 for ten leading causes of death, Detroit, Michigan, and United States, 2014

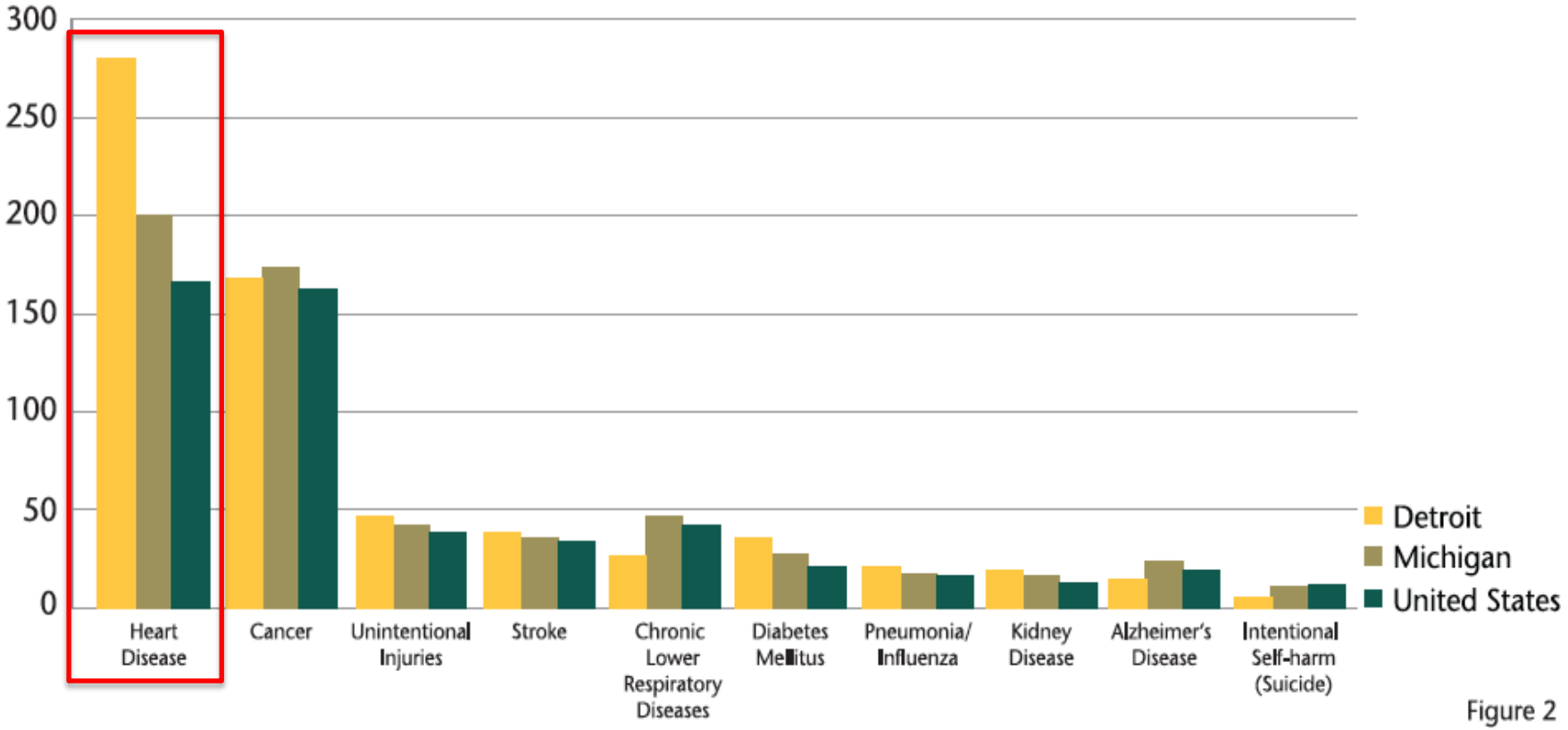
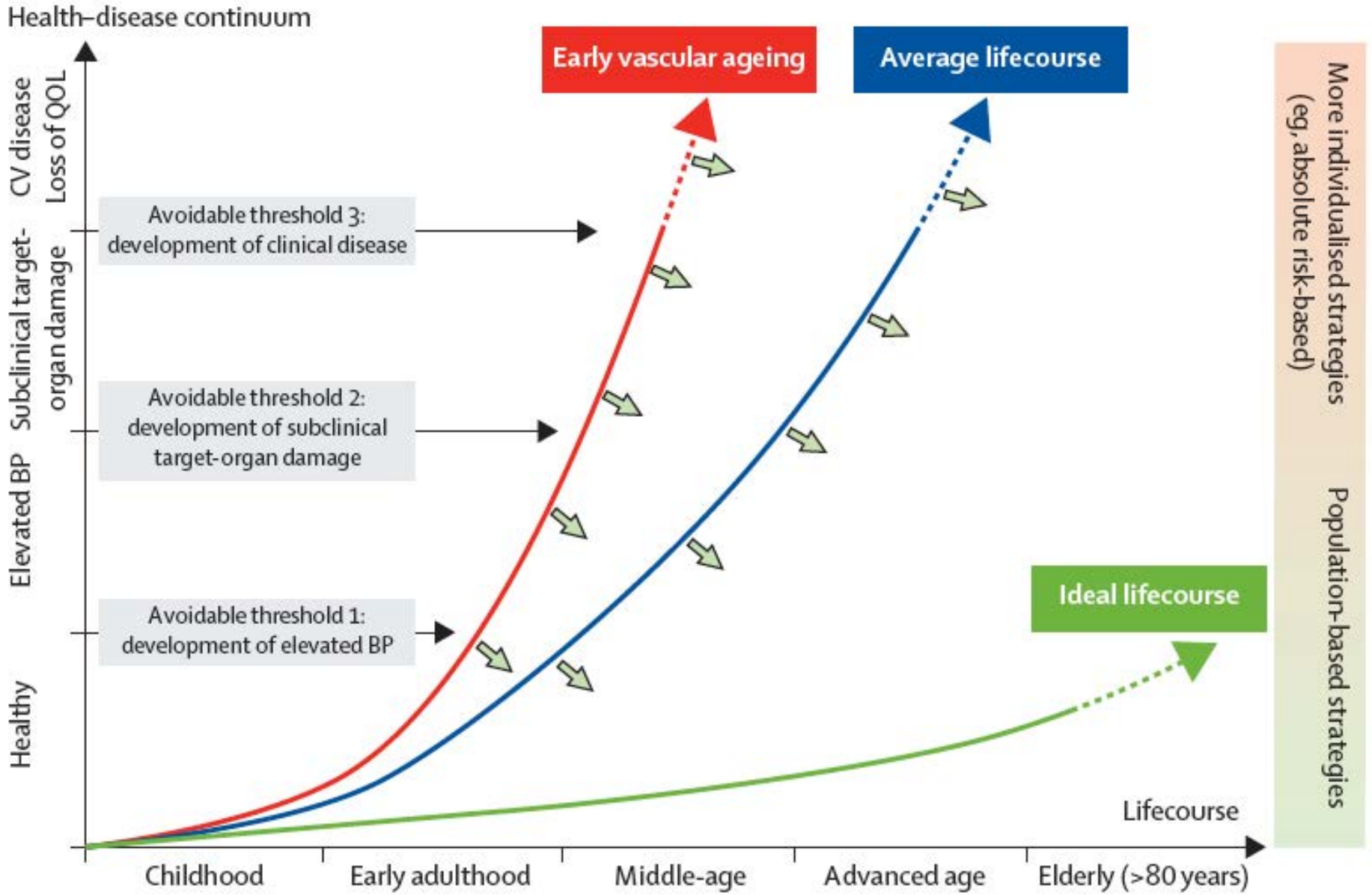


Figure 2



Olsen et al. Lancet 2016;388:2665-2712.

A call to action and a lifecourse strategy to address the global burden of raised blood pressure on current and future generations: the *Lancet* Commission on hypertension

Michael H Olsen, Sonia Y Angell, Samira Asma, Pierre Boutouyrie, Dylan Burger, Julio A Chirinos, Albertino Damasceno, Christian Delles, Anne-Paule Gimenez-Roqueplo, Dagmara Hering, Patricio López-Jaramillo, Fernando Martinez, Vlado Perkovic, Ernst R Rietzschel, Giuseppe Schillaci, Aletta E Schutte, Angelo Scuteri, James E Sharman, Kristian Wachtell, Ji Guang Wang*

Executive summary

Elevated blood pressure is the strongest modifiable risk factor for cardiovascular disease worldwide. Despite extensive knowledge about ways to prevent as well as to treat hypertension, the global incidence and prevalence of hypertension and, more importantly, its cardiovascular complications are not reduced—partly because of inadequacies in prevention, diagnosis, and control of the disorder in an ageing world.

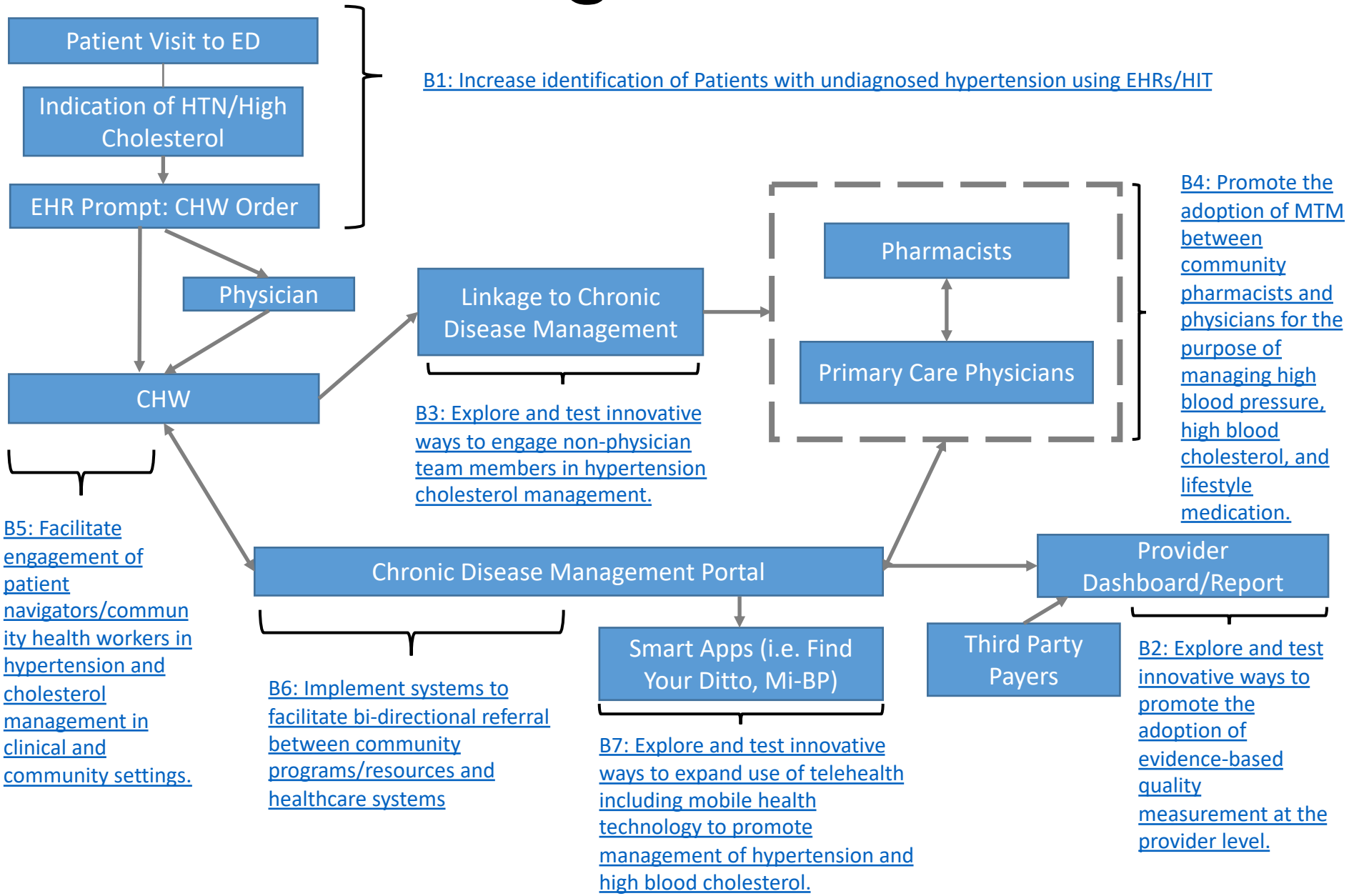
Olsen et al. Lancet 2016;388:2665-2712.

Prevalence of Hypertension Based on 2 SBP/DBP Thresholds*†

	SBP/DBP ≥130/80 mm Hg or Self-Reported Antihypertensive Medication†		SBP/DBP ≥140/90 mm Hg or Self-Reported Antihypertensive Medication‡	
Overall, crude	46%		32%	
	Men (n=4717)	Women (n=4906)	Men (n=4717)	Women (n=4906)
Overall, age-sex adjusted	48%	43%	31%	32%
Age group, y				
20–44	30%	19%	11%	10%
45–54	50%	44%	33%	27%
55–64	70%	63%	53%	52%
65–74	77%	75%	64%	63%
75+	79%	85%	71%	78%
Race-ethnicity §				
Non-Hispanic White	47%	41%	31%	30%
Non-Hispanic Black	59%	56%	42%	46%
Non-Hispanic Asian	45%	36%	29%	27%
Hispanic	44%	42%	27%	32%

The prevalence estimates have been rounded to the nearest full percentage.
*130/80 and 140/90 mm Hg in 9623 participants (≥20 years of age) in NHANES 2011–2014.
†BP cutpoints for definition of hypertension in the present guideline.
‡BP cutpoints for definition of hypertension in JNC 7.
§ Adjusted to the 2010 age-sex distribution of the U.S. adult population.
BP indicates blood pressure; DBP, diastolic blood pressure; NHANES, National Health and Nutrition Examination Survey; and SBP, systolic blood pressure.

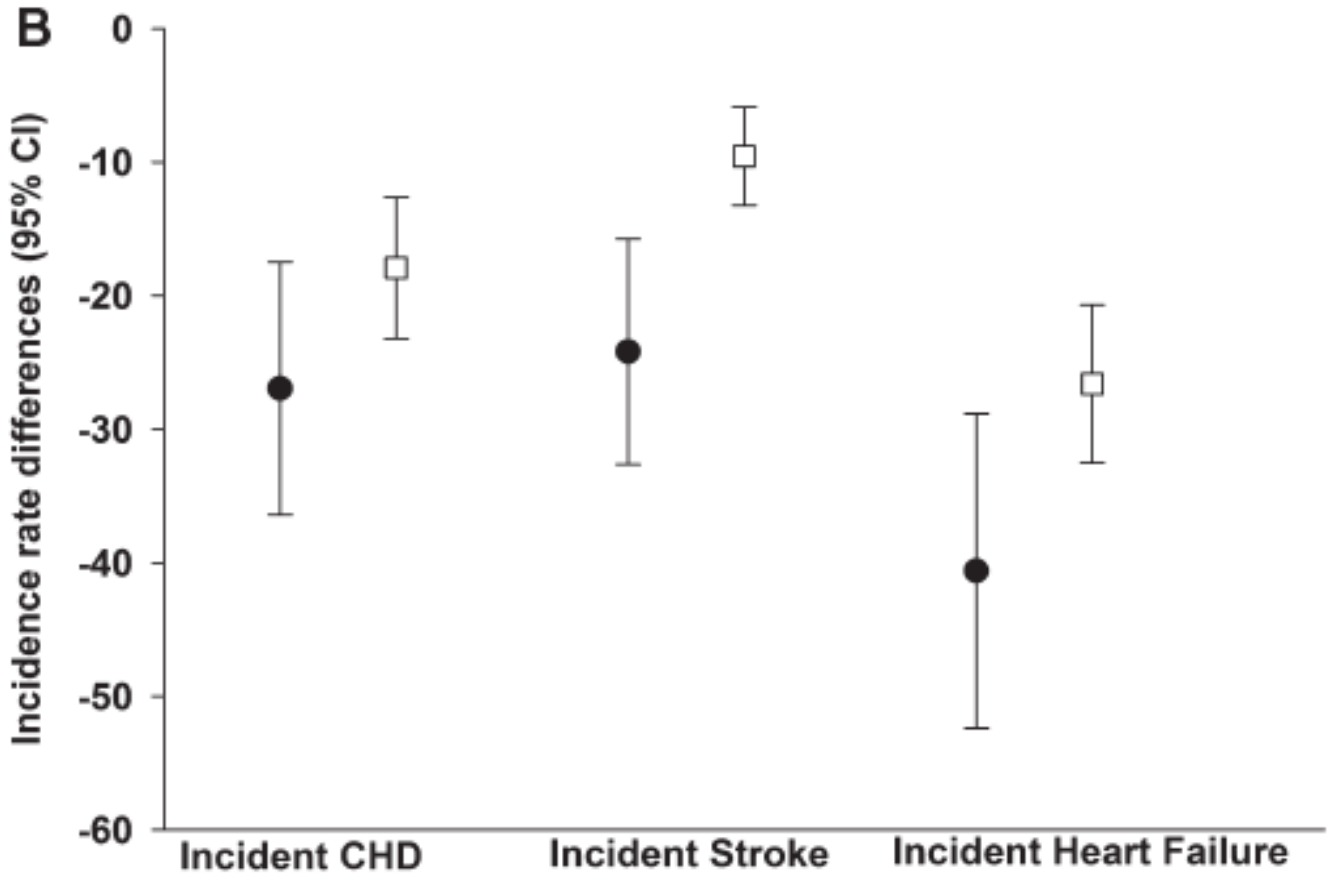
Bring It Down



Reducing the Blood Pressure–Related Burden of Cardiovascular Disease: Impact of Achievable Improvements in Blood Pressure Prevention and Control

Shakia T. Hardy, MPH; Laura R. Loehr, MD, PhD; Kenneth R. Butler, PhD; Sujatro Chakladar, MS; Patricia P. Chang, MD, MHS; Aaron R. Folsom, MD, MPH; Gerardo Heiss, MD, PhD; Richard F. MacLehose, PhD; Kunihiro Matsushita, MD, PhD; Christy L. Avery, PhD

Population Level BP Reduction of 2 mm Hg

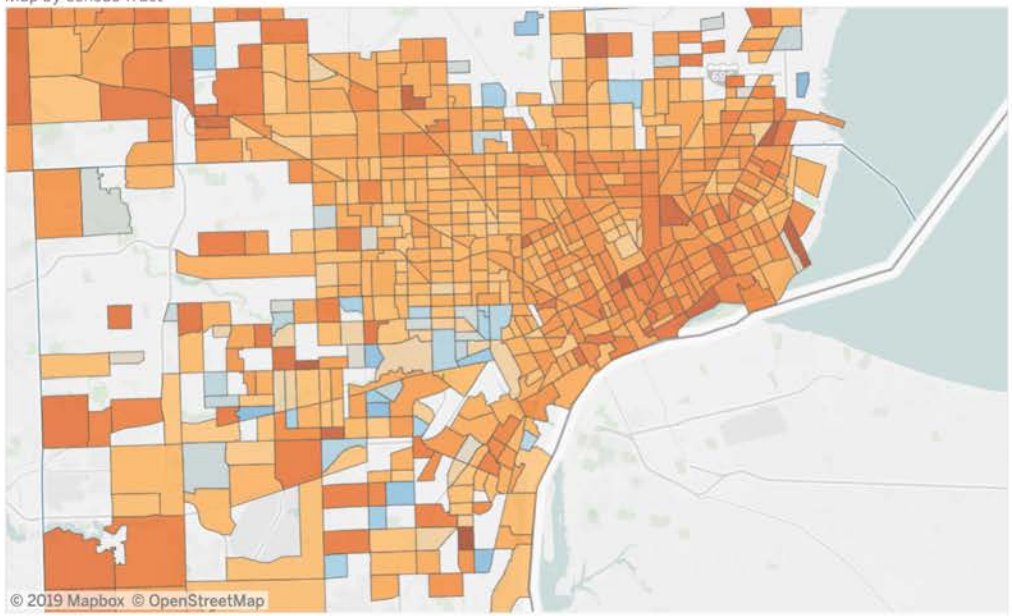


Hardy et al. J Am Heart Assoc. 2015;4:e002276 doi: 10.1161/JAHA.115.002276.

Hypertension Dashboard Metro-Detroit (Wayne, Oakland, Macomb, and Livingston Counties)

Select a Vital Category to Explore: Systolic Blood Pressure (Mean)

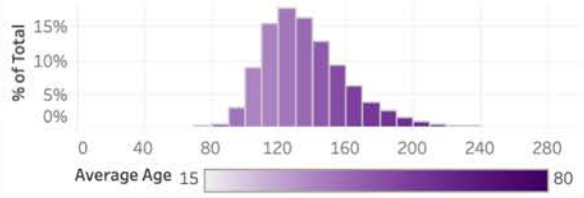
Map by Census Tract



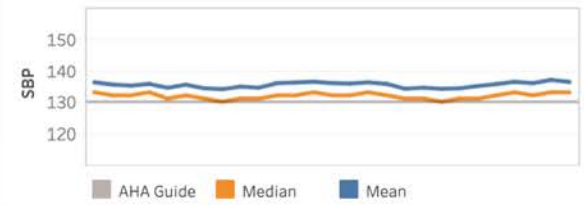
Set map legend midpoint as: AHA Guideline (Midpoint: 130)

123 147

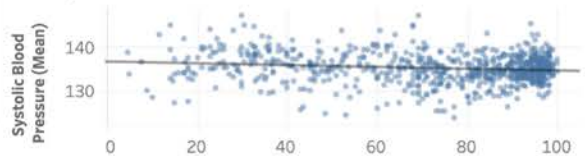
Histogram



Timeline Chart



Scatterplot



Compare to: ADI National Ranking (Median rank of block gr...

Filter Data:

Select County: ALL COUNTIES

Select City: ALL CITIES

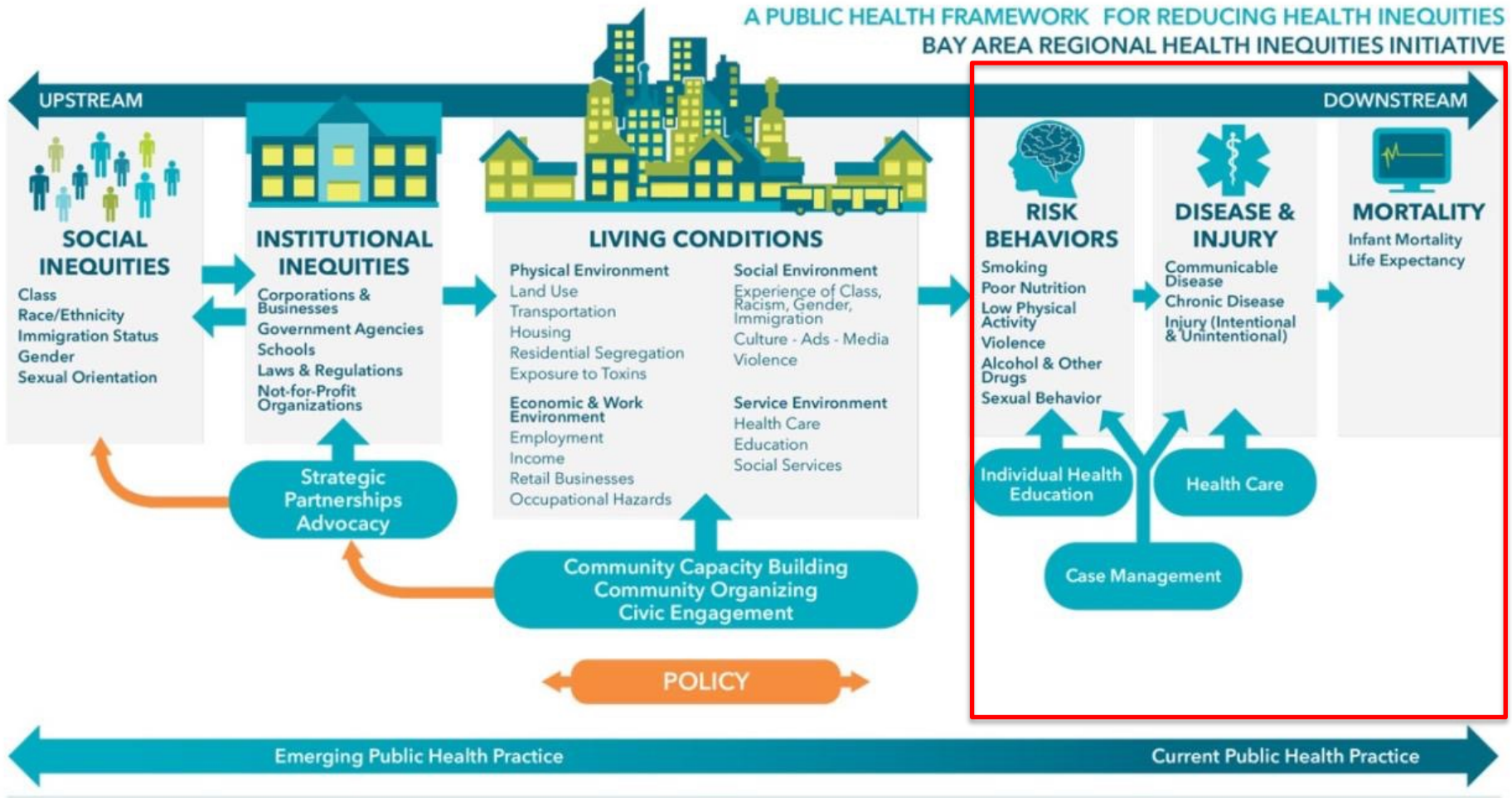
Date of Arrival: *Dec 2016-Feb 2019* (All)

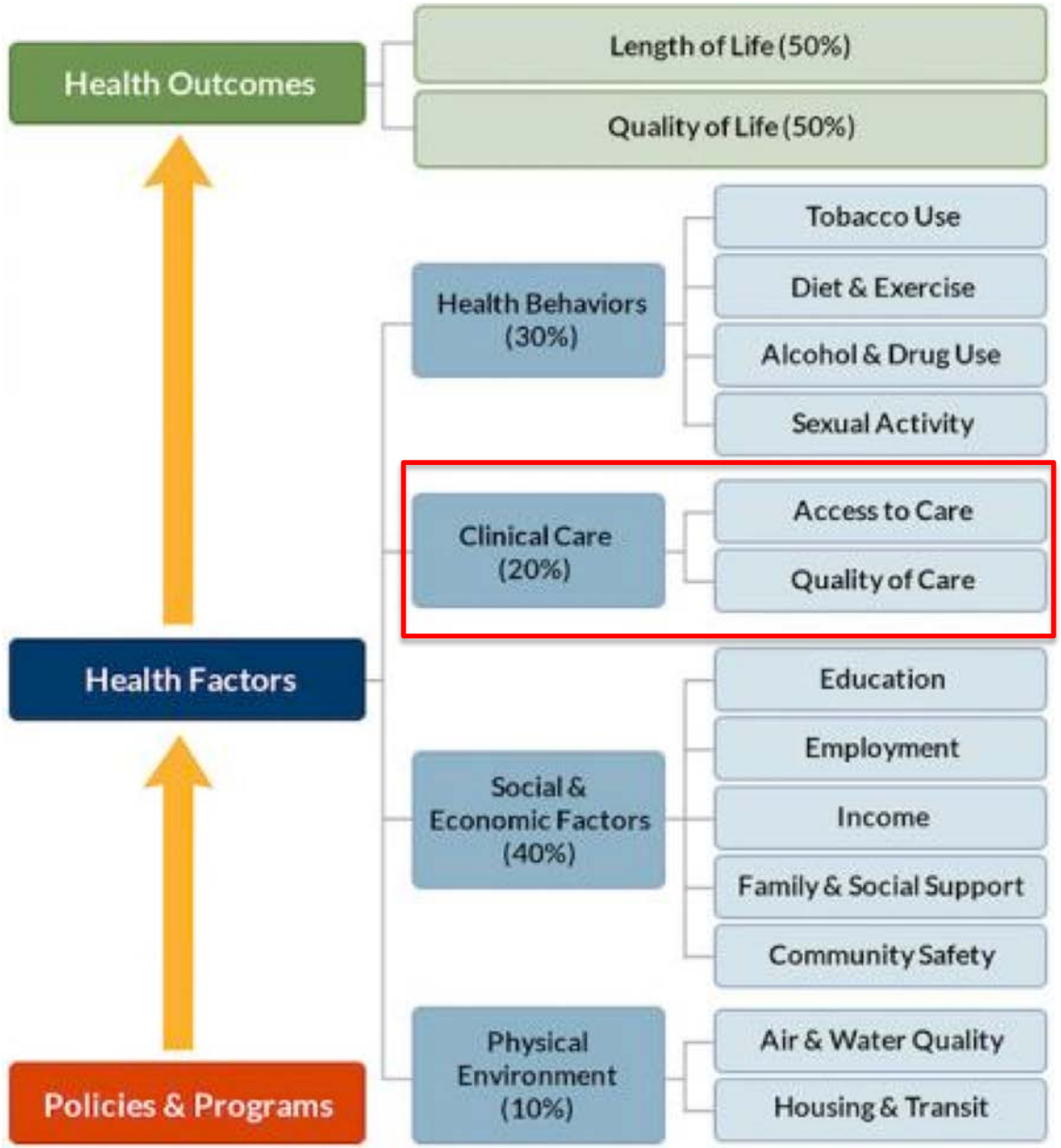
Gender: (All)

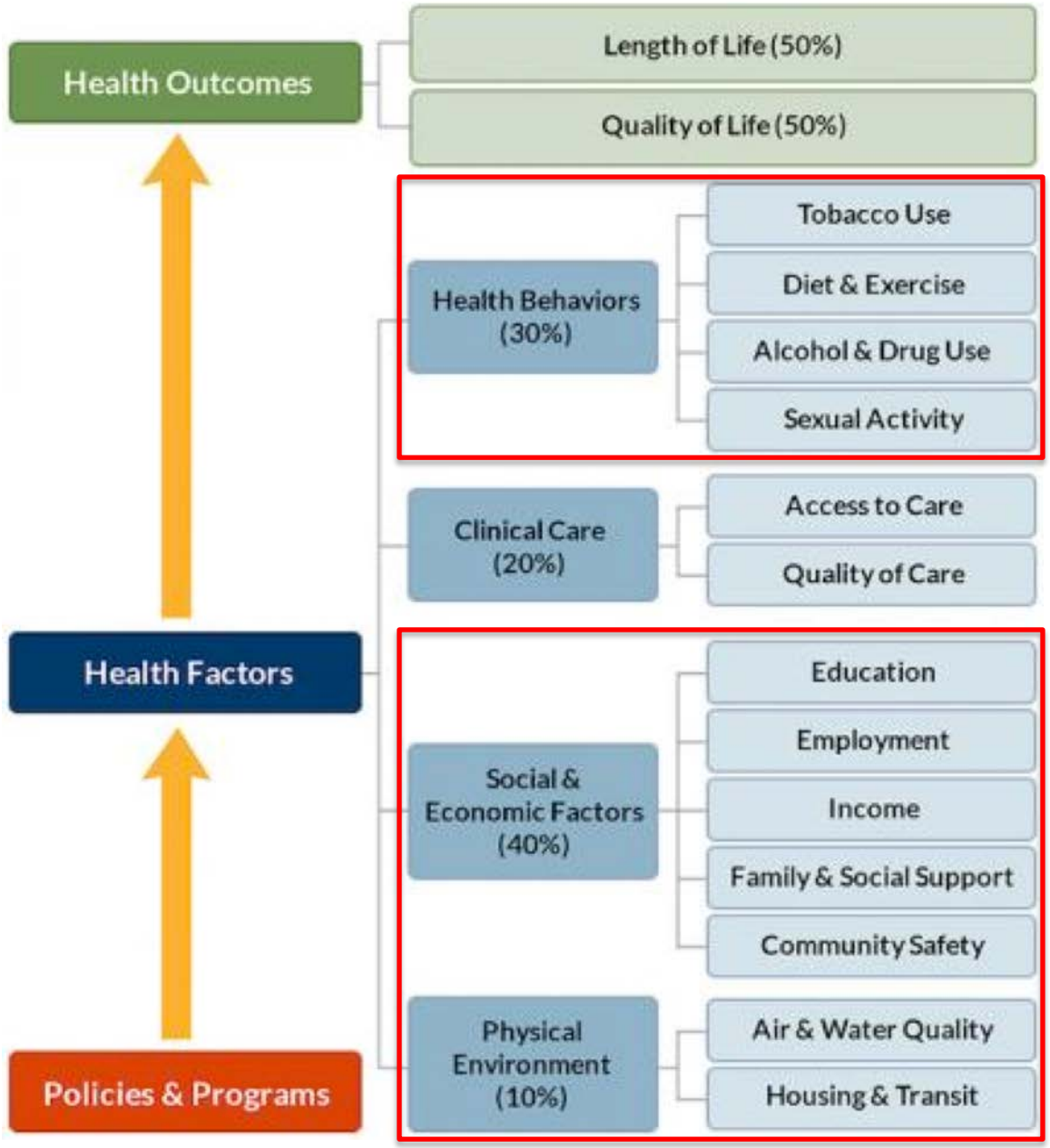
Age at Time of Visit: 0 118

Race/Ethnicity:
- [x] (All)
- [x] Black/African American
- [x] Other Race or More tha...
- [x] Spanish/Hispanic
- [x] Unknown
- [x] White

Race/Ethnicity	Number of Records	Mean SBP	Mean DBP	Mean HR	Mean Age	Mean Temp	% of Total
Black/African American	422,654	135.20	81.98	89.00	42	36.76	76.61%
White	82,775	135.72	80.33	90.02	46	36.72	15.00%
Other Race or More than On..	31,395	136.51	81.22	87.79	48	36.73	5.69%
Unknown	8,950	134.57	80.85	90.05	42	36.77	1.62%
Spanish/Hispanic	5,916	134.17	81.47	89.49	42	36.72	1.07%
Grand Total	**551,690**	**135.33**	**81.67**	**89.11**	**43**	**36.75**	**100.00%**


A PUBLIC HEALTH FRAMEWORK FOR REDUCING HEALTH INEQUITIES
BAY AREA REGIONAL HEALTH INEQUITIES INITIATIVE
UPSTREAM
DOWNSTREAM
SOCIAL INEQUITIES
Class
Race/Ethnicity
Immigration Status
Gender
Sexual Orientation
INSTITUTIONAL INEQUITIES
Corporations & Businesses
Government Agencies
Schools
Laws & Regulations
Not-for-Profit Organizations
LIVING CONDITIONS
Physical Environment
Land Use
Transportation
Housing
Residential Segregation
Exposure to Toxins
Economic & Work Environment
Employment
Income
Retail Businesses
Occupational Hazards
Social Environment
Experience of Class, Racism, Gender, Immigration
Culture - Ads - Media
Violence
Service Environment
Health Care
Education
Social Services
RISK BEHAVIORS
Smoking
Poor Nutrition
Low Physical Activity
Violence
Alcohol & Other Drugs
Sexual Behavior
DISEASE & INJURY
Communicable Disease
Chronic Disease
Injury (Intentional & Unintentional)
MORTALITY
Infant Mortality
Life Expectancy
Strategic Partnerships Advocacy
Community Capacity Building
Community Organizing
Civic Engagement
POLICY
Individual Health Education
Health Care
Case Management
Emerging Public Health Practice
Current Public Health Practice


Health Outcomes
Length of Life (50%)
Quality of Life (50%)
Health Factors
Health Behaviors (30%)
Tobacco Use
Diet & Exercise
Alcohol & Drug Use
Sexual Activity
Clinical Care (20%)
Access to Care
Quality of Care
Social & Economic Factors (40%)
Education
Employment
Income
Family & Social Support
Community Safety
Physical Environment (10%)
Air & Water Quality
Housing & Transit
Policies & Programs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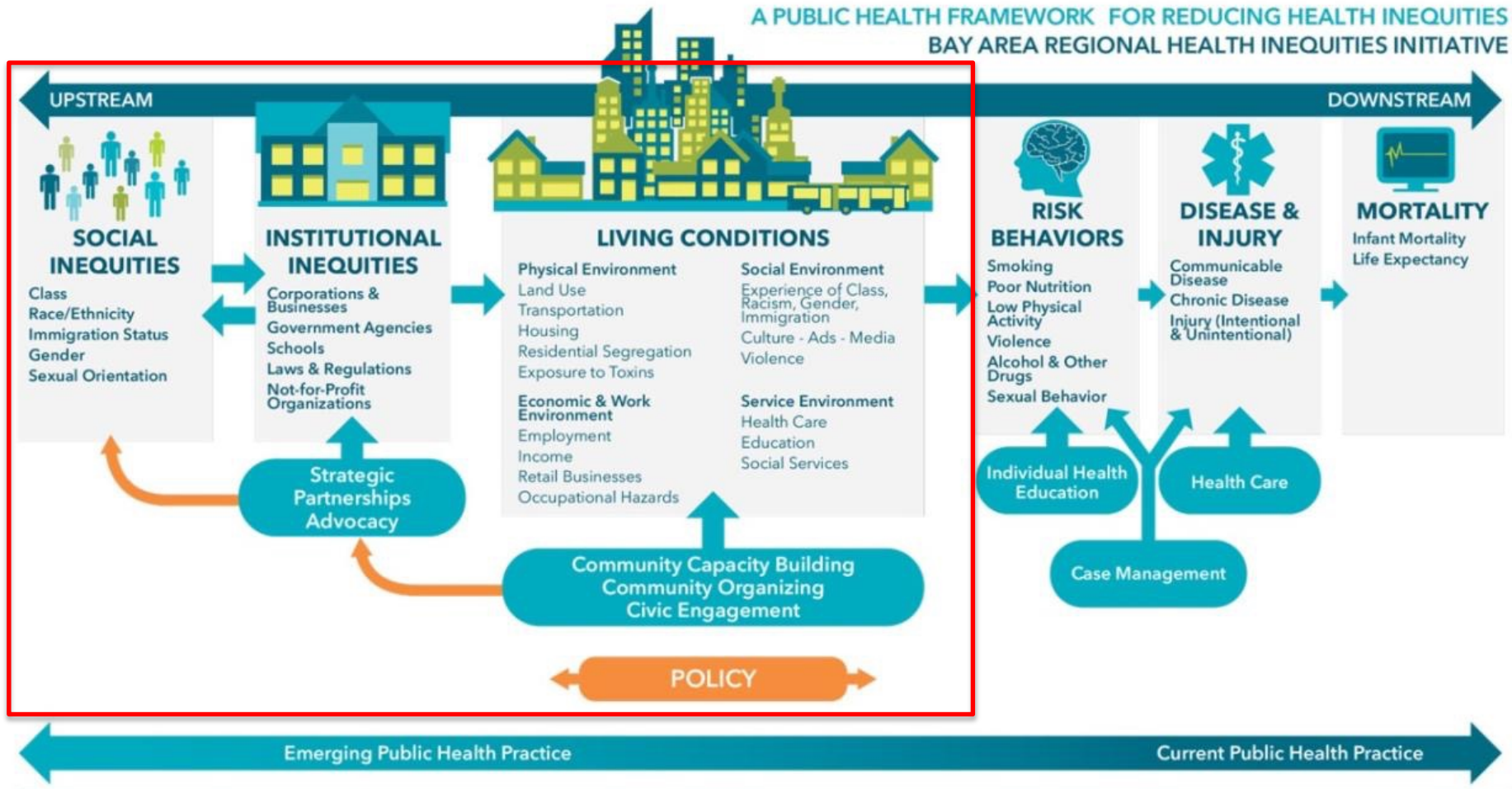
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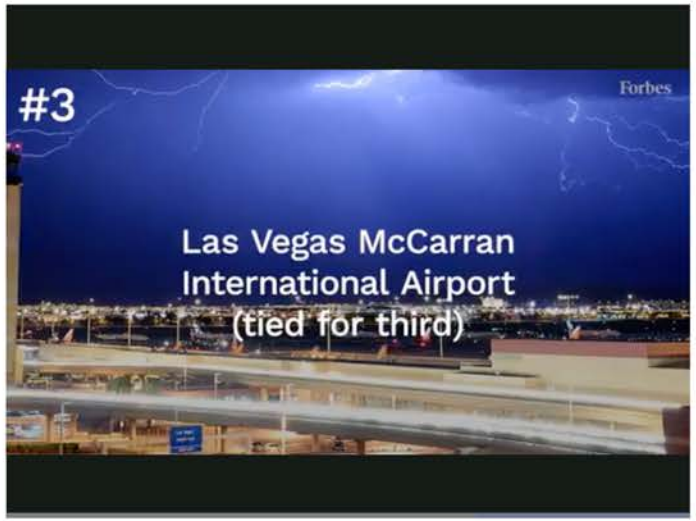
Current Public Health Practice

28,579 views | Dec 4, 2019, 07:09am

Top 8 Predictions That Will Disrupt Healthcare in 2020

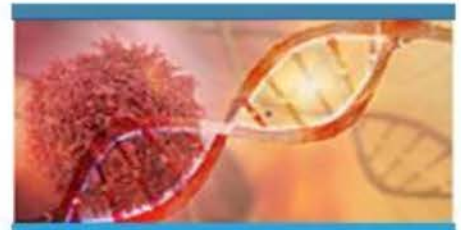
Reenita Das Contributor
Healthcare

Every year, our team of futurists, analysts, and consultants at Frost & Sullivan's Transformational Healthcare Group comes together to brainstorm and predict the themes, technologies, and global forces that will define the next 12 to 18 months for the healthcare industry. We also retrospect how we did each year, and each year we are becoming more accurate in the predictions we make. For the **2019 predictions** that were released in November 2018, six out of eight predictions realized as anticipated, while the two remaining predictions have not panned out exactly the way we thought.



Social determinants of health (SDOH) analytics platform gains traction during 2020

AI develops more use cases and faces more ethical challenges, beginning with radiology



Annuity-based model to catapult gene therapy commercialization

Continued VC funding mega-rounds make 2020 a banner year for digital health unicorns' IPO exits

Interoperability by pure-play solution vendors will gain ground against standalone systems

Telehealth will gain mainstream adoption in overall mix of healthcare services

Precision medicine-led approaches will pave the way for next-gen health data analytics solutions

2020 will be a year of 'Retailization' for healthcare industry, promoting comparison shopping consumer mindset

Source: Frost & Sullivan

Roundtable Report Identifies SDOH Progress, Challenges

N.C. officials unveil FHIR-based SDOH screening questionnaire

Author — David Raths

Dec 17th, 2019

LATEST IN SOCIAL DETERMINANTS OF HEALTH

Social Determinants of Health
The Importance of Addressing Social Needs to Improve Health Outcomes
Rhonda Mims, Industry Voice Dec 23rd, 2019

Social Determinants of Health
Harvard Pilgrim Health Care, Ride Health Partner for Medicare Transportation in Two New England States
Rajiv Leventhal Dec 6th, 2019

Social Determinants of Health
How Are Healthcare Companies Successfully Investing in Affordable Housing?
Rajiv Leventhal Dec 5th, 2019

Social Determinants of Health
ProMedica Creates 'Data Nerve Center' to Address Social Determinants
David Raths Dec 4th, 2019

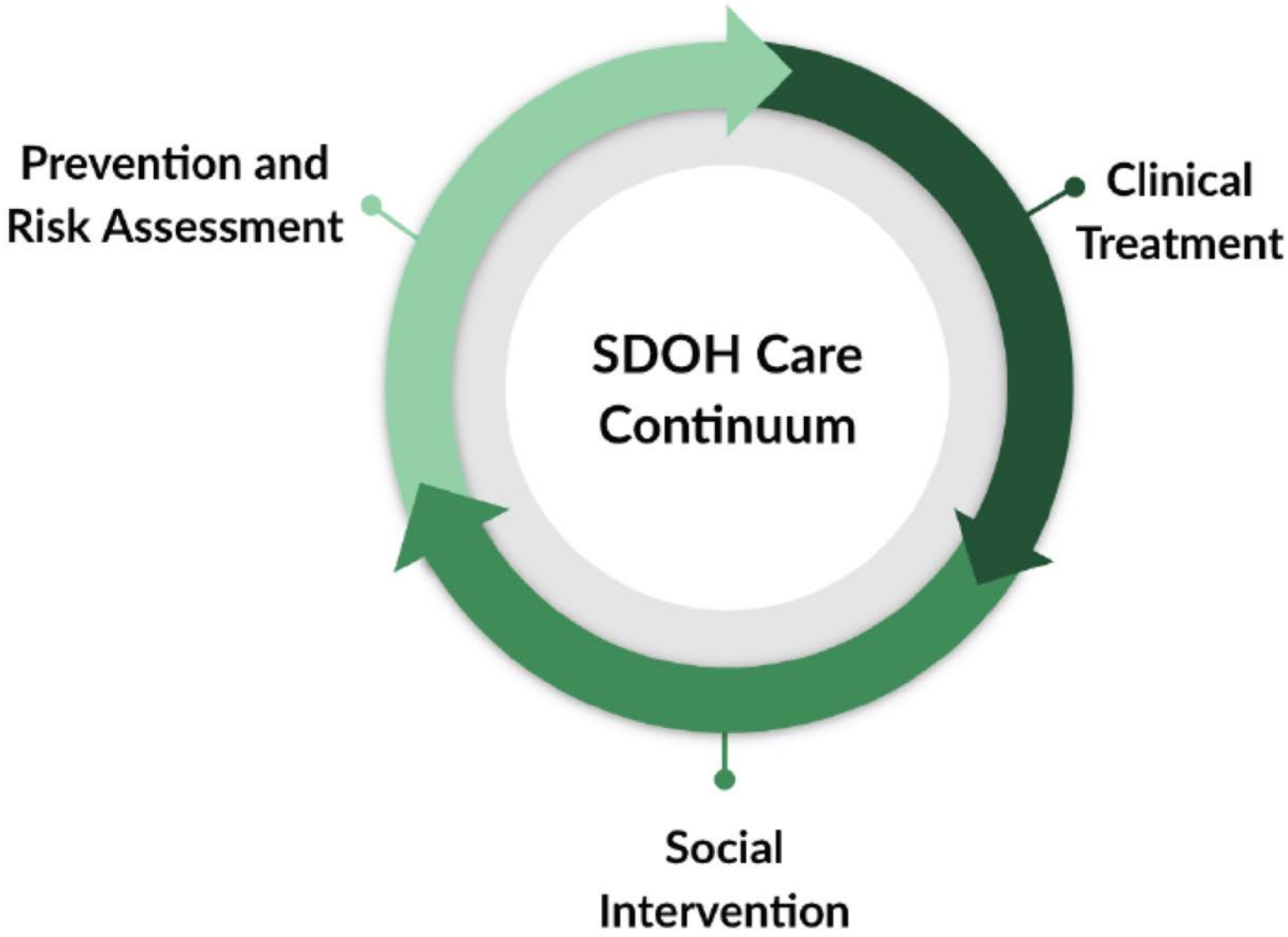
Social Determinants of Health
Molina Healthcare of Washington to Fund Community Orgs Dedicated to Pop Health,

CODE

Leveraging Data on the Social Determinants of Health

Roundtable Report

December 2019


Prevention and
Risk Assessment
Clinical
Treatment
SDOH Care
Continuum
Social
Intervention

SDOH Continuum of Care		
Continuum of Care Stage	**Successes**	**Challenges**
Prevention and Risk Assessment	• Expansion of population-level data • Increased use of commercial platforms	• Difficulty accessing open and available data sources • Difficulty finding timely and representative data • Poor understanding of high-priority data elements
Clinical Treatment and Care	• Wide availability of social screening assessments • Ability to gather individual-level data	• Poor data on care coordination • No standardized screening assessments • Lack of incentives to gather data • Opaque rules about patient ownership of data and privacy concerns
Interventions and Referrals	• Comprehensive referral platforms • Growth in data-driven partnerships	• Lack of CBO data capacity • Need for broader data infrastructure • Poor data measuring patient outcomes and impact

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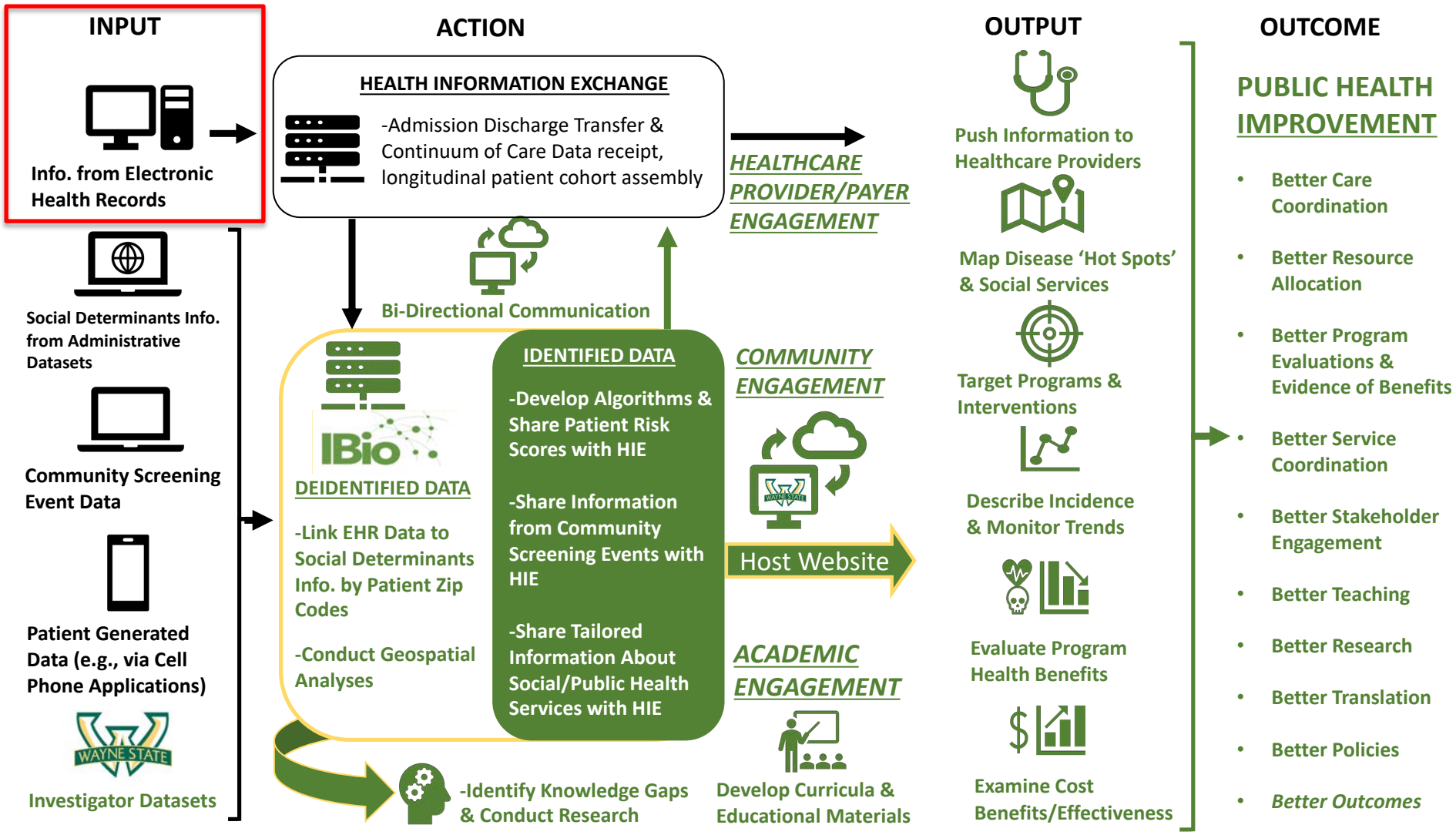
Population Health OutcomEs aNd Information EXchange


INPUT
Info. from Electronic Health Records
Social Determinants Info. from Administrative Datasets
Community Screening Event Data
Patient Generated Data (e.g., via Cell Phone Applications)
WAYNE STATE
Investigator Datasets
ACTION
HEALTH INFORMATION EXCHANGE
-Admission Discharge Transfer & Continuum of Care Data receipt, longitudinal patient cohort assembly
Bi-Directional Communication
IBio
DEIDENTIFIED DATA
-Link EHR Data to Social Determinants Info. by Patient Zip Codes
-Conduct Geospatial Analyses
IDENTIFIED DATA
-Develop Algorithms & Share Patient Risk Scores with HIE
-Share Information from Community Screening Events with HIE
-Share Tailored Information About Social/Public Health Services with HIE
-Identify Knowledge Gaps & Conduct Research
HEALTHCARE PROVIDER/PAYER ENGAGEMENT
COMMUNITY ENGAGEMENT
Host Website
ACADEMIC ENGAGEMENT
Develop Curricula & Educational Materials
OUTPUT
Push Information to Healthcare Providers
Map Disease 'Hot Spots' & Social Services
Target Programs & Interventions
Describe Incidence & Monitor Trends
Evaluate Program Health Benefits
Examine Cost Benefits/Effectiveness
OUTCOME
PUBLIC HEALTH IMPROVEMENT
Better Care Coordination
Better Resource Allocation
Better Program Evaluations & Evidence of Benefits
Better Service Coordination
Better Stakeholder Engagement
Better Teaching
Better Research
Better Translation
Better Policies
Better Outcomes

Welcome to

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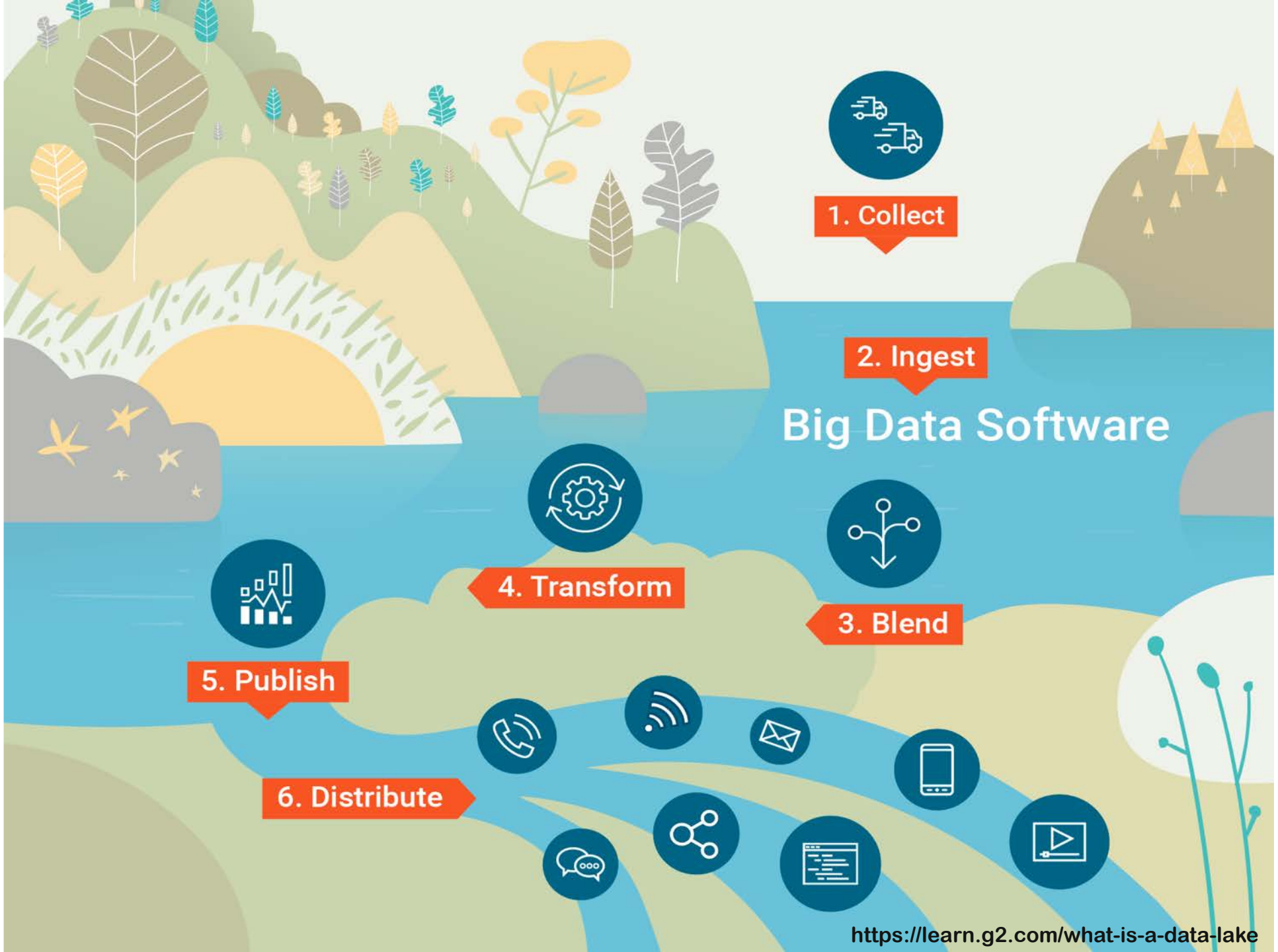
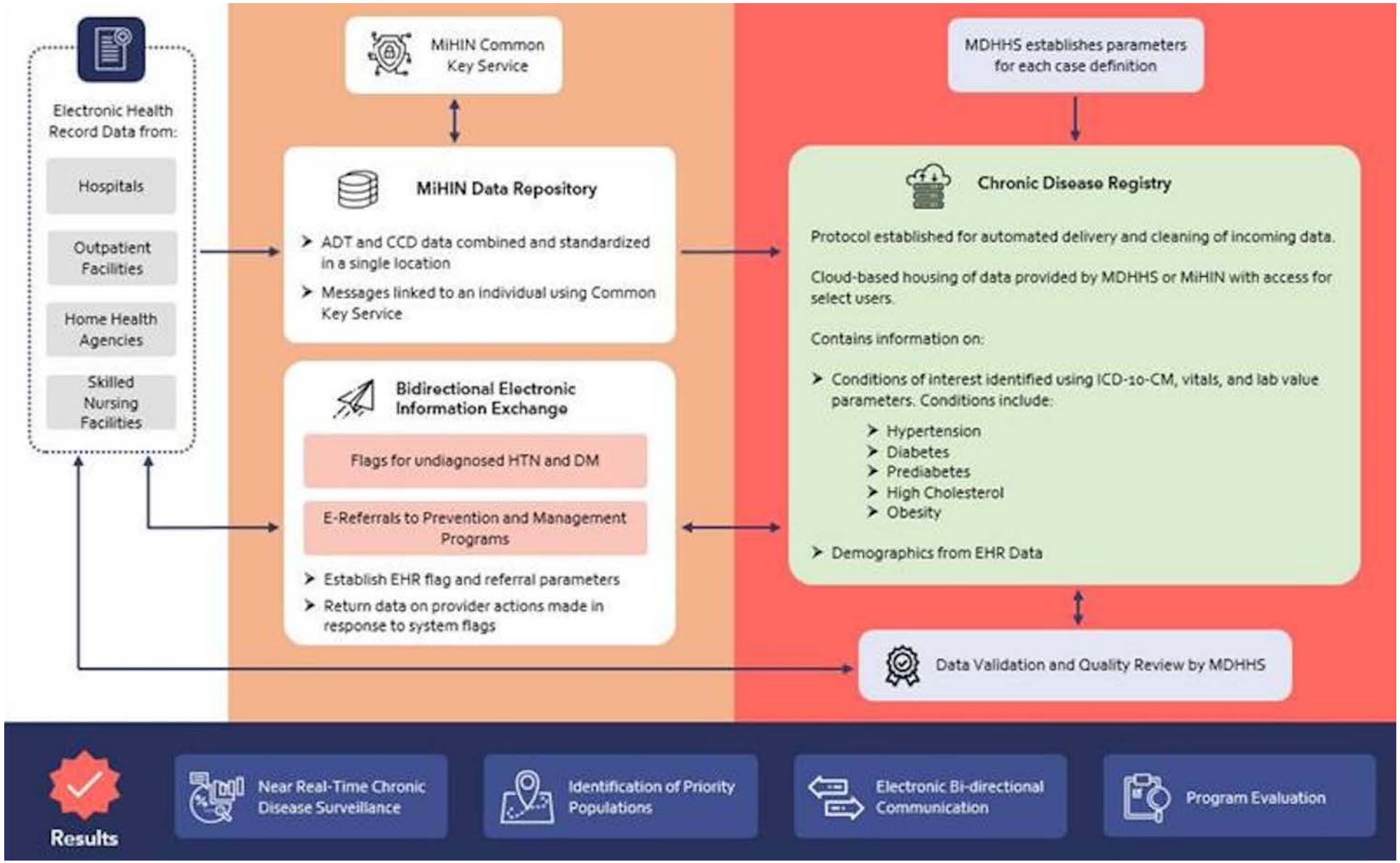
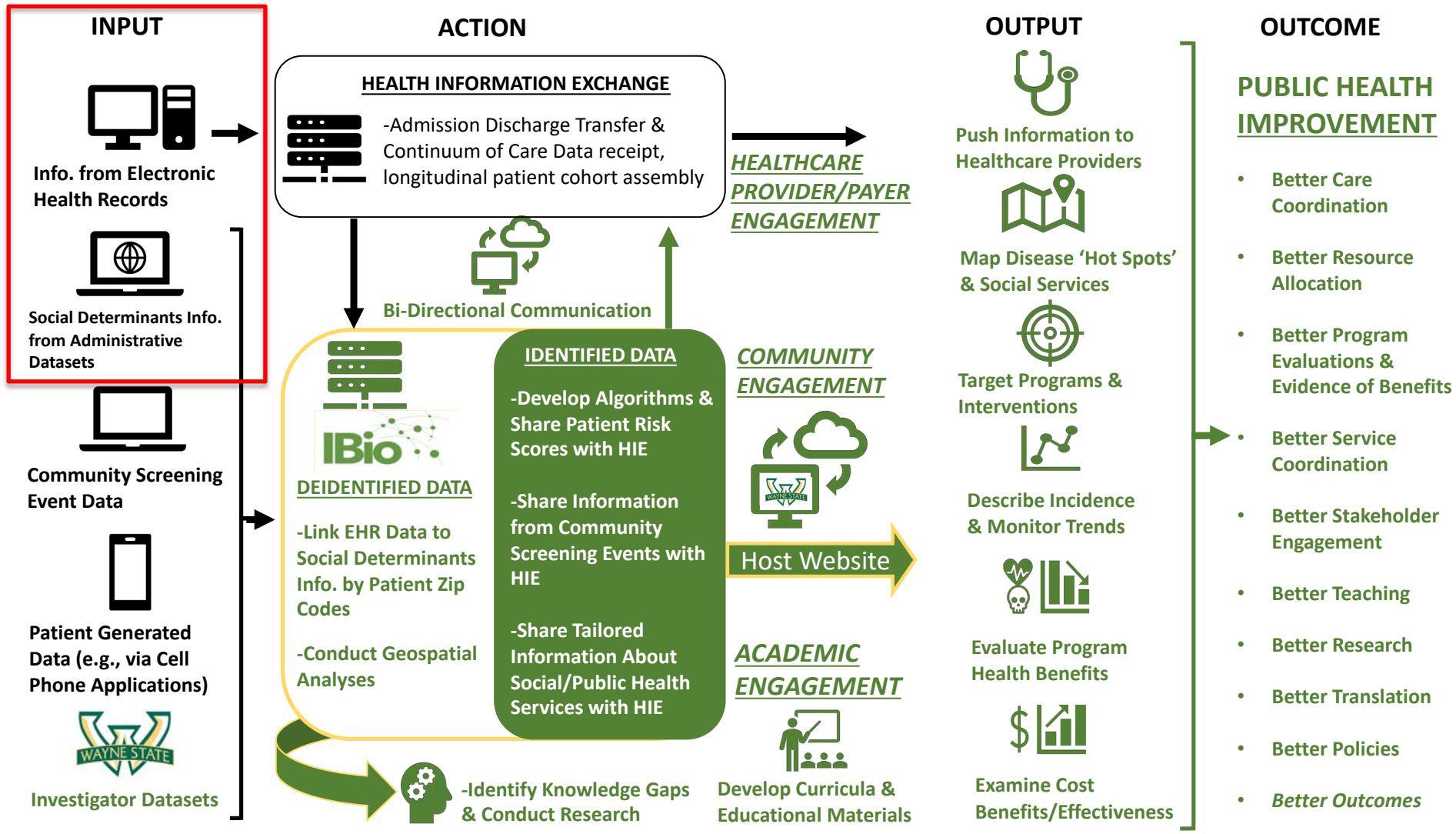

1. Collect
2. Ingest
Big Data Software
4. Transform
3. Blend
5. Publish
6. Distribute
https://learn.g2.com/what-is-a-data-lake


Electronic Health Record Data from:
Hospitals
Outpatient Facilities
Home Health Agencies
Skilled Nursing Facilities
MiHIN Common Key Service
MiHIN Data Repository
ADT and CCD data combined and standardized in a single location
Messages linked to an individual using Common Key Service
Bidirectional Electronic Information Exchange
Flags for undiagnosed HTN and DM
E-Referrals to Prevention and Management Programs
Establish EHR flag and referral parameters
Return data on provider actions made in response to system flags
MDHHS establishes parameters for each case definition
Chronic Disease Registry
Protocol established for automated delivery and cleaning of incoming data.
Cloud-based housing of data provided by MDHHS or MiHIN with access for select users.
Contains information on:
Conditions of interest identified using ICD-10-CM, vitals, and lab value parameters. Conditions include:
Hypertension
Diabetes
Prediabetes
High Cholesterol
Obesity
Demographics from EHR Data
Data Validation and Quality Review by MDHHS
Results
Near Real-Time Chronic Disease Surveillance
Identification of Priority Populations
Electronic Bi-directional Communication
Program Evaluation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Better Care Coordination
Better Resource Allocation
Better Program Evaluations & Evidence of Benefits
Better Service Coordination
Better Stakeholder Engagement
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Better Research
Better Translation
Better Policies
Better Outcomes

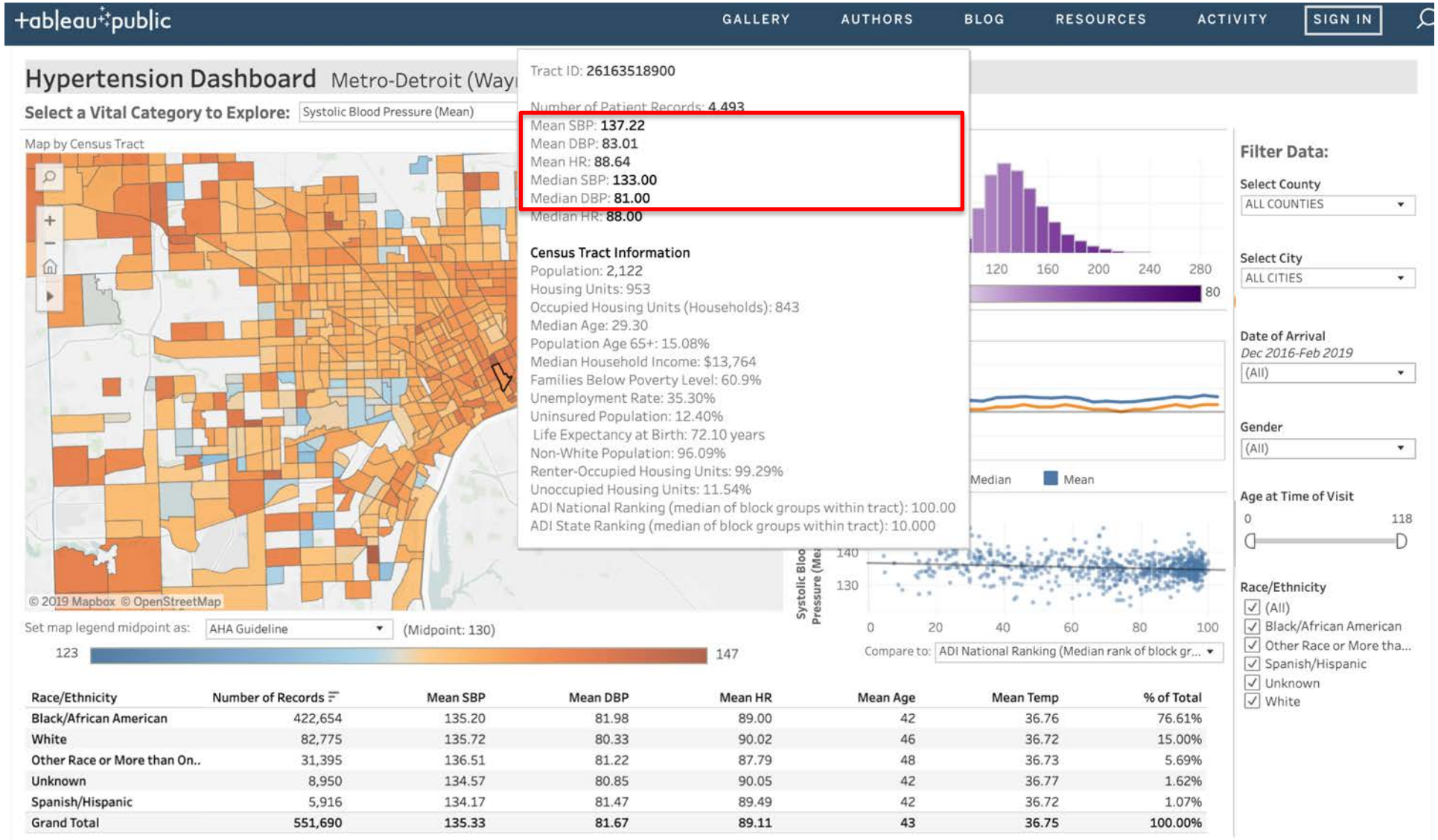
Social Determinants of Health

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education		Stress	
Support	Walkability				
	Zip code / geography				

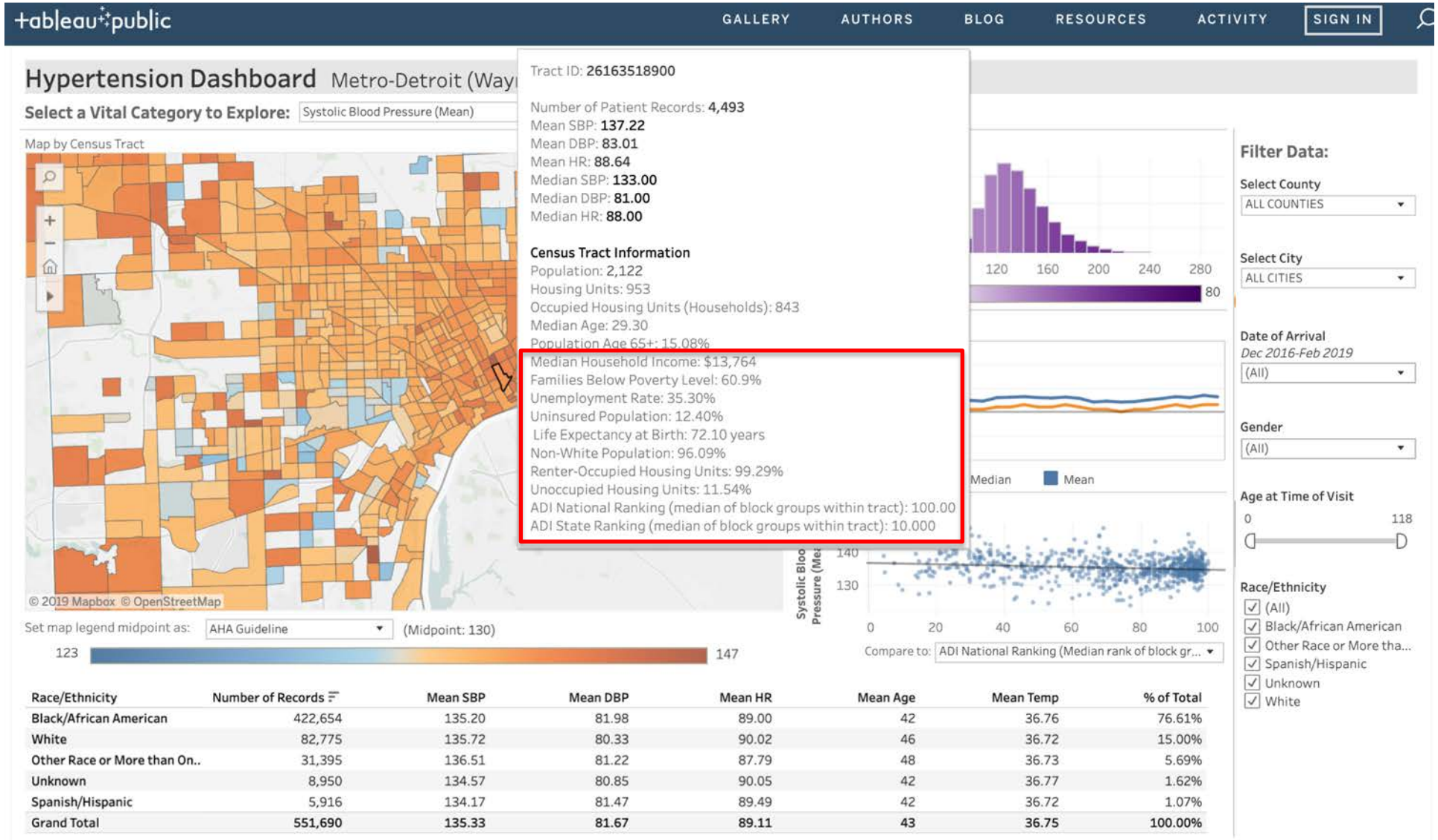
Health Outcomes

Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/



Race/Ethnicity	Number of Records	Mean SBP	Mean DBP	Mean HR	Mean Age	Mean Temp	% of Total
Black/African American	422,654	135.20	81.98	89.00	42	36.76	76.61%
White	82,775	135.72	80.33	90.02	46	36.72	15.00%
Other Race or More than On..	31,395	136.51	81.22	87.79	48	36.73	5.69%
Unknown	8,950	134.57	80.85	90.05	42	36.77	1.62%
Spanish/Hispanic	5,916	134.17	81.47	89.49	42	36.72	1.07%
Grand Total	**551,690**	**135.33**	**81.67**	**89.11**	**43**	**36.75**	**100.00%**



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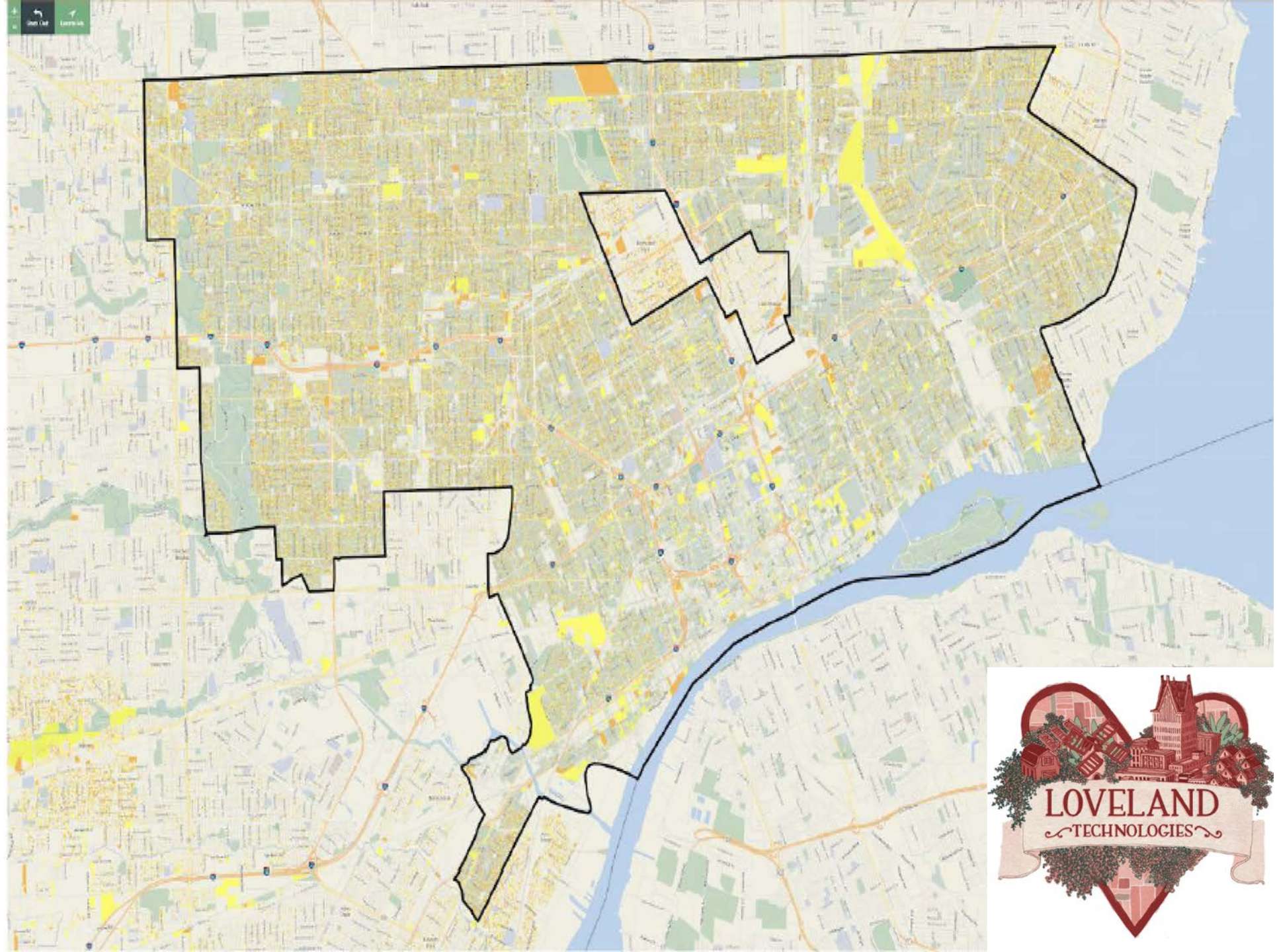
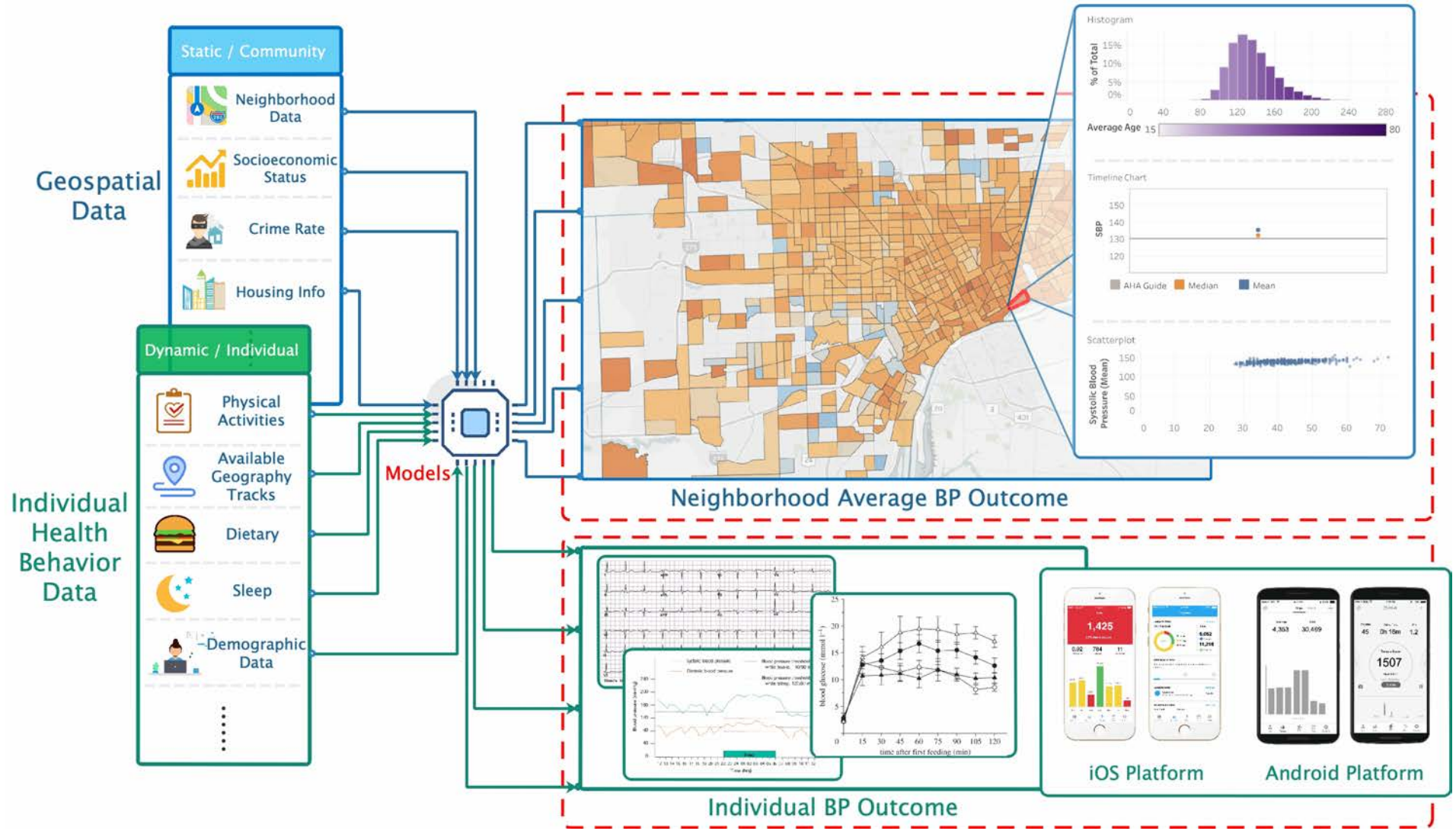
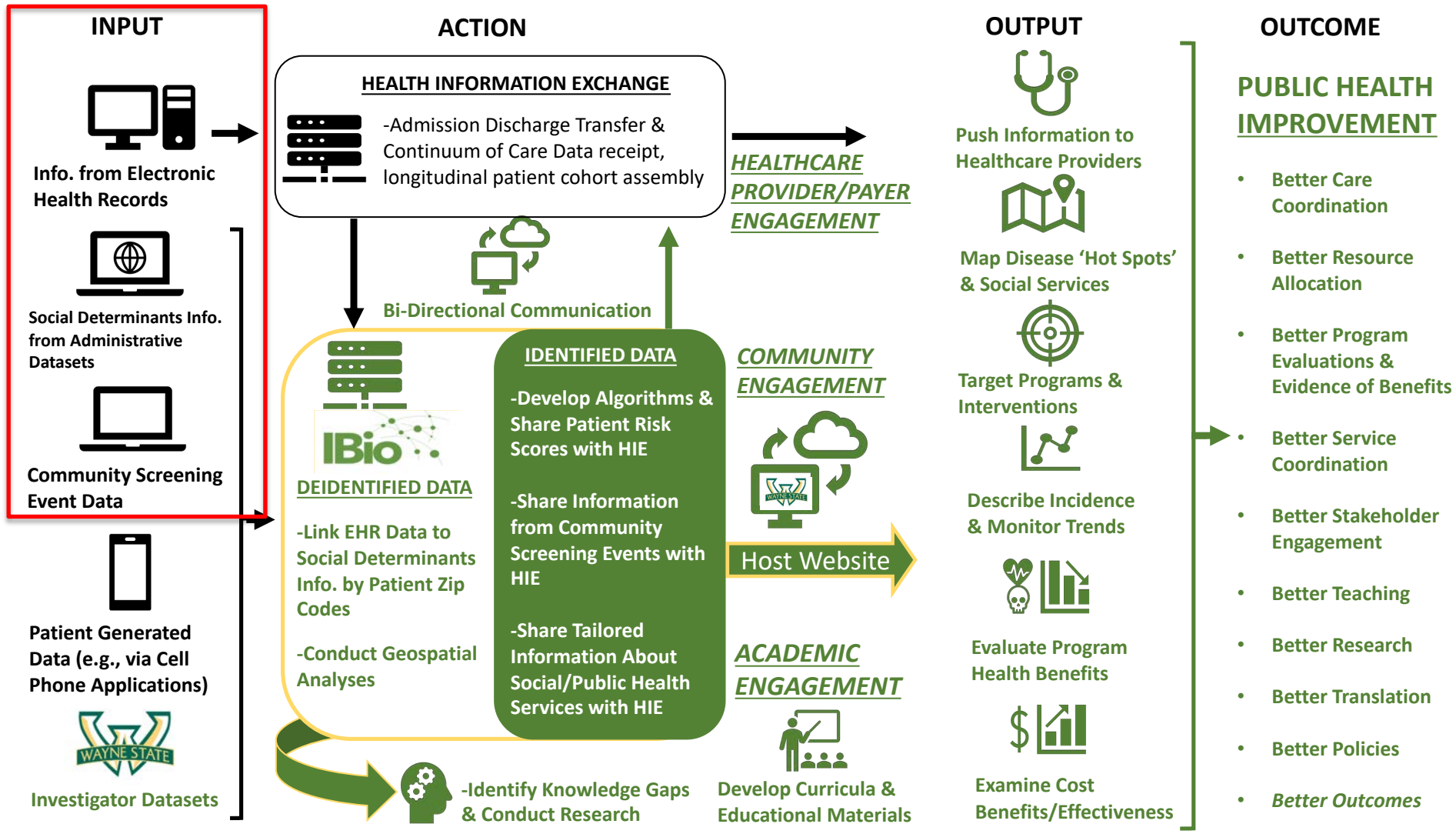
Source	Description	Level	Open Access
MiHIN	Demographic, clinical information, insurance	Patient	No
OpenStreetMap	Point of Interests	City/Instance	Yes
Census Bureau	Socioeconomic data	Census Track	Yes
Detroit Open Data Portal	Crime and violence data	Census Block	Yes
Michigan Department of Environmental Quality	Environmental conditions	Census Tract	Yes
USDA	Food access	Census Tract	Yes
Landgrid, Loveland Tech	Housing security	Census Block	Yes
Bureau of Labor Statistics	Monthly employment, unemployment	Census Tract	Yes
Data Driven Detroit	Transportation, education	Census Tract	Yes
Neighborhood Atlas	Area deprivation index	Census Block	Yes


LOVELAND
TECHNOLOGIES


Geospatial Data
Static / Community
Neighborhood Data
Socioeconomic Status
Crime Rate
Housing Info
Individual Health Behavior Data
Dynamic / Individual
Physical Activities
Available Geography Tracks
Dietary
Sleep
Demographic Data
Models
Histogram
% of Total
Average Age
Timeline Chart
SBP
AHA Guide
Median
Mean
Scatterplot
Systolic Blood Pressure (Mean)
Neighborhood Average BP Outcome
blood glucose (mmol l⁻¹)
time after first feeding (min)
Individual BP Outcome
iOS Platform
Android Platform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Social Determinants Info. from Administrative Datasets
Community Screening Event Data
Patient Generated Data (e.g., via Cell Phone Applications)
WAYNE STATE
Investigator Datasets
ACTION
HEALTH INFORMATION EXCHANGE
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Bi-Directional Communication
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Target Programs & Interventions
Describe Incidence & Monitor Trends
Evaluate Program Health Benefits
Examine Cost Benefits/Effectiveness
OUTCOME
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Better Care Coordination
Better Resource Allocation
Better Program Evaluations & Evidence of Benefits
Better Service Coordination
Better Stakeholder Engagement
Better Teaching
Better Research
Better Translation
Better Policies
Better Outcomes

Thank you for joining us at Men's Health Event

September 21, 2019

Give it a shot! Immunizations aren't just for kids.

We hope you learned a lot about vaccines and how to "Fight like a Man" for your health!

MEN'S HEALTH EVENT
20XIX

Team fEMR

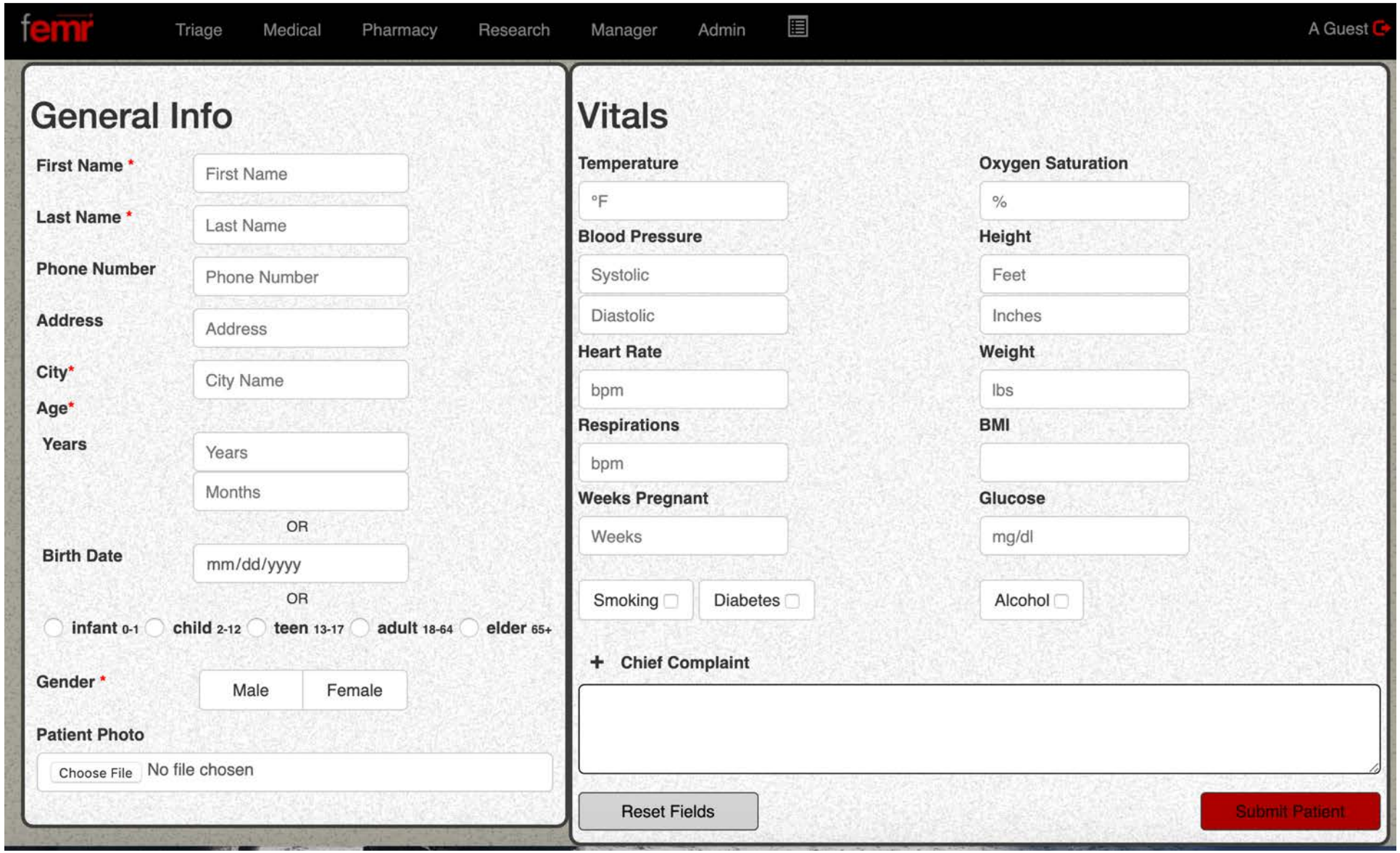
We created a fast, open-source Electronic Medical Records system for transient medical teams in order to promote data driven communication in low resource settings.

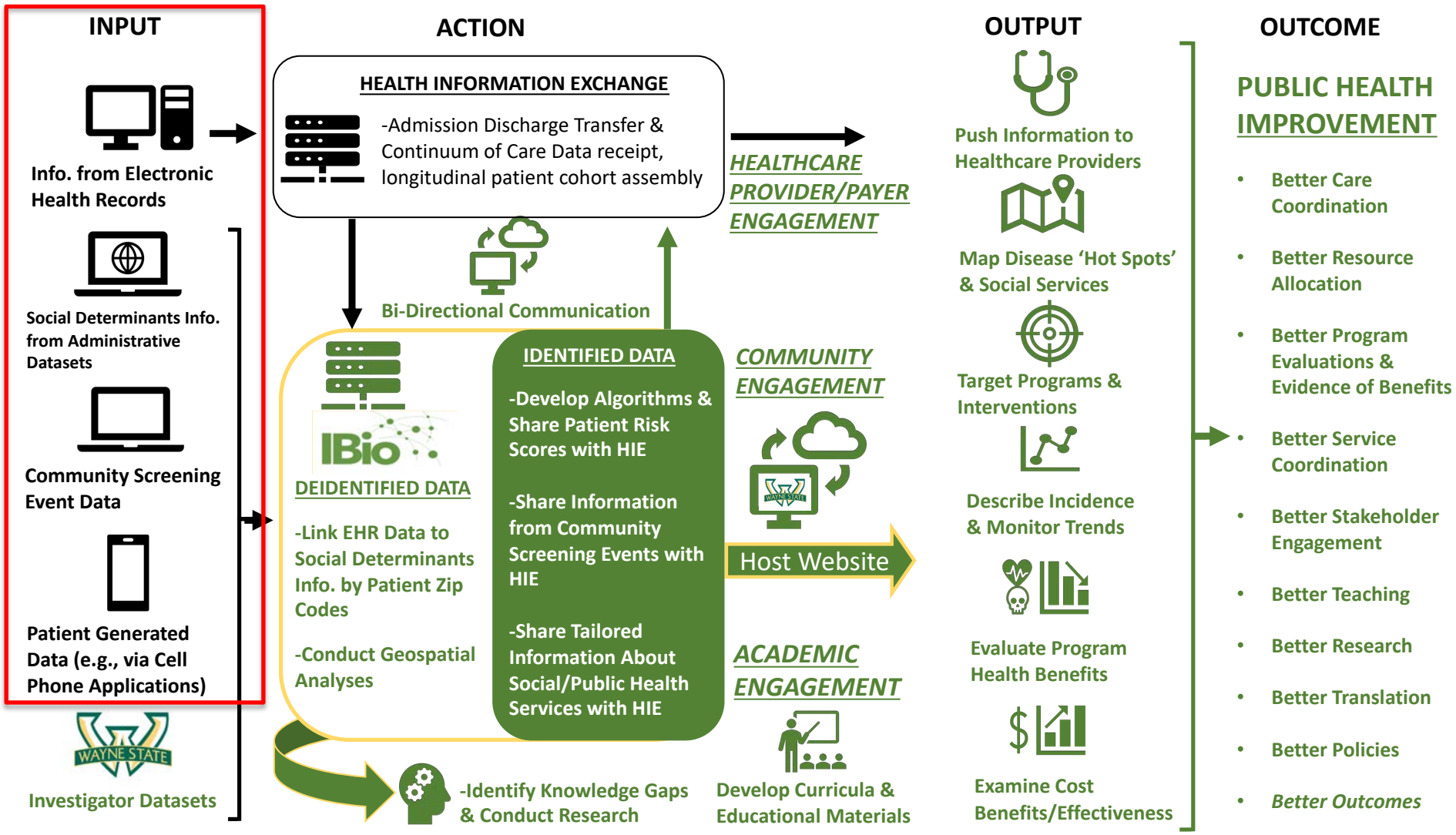
EMR DEMO

username: visitor
password: NewPassword1

We are students, doctors, and engineers

More importantly, we are volunteers. Our mission is to help to provide the best healthcare possible to people who are often without access to life's basic necessities.


femr
Triage
Medical
Pharmacy
Research
Manager
Admin
A Guest
General Info
First Name *
First Name
Last Name *
Last Name
Phone Number
Phone Number
Address
Address
City*
City Name
Age*
Years
Years
Months
OR
Birth Date
mm/dd/yyyy
OR
infant 0-1
child 2-12
teen 13-17
adult 18-64
elder 65+
Gender *
Male
Female
Patient Photo
Choose File
No file chosen
Vitals
Temperature
°F
Oxygen Saturation
%
Blood Pressure
Systolic
Diastolic
Height
Feet
Inches
Heart Rate
bpm
Weight
lbs
Respirations
bpm
BMI
Weeks Pregnant
Weeks
Glucose
mg/dl
Smoking
Diabetes
Alcohol
+ Chief Complaint
Reset Fields
Submit Patient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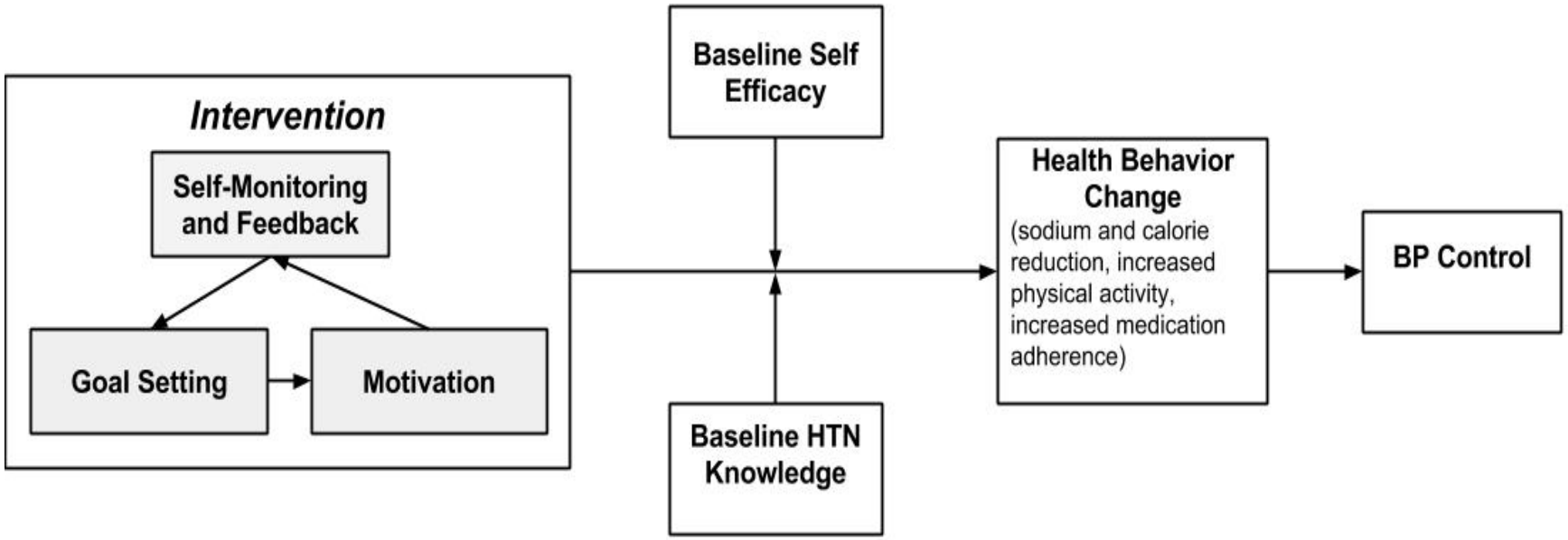
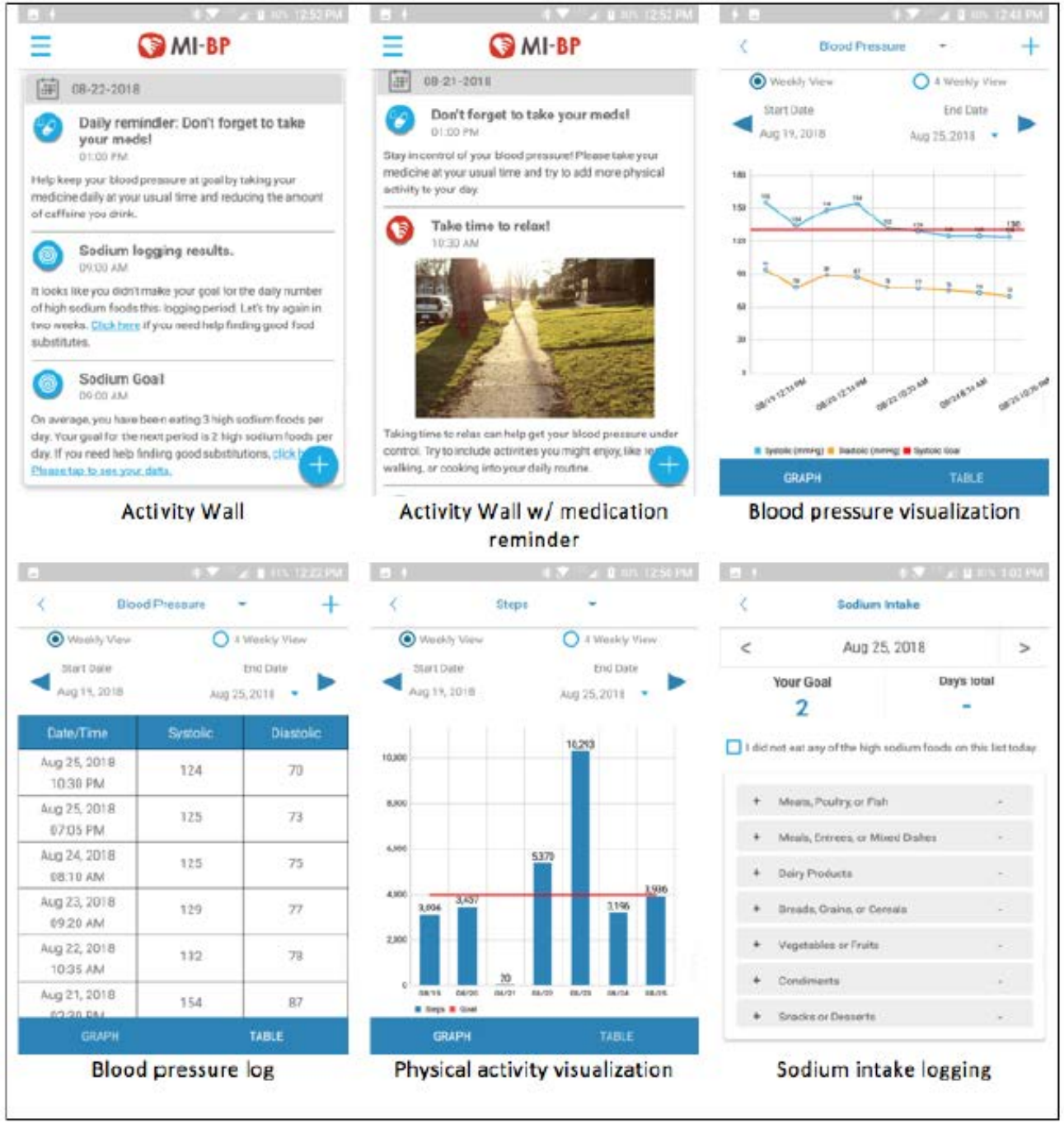
Better Outcomes

Improving Blood Pressure Among African Americans With Hypertension Using a Mobile Health Approach (the MI-BP App): Protocol for a Randomized Controlled Trial

Lorraine R Buis[1], PhD; Katee Dawood[2], BS; Reema Kadri[1], MLIS; Rachelle Dawood[2], BA; Caroline R Richardson[1], MD; Zora Djuric[1], PhD; Ananda Sen[1], PhD; Melissa Plegue[1], MA; David Hutton[3], PhD; Aaron Brody[2], MD, MPH; Candace D McNaughton[4], MD, PhD; Robert Brook[5], MD; Phillip Levy[2], MD, MPH



Buis et al. JMIR Res Protoc. 2019;25:e12601.



Buis et al. JMIR Res Protoc. 2019;25:e12601.

SENSOGRAM TECHNOLOGIES

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Science Technology Innovation

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Wellness at your Fingertips

- Blood Pressure
- Heart Rate
- Oxygen Saturation
- Respiration Rate
- Perfusion
- HRV
- PPG/ABP
- Activity Level
- Location
- Altitude

Future capabilities:

- Cardiac Output • Stroke Volume • Step Count
- Geo-Tracking • AFib • Sleep Score

SENSOGRAM TECHNOLOGIES

Science Technology Innovation

SensoRING®

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BUY NOW

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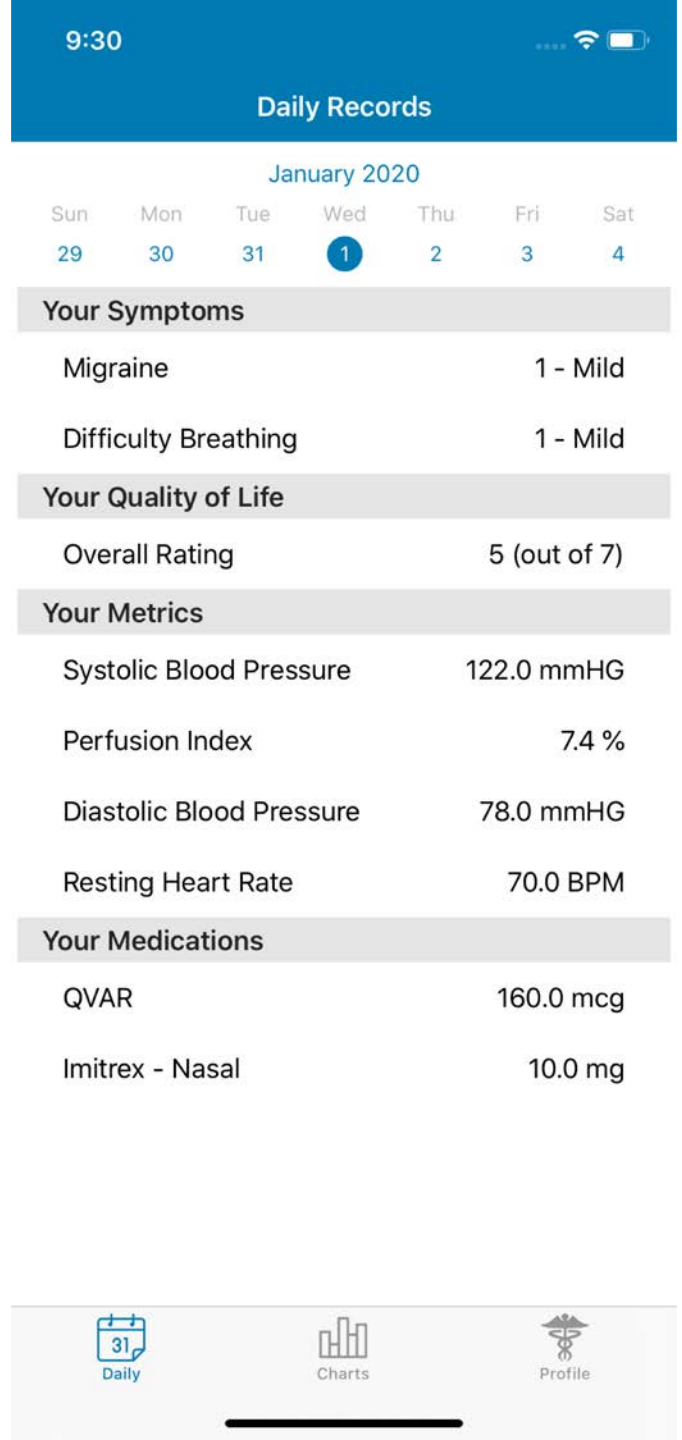
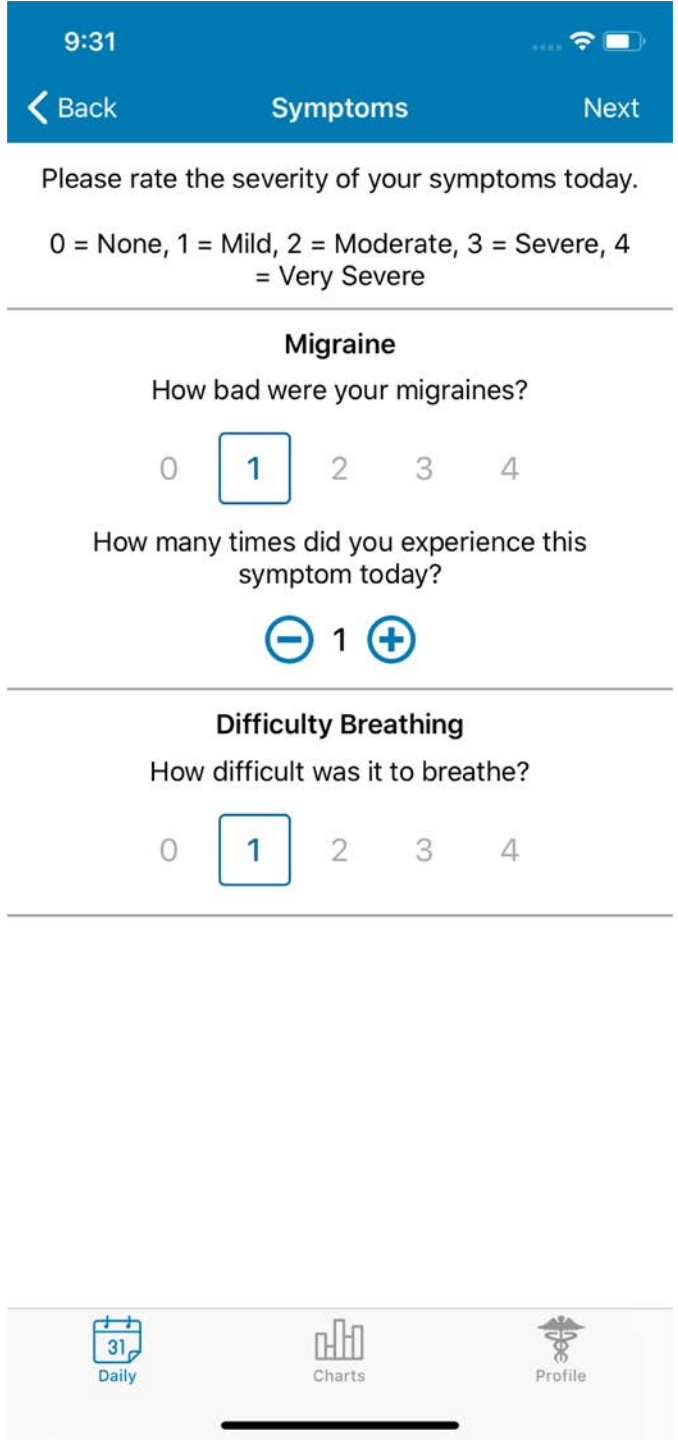

9:30
Daily Records
January 2020
Sun Mon Tue Wed Thu Fri Sat
29 30 31 1 2 3 4
Your Symptoms
Migraine 1 - Mild
Difficulty Breathing 1 - Mild
Your Quality of Life
Overall Rating 5 (out of 7)
Your Metrics
Systolic Blood Pressure 122.0 mmHG
Perfusion Index 7.4 %
Diastolic Blood Pressure 78.0 mmHG
Resting Heart Rate 70.0 BPM
Your Medications
QVAR 160.0 mcg
Imitrex - Nasal 10.0 mg
Daily
Charts
Profile


9:31
Back
Symptoms
Next
Please rate the severity of your symptoms today.
0 = None, 1 = Mild, 2 = Moderate, 3 = Severe, 4 = Very Severe
Migraine
How bad were your migraines?
0 1 2 3 4
How many times did you experience this symptom today?
1
Difficulty Breathing
How difficult was it to breathe?
0 1 2 3 4
Daily
Charts
Profile

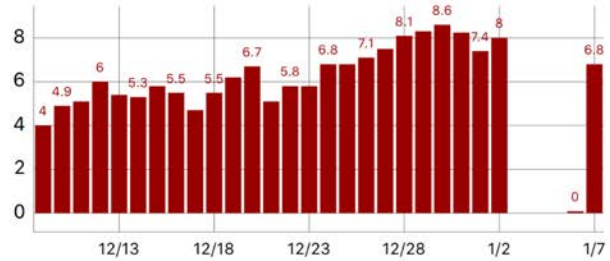

9:31
Back
Overall
Next
How would you rate your overall quality of life today?
1 = Very Poor, 7 = Excellent
1 2 3 4 5 6 7
Daily
Charts
Profile

9:32

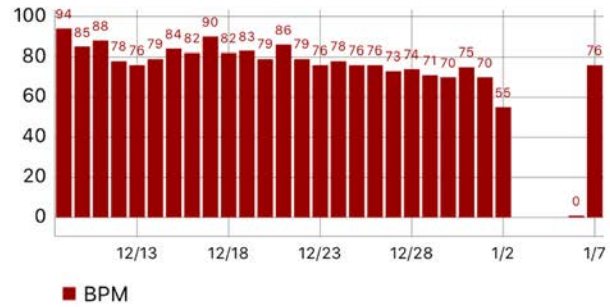
Charts 30 Days

Comparisons | Medications | Symptoms | Metrics

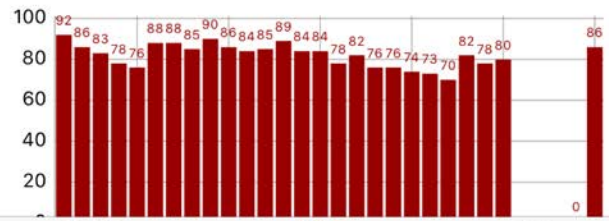
Perfusion Index



Resting Heart Rate



Diastolic Blood Pressure



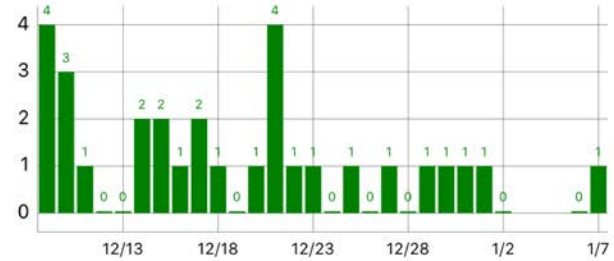
Daily | Charts | Profile

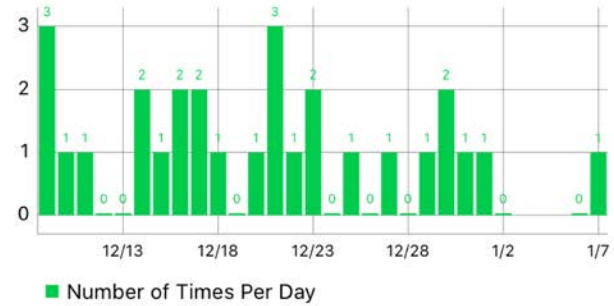
9:32

Charts 30 Days

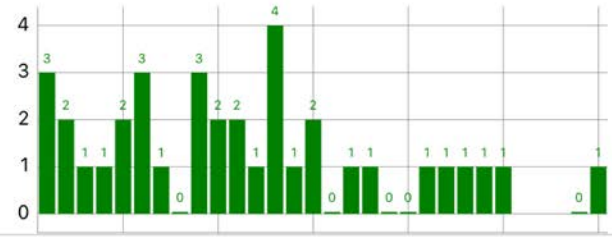
Comparisons | Medications | Symptoms | Metrics

Migraine





Difficulty Breathing



Daily | Charts | Profile

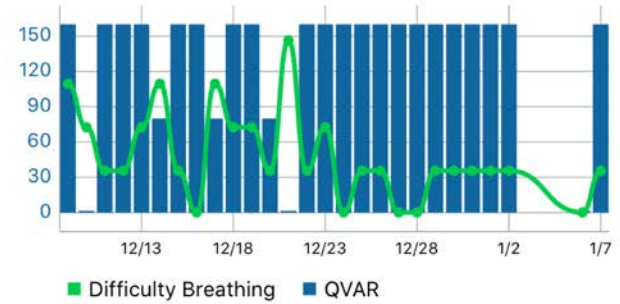
9:32

Charts 30 Days

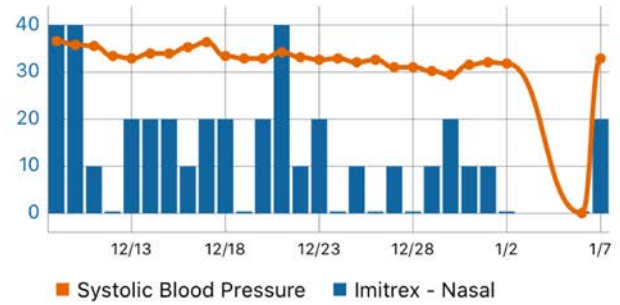
Comparisons | Medications | Symptoms | Metrics

+ New Comparison

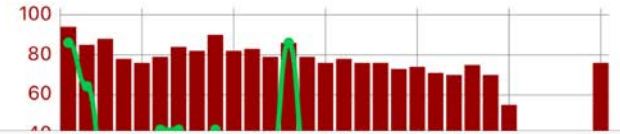
QVAR vs. Difficulty Breathing



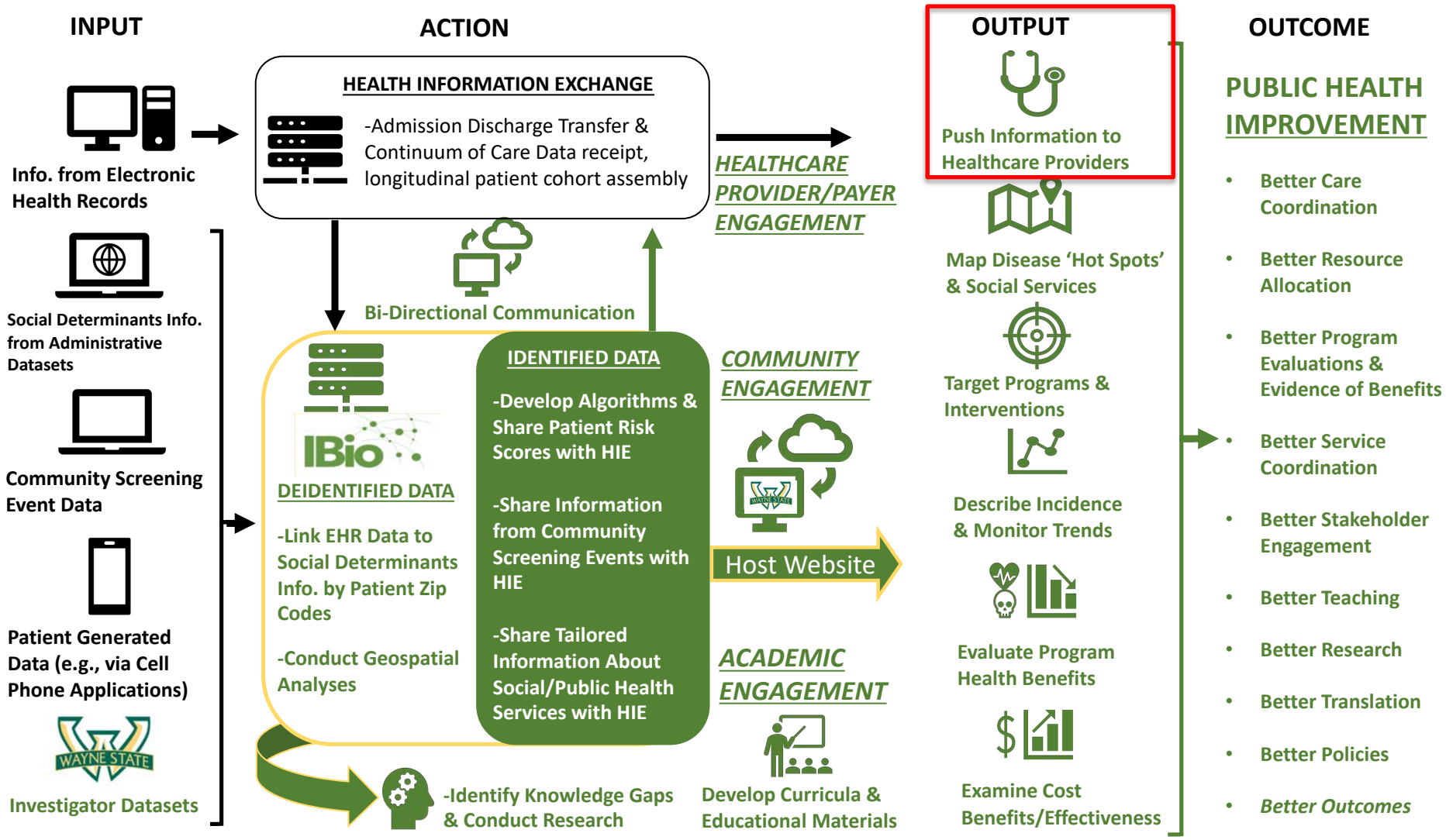
Imitrex - Nasal vs. Systolic Blood Pressure



Resting Heart Rate vs. Migraine



Daily | Charts | Profile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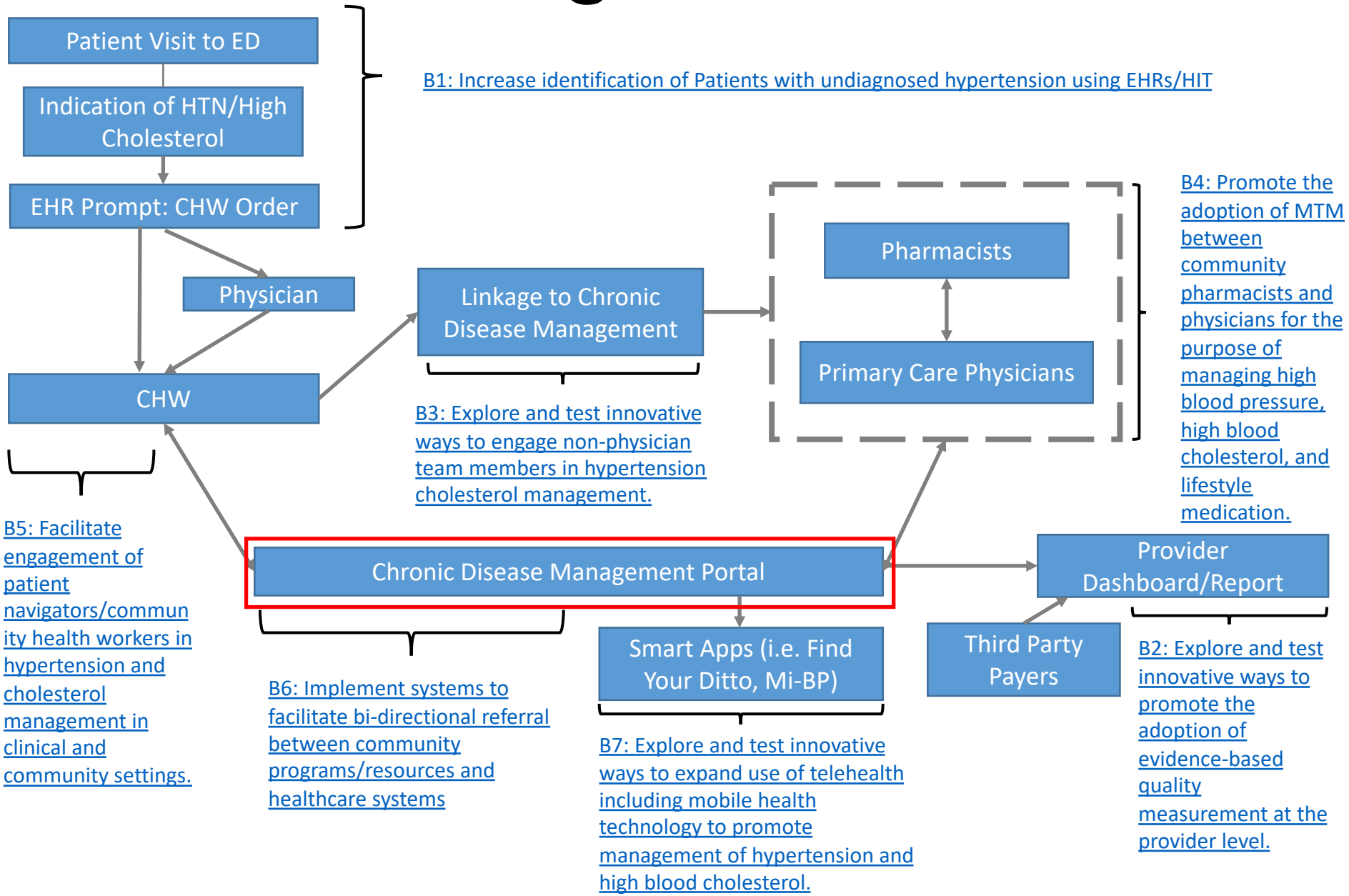
Bring It Down



Oluwaseyi Donald

Dr. Mifflin

MRN: 12345678 **AGE:** 54 **EMPLOYER:** General Motors **ROLE:** Manufacturing - Welding **LOCATION:** Detroit, Michigan

	Prior BP	Current BP	Next Visit BP	ASCVD Target BP
SYS	156	↑ 155	↓ 148	117
DIA	95	95	82	77
Pulse	80	74	70	22

SOCIAL DETERMINANTS OF HEALTH

- **Economic Stability:** Fair
- **Livability:** Above Standard
- **Education:** Below Regional Standards
- **Food Access:** No 'healthy' options within 5 mi

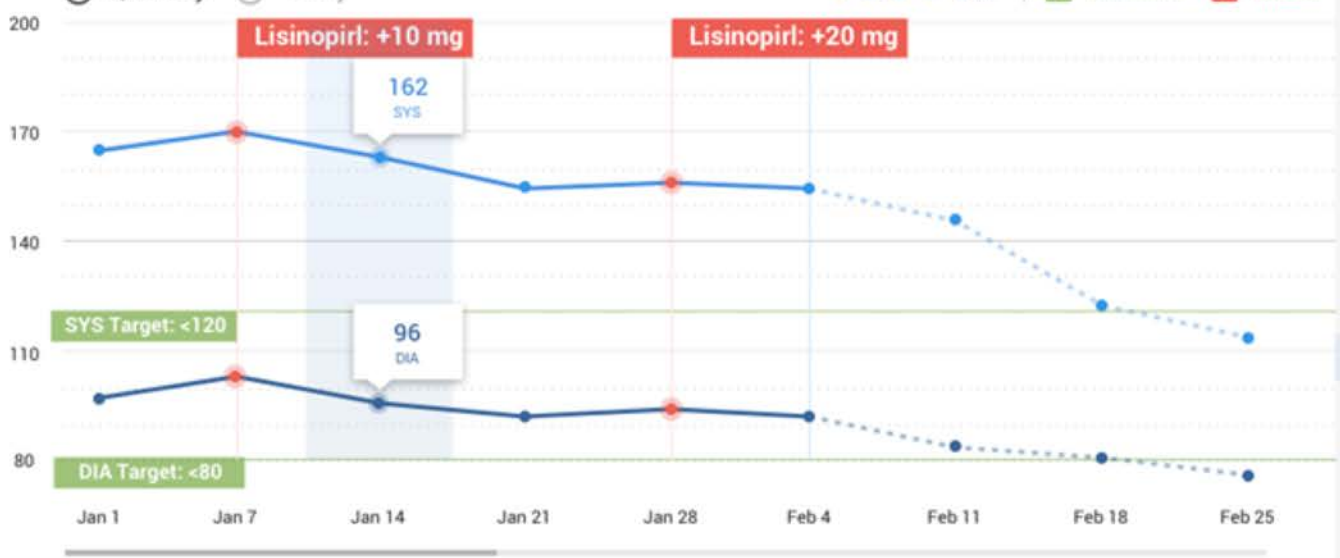
BEHAVIORAL RISKS

- [x] Low Physical Activity
- [x] Poor diet adherence
- [ ] Missed medical encounters
- [ ] Alcohol Risk

TRENDS OVERTIME

Blood Pressure | Pulse | Therapeutic Intensity

Quarterly / Yearly — SYS • DIA — TARGETS — MEDS



ORDER HISTORY

All Orders

Orders	Date	BP
Lab Results	01/07/2019	165/99
Lisinopirl	01/07/2019	170/104
Nutritionist	01/14/2019 @ 11...	162/96
Excercise	01/21/2019	155/92
Lisinopirl	01/28/2019	156/95
Support Group	02/04/2019 @ 3...	155/95
Support Group	02/11/2019 @ 3...	---

VALUE	RESULTS
Blood Urea Nitrogen	20 mg/dL
Glucose	102 mg/dL
Creatinine	1.3 mg/dL
Urine Albumin/Creatinine	30 mg/L

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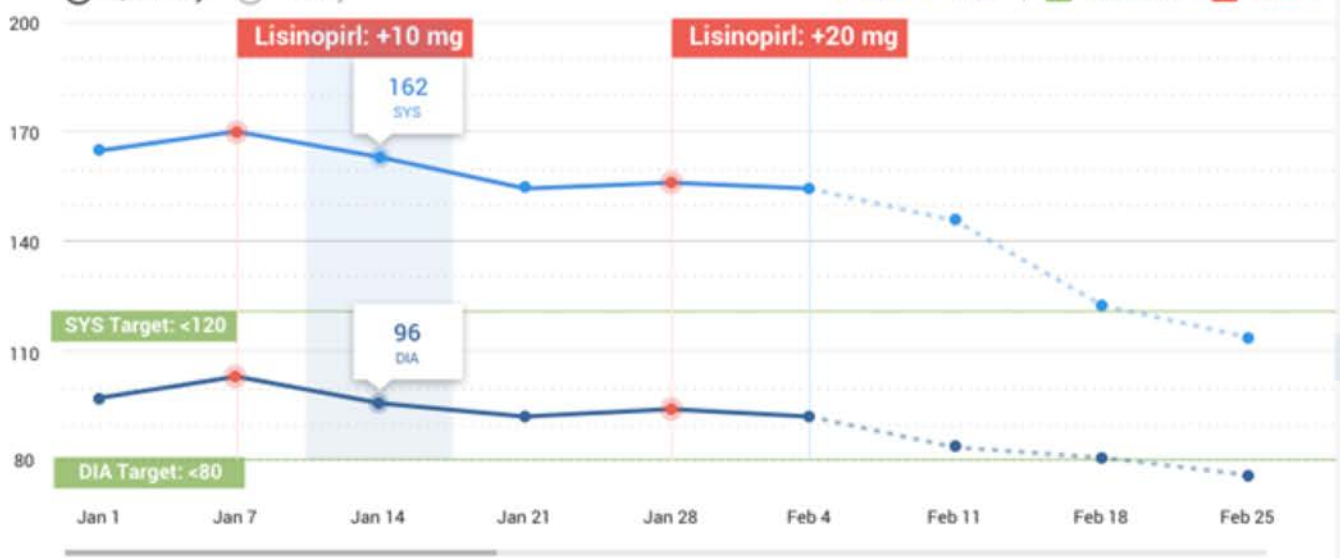

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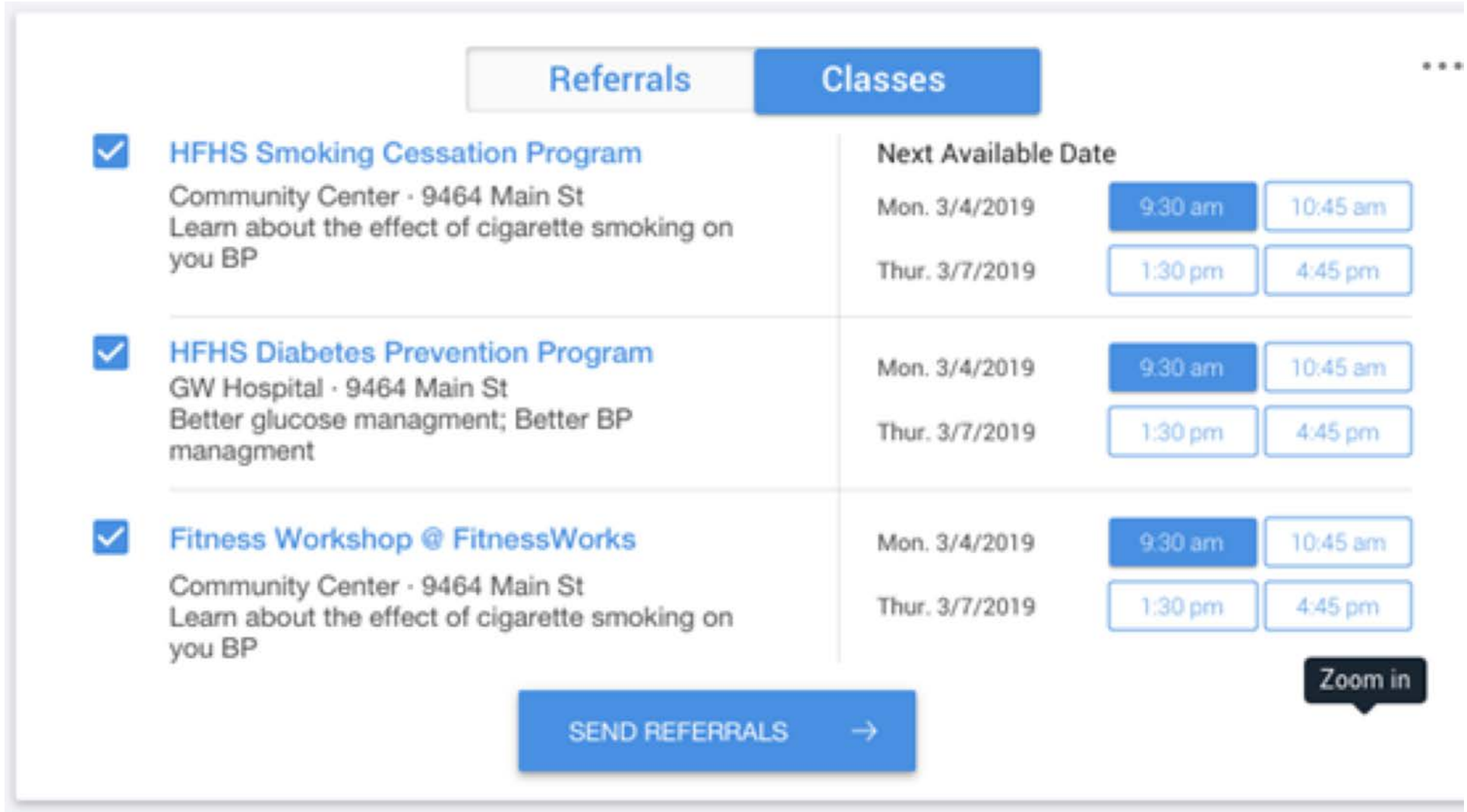

Referrals
Classes
HFHS Smoking Cessation Program
Community Center · 9464 Main St
Learn about the effect of cigarette smoking on you BP
Next Available Date
Mon. 3/4/2019
9:30 am
10:45 am
Thur. 3/7/2019
1:30 pm
4:45 pm
HFHS Diabetes Prevention Program
GW Hospital · 9464 Main St
Better glucose managment; Better BP managment
Mon. 3/4/2019
9:30 am
10:45 am
Thur. 3/7/2019
1:30 pm
4:45 pm
Fitness Workshop @ FitnessWorks
Community Center · 9464 Main St
Learn about the effect of cigarette smoking on you BP
Mon. 3/4/2019
9:30 am
10:45 am
Thur. 3/7/2019
1:30 pm
4:45 pm
Zoom in
SEND REFERRALS

PATIENT INSIGHT

ASCVD RISK SCORE

Total Risk Score

17.0%

High Risk

ASCVD Risk Today

Smoker	Former
On HTN Rx	YES
On Statin	YES
On Aspirin	YES
Diabetic	NO
SBP	141

SHOW MORE

RISK REDUCTION ADVICE

- **BP:** For stage 2 HTN, initiation/titration of antihypertensive drug therapy (with 2 agents of different classes) in combination with nonpharmacological therapy is recommended
- **LDL-C:** Moderate intensity statin is recommended if decided upon as part of a clinician-patient discussion
- **Diet:** Sodium reduction is recommended with consumption of no more than 2,400 mg of sodium daily, and reduction to 1,5000 mg/day can result in even greater BP reduction

RECOMMENDATIONS AND TREATMENT PLAN

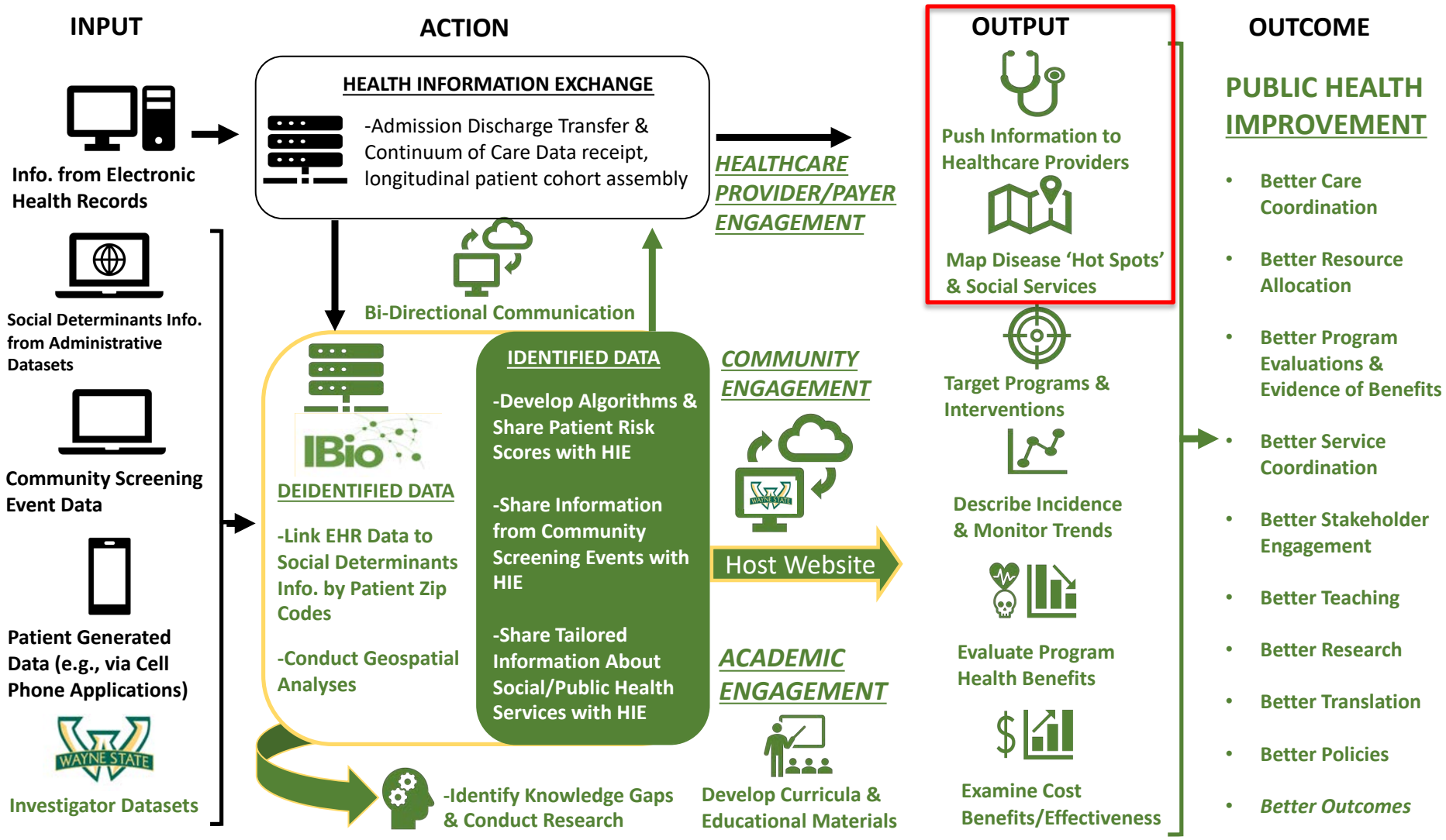
Medication	Dosage	Date	Source	Order Status
☑ Norvasc	↑ 5 mg	02/04/2019	PCP	• PAST DUE
☑ Lisinopirl	↑ 40 mg	02/04/2019	STS	• ORDERED

Recommended Diet/Nutrition

		Hypertension EST. IMPACT ON SBP	Normotension EST. IMPACT ON SBP
☑ DASH Diet	Consume a diet rich in fruits, vegetables, whole grains, and low-fat dairy products, with reduced...	-11 mm Hg	-3 mm Hg
☐ Dietary Sodium	Optimal goal is <1500 mg/d, but aim for at least a 1000-mg/d reduction in most adults.	-5/6 mm Hg	-2/3 mm Hg
☐ Dietary Potassium	Aim for 3500–5000 mg/d, preferably by consumption of a diet rich in potassium.	-4/5 mm Hg	-2 mm Hg

Physical Activity

		Hypertension EST. IMPACT ON SBP	Normotension EST. IMPACT ON SBP
☑ Aerobic	• 90–150 min/wk • 65%–75% heart rate reserve	-5/8 mm Hg	-2/4 mm Hg
☐ Dynamic Resistance	• 90–150 min/wk • 50%–80% 1 rep maximum • 6 exercises, 3 sets/exercise, 10 repetitions/set.	-4 mm Hg	-2 mm Hg
☐ Isometric Resis...	• 4 × 2 min (hand grip), 1 min rest between exercises, 30%–40% maximum voluntary contraction, 3 sessions/wk	-5 mm Hg	-4 mm Hg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WISEWOMAN Home

About WISEWOMAN

Services

Locations

Success Stories +

Resources +

FAQs

Related CDC Web Sites

Heart Disease & Stroke Prevention

WISEWOMAN Overview

The WISEWOMAN (**W**ell-**I**ntegrated **S**creening and **E**valuation for **WOM**en **A**cross the **N**ation) program serves low-income, uninsured, and underinsured women ages 40 to 64 years, with heart disease and stroke risk factor screenings and services that promote healthy behaviors to reduce the risk for heart disease and stroke. This program funds 24 awardees in 21 state health departments and 3 tribal organizations. For the first time, CDC has included an innovation component awarded to a subset of awardees that receive core funding to support the implementation and evaluation of a small set of innovative strategies designed to reduce risks, complications, and barriers to the prevention and control of heart disease and stroke.

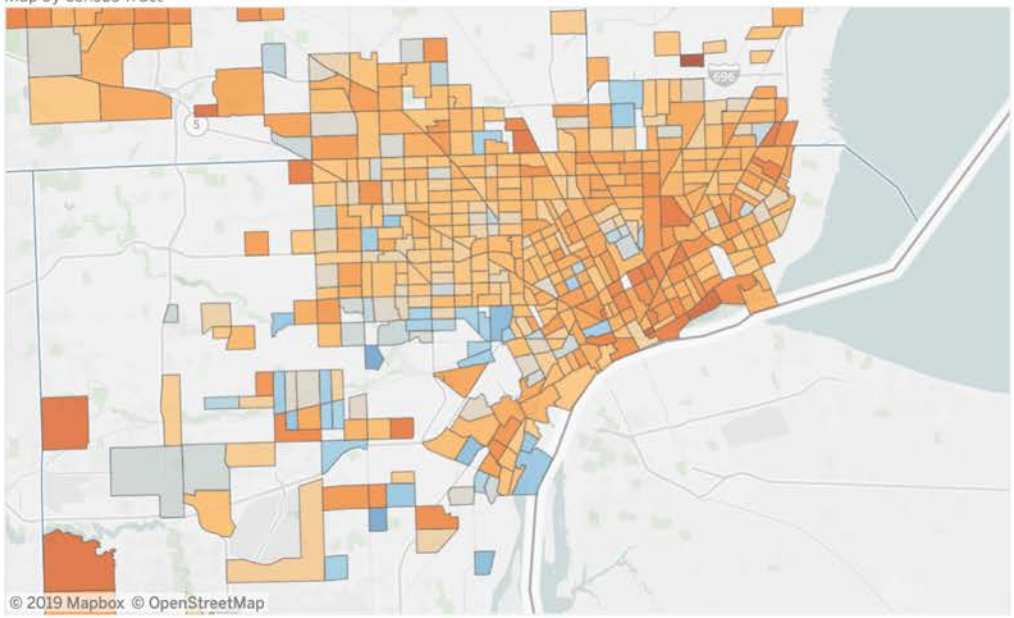
Administered through CDC's Division for Heart Disease and Stroke Prevention (DHDSP), the WISEWOMAN program operates in states and tribal organizations that participate in the National Breast and Cervical Cancer Early Detection Program (NBCCEDP), which helps ensure women participating in the NBCCEDP receive a full range of health services.

The WISEWOMAN program serves low-income, uninsured, and underinsured women aged 40 to 64 years.

Hypertension Dashboard Metro-Detroit (Wayne, Oakland, Macomb, and Livingston Counties)

Select a Vital Category to Explore: Systolic Blood Pressure (Mean)

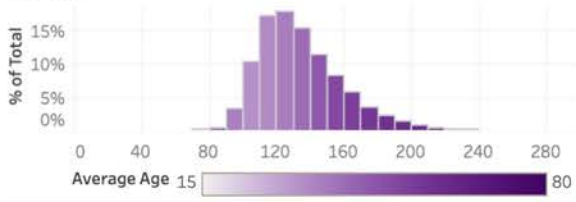
Map by Census Tract



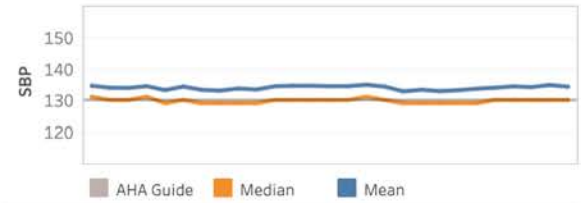
Set map legend midpoint as: AHA Guideline (Midpoint: 130)

121 151

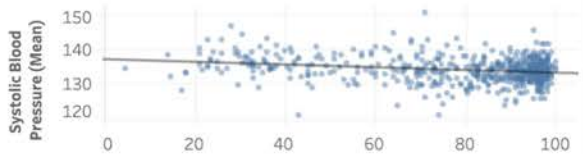
Histogram



Timeline Chart



Scatterplot



Compare to: ADI National Ranking (Median rank of block gr...

Filter Data:

Select County: ALL COUNTIES

Select City: ALL CITIES

Date of Arrival
Dec 2016-Feb 2019
(All)

Gender: Female
- (All)
- Null
- ☑ Female
- Male
- Unknown

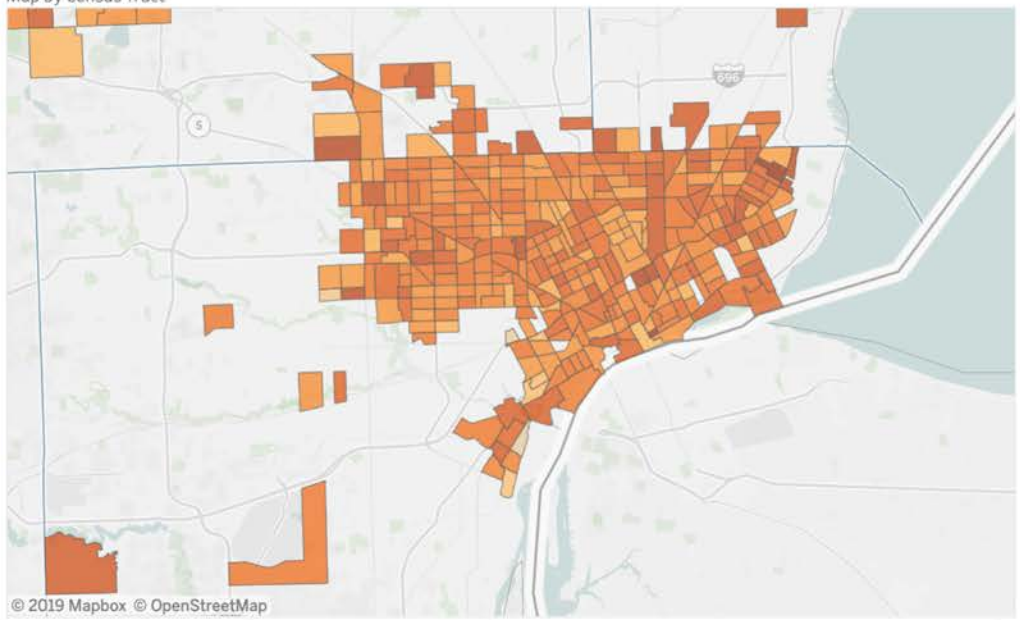
Race/Ethnicity
- ☑ (All)
- ☑ Black/African American
- ☑ Other Race or More th...
- ☑ Spanish/Hispanic
- ☑ Unknown
- ☑ White

Race/Ethnicity	Number of Records	Mean SBP	Mean DBP	Mean HR	Mean Age	Mean Temp	% of Total
Black/African American	237,485	133.77	81.21	89.73	40	36.79	77.84%
White	42,788	134.24	79.36	90.59	46	36.73	14.03%
Other Race or More than On..	16,748	134.94	80.64	88.40	47	36.76	5.49%
Unknown	5,233	133.07	80.33	89.96	42	36.78	1.72%
Spanish/Hispanic	2,821	131.50	80.18	90.38	40	36.75	0.92%
Grand Total	**305,075**	**133.87**	**80.90**	**89.79**	**42**	**36.78**	**100.00%**

Hypertension Dashboard Metro-Detroit (Wayne, Oakland, Macomb, and Livingston Counties)

Select a Vital Category to Explore: Systolic Blood Pressure (Mean)

Map by Census Tract



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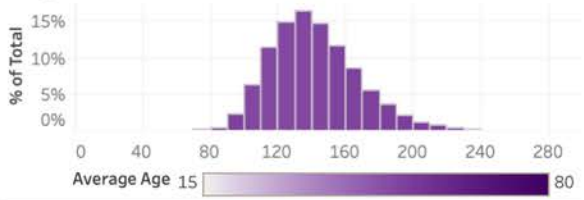
131 — 155

Histogram



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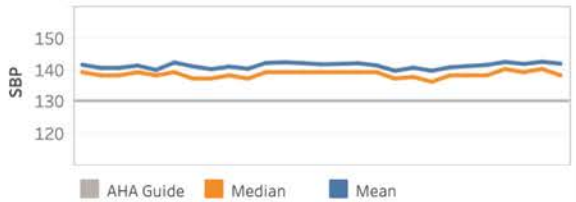
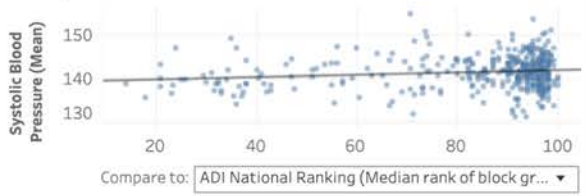


Scatterplot



Compare to: ADI National Ranking (Median rank of block gr...

Filter Data:

Select County: ALL COUNTIES

Select City: ALL CITIES

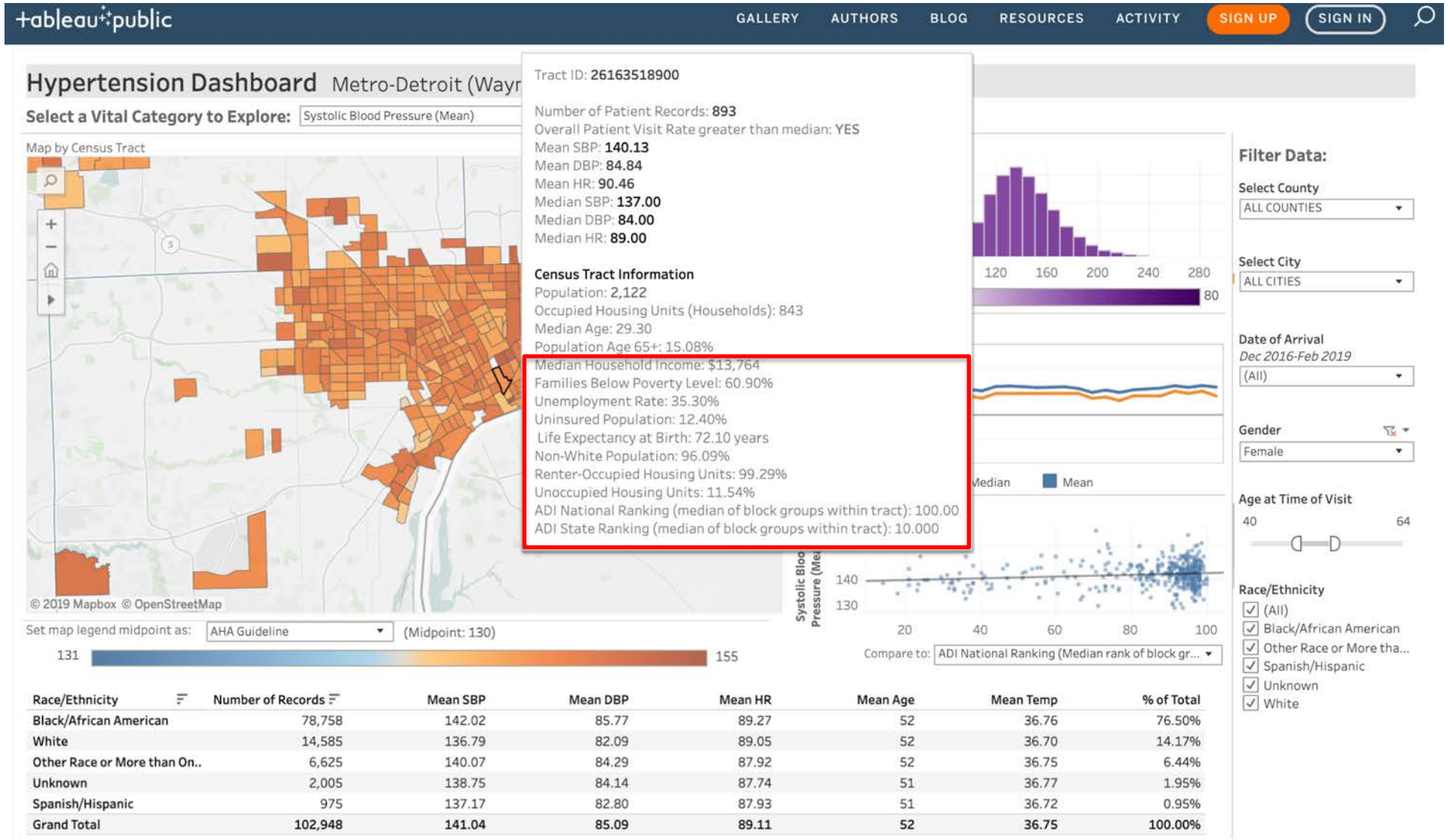
Date of Arrival
Dec 2016-Feb 2019
(All)

Gender: Female

Age at Time of Visit: 40 — 64

Race/Ethnicity
- [x] (All)
- [x] Black/African American
- [x] Other Race or More tha...
- [x] Spanish/Hispanic
- [x] Unknown
- [x] White

Race/Ethnicity	Number of Records	Mean SBP	Mean DBP	Mean HR	Mean Age	Mean Temp	% of Total
Black/African American	78,758	142.02	85.77	89.27	52	36.76	76.50%
White	14,585	136.79	82.09	89.05	52	36.70	14.17%
Other Race or More than On..	6,625	140.07	84.29	87.92	52	36.75	6.44%
Unknown	2,005	138.75	84.14	87.74	51	36.77	1.95%
Spanish/Hispanic	975	137.17	82.80	87.93	51	36.72	0.95%
Grand Total	**102,948**	**141.04**	**85.09**	**89.11**	**52**	**36.75**	**100.00%**



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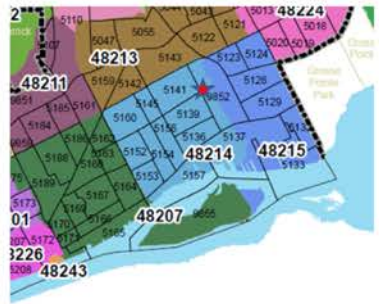
Grand Total	**102,948**	**141.04**	**85.09**	**89.11**	**52**	**36.75**	**100.00%**

Census Tract 5141, Detroit
Lat: 42.3798303, Lon:-82.9893988
Square miles: 0.62148509
With a radius around 715.8 meters



Detroit Zip Codes and 2010 Census Tracts

Extraction: pois_from_point([lat,lon], radius)
Return with different radius values

radius = 500

parking	6
place_of_worship	5
school	2
ice_cream	1
doctors	1

radius = 715.8

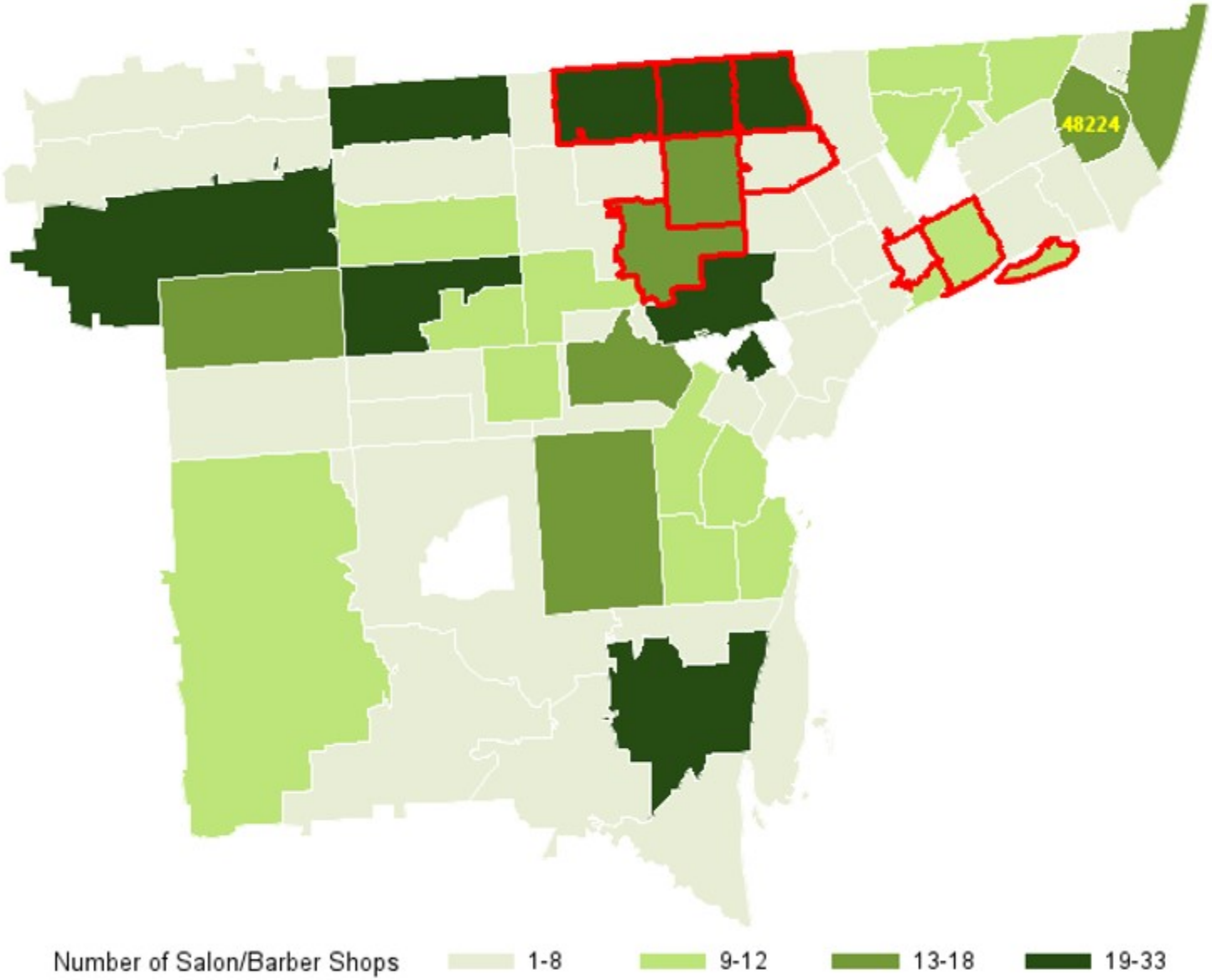
parking	18
place_of_worship	8
school	4
fuel	1
ice_cream	1
doctors	1
bus_station	1
marketplace	1

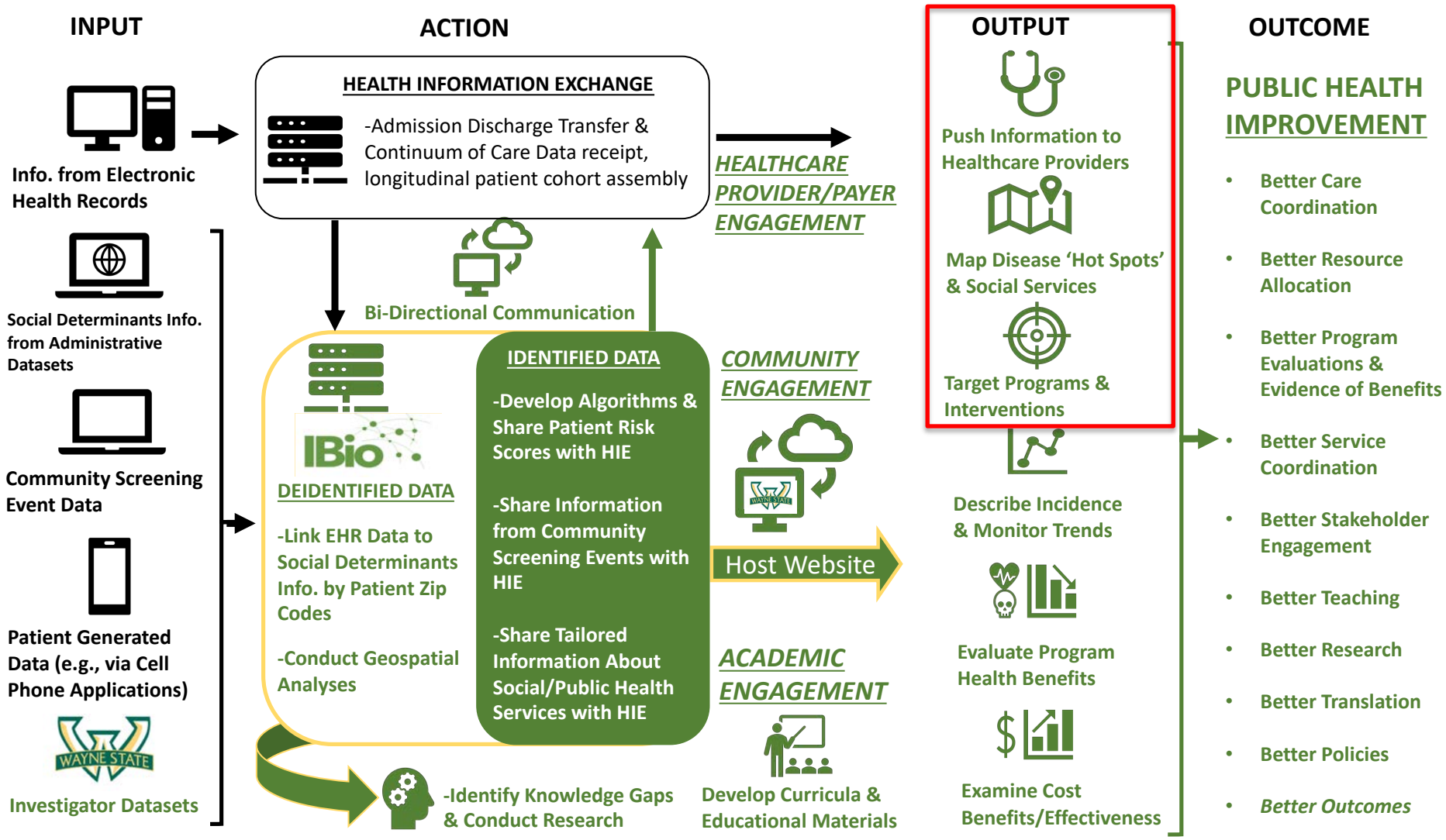
radius = 1500

parking	97
place_of_worship	34
school	22
fast_food	4
social_facility	3
restaurant	2
fire_station	2
marketplace	1
bench	1
fuel	1
ice_cream	1
doctors	1
bus_station	1
car_wash	1
college	1

Number of Salons/Barber Shops by Zip Code, Wayne County

[Red Outlined Zip Codes Had 1,163 (90th centile) or more Stage 2 Hypertension ED Encounters, Nov. 2017 through July 2019]

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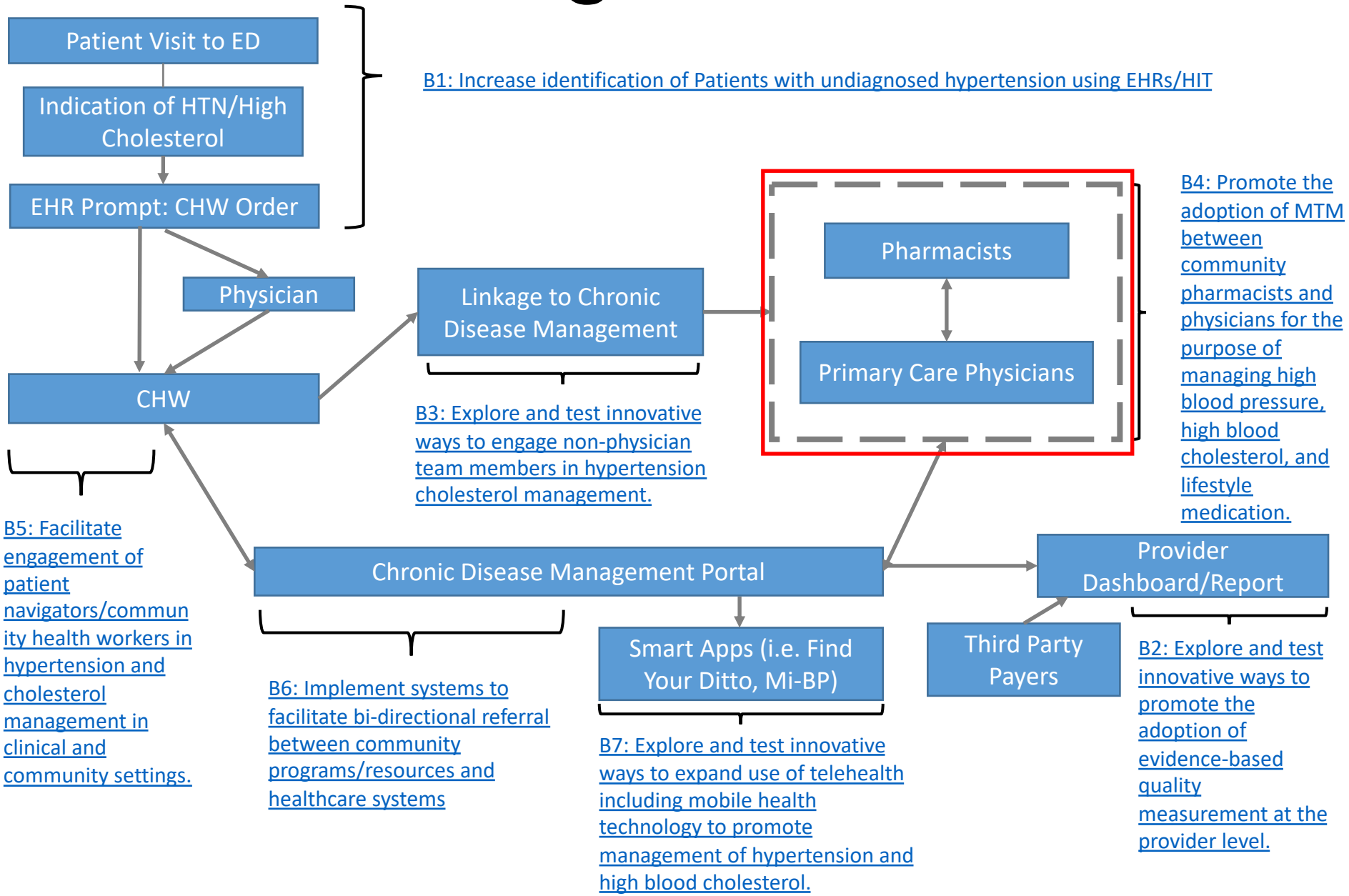
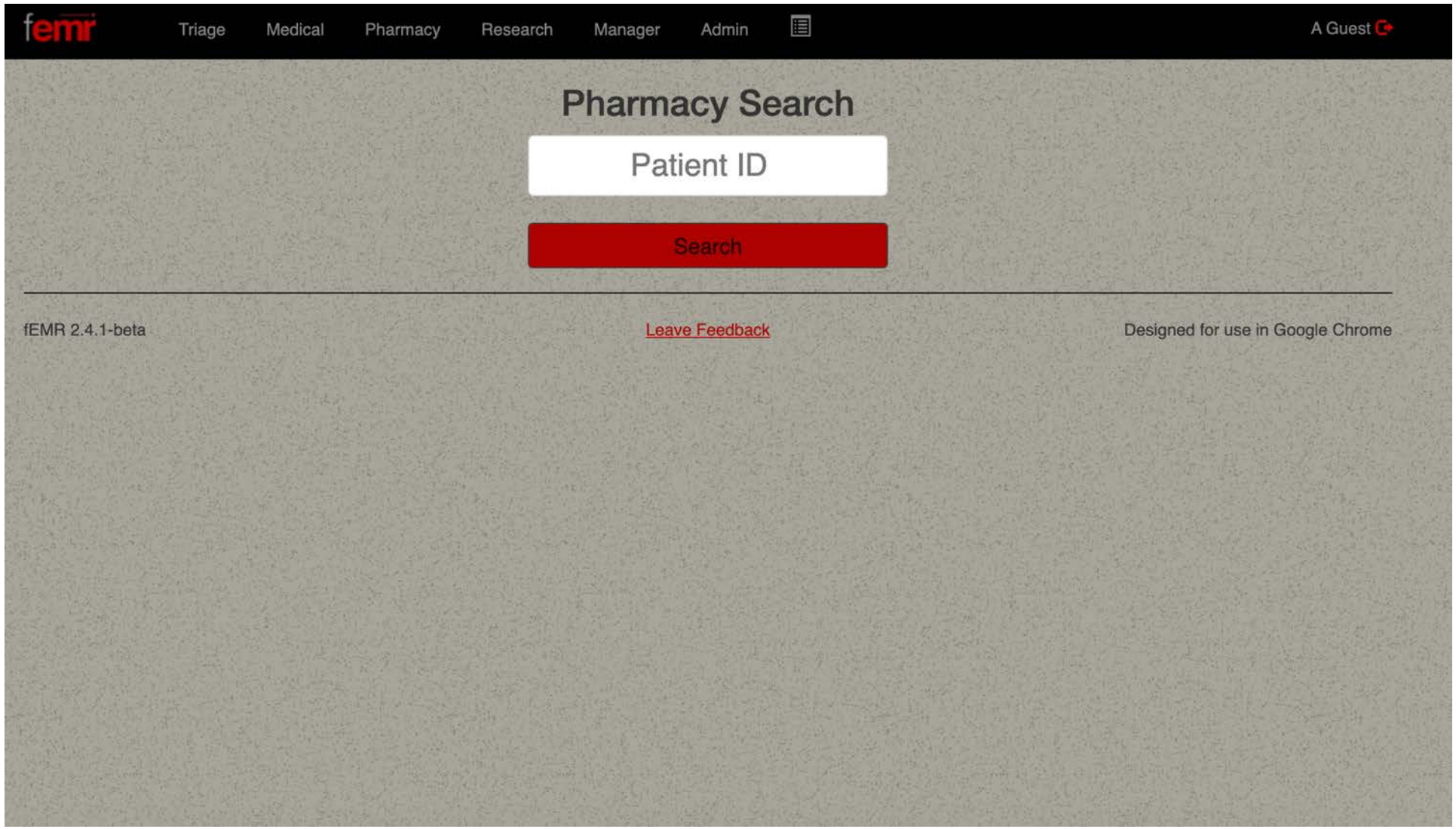
Bring It Down



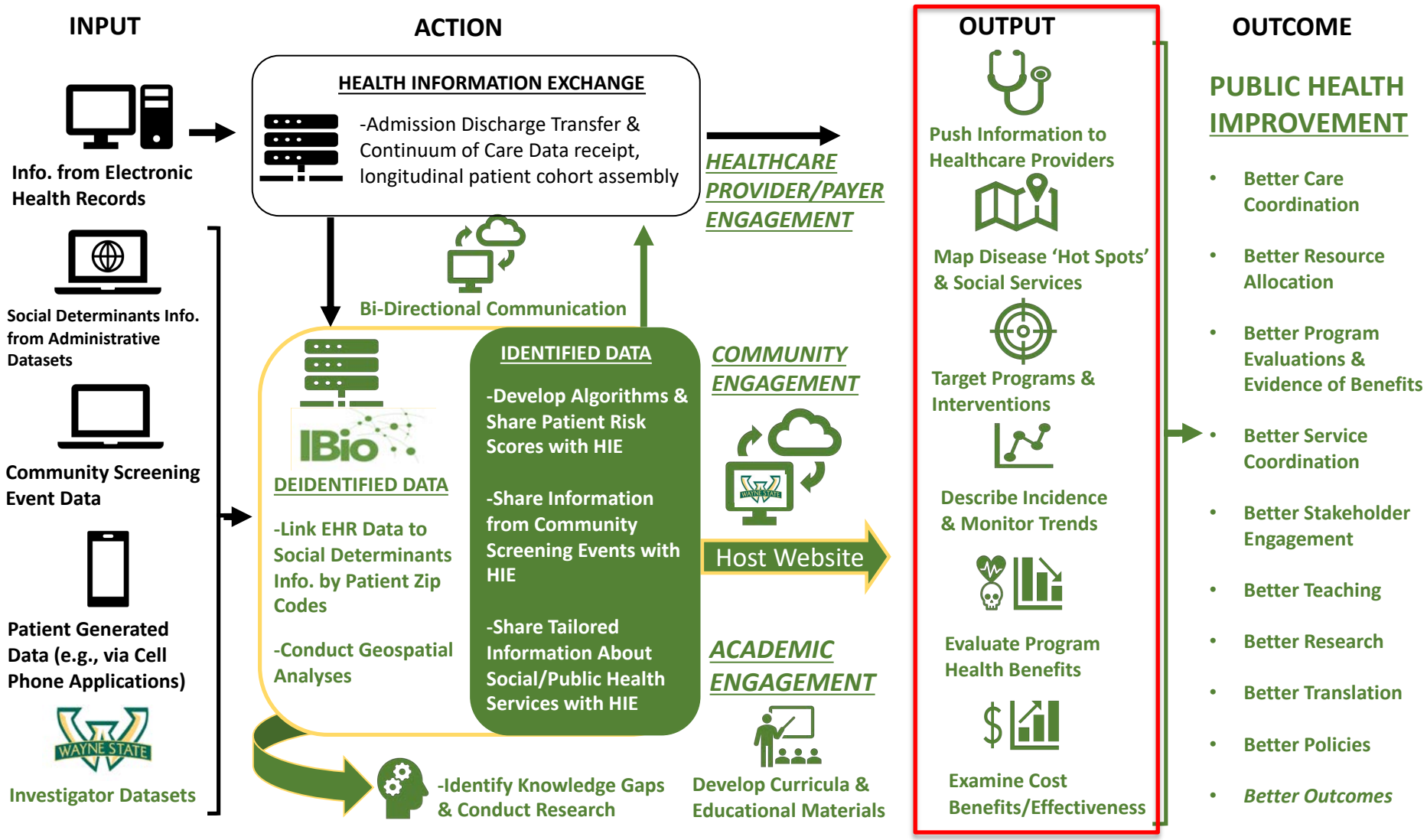

femr
Triage
Medical
Pharmacy
Research
Manager
Admin
A Guest
Pharmacy Search
Patient ID
Search
fEMR 2.4.1-beta
Leave Feedback
Designed for use in Google Chrome

Chronic Care Management

Billing Code	Approx. Reimbursement	Clinical staff time	Billing practitioner requirements
Non complex CCM CPT 99490 CPT 99491 - For providers	$43 $74	20 min. +	Ongoing oversight, direction, and management
Complex CCM CPT 99487	$94	60 min.	Above, plus medical decision-making of moderate-high complexity
Add-on to complex CCM CPT 99489	$47	Each additional 30 min.	See above Must be used with 99487
Add-on to initiating visit HCPCS G0506	$64	N/A	Extensive assessment and CCM care planning beyond usual effort

Remote Patient Monitoring

Billing Code	Approx. Reimbursement	Clinical staff time	Billing practitioner requirements
99453	$21	N/A	Initial set-up and education on the use of monitoring equipment
99454	$69 May be billed every 30 d	N/A	Monitoring the daily recording(s) or programmed alert(s) transmission
99457	$54 May be billed every 30 d	20 min. +	Interactive communication with the patient/caregiver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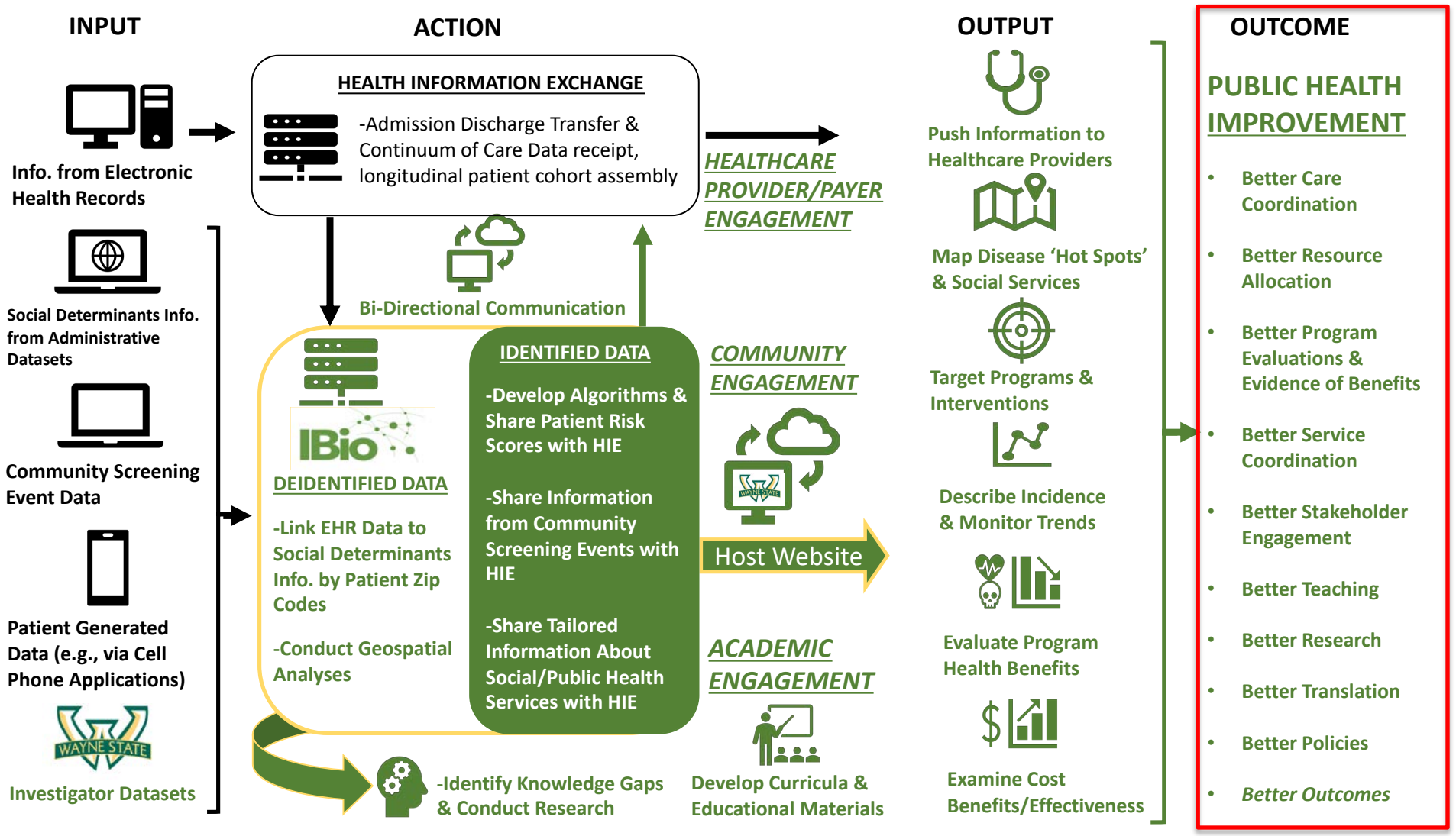
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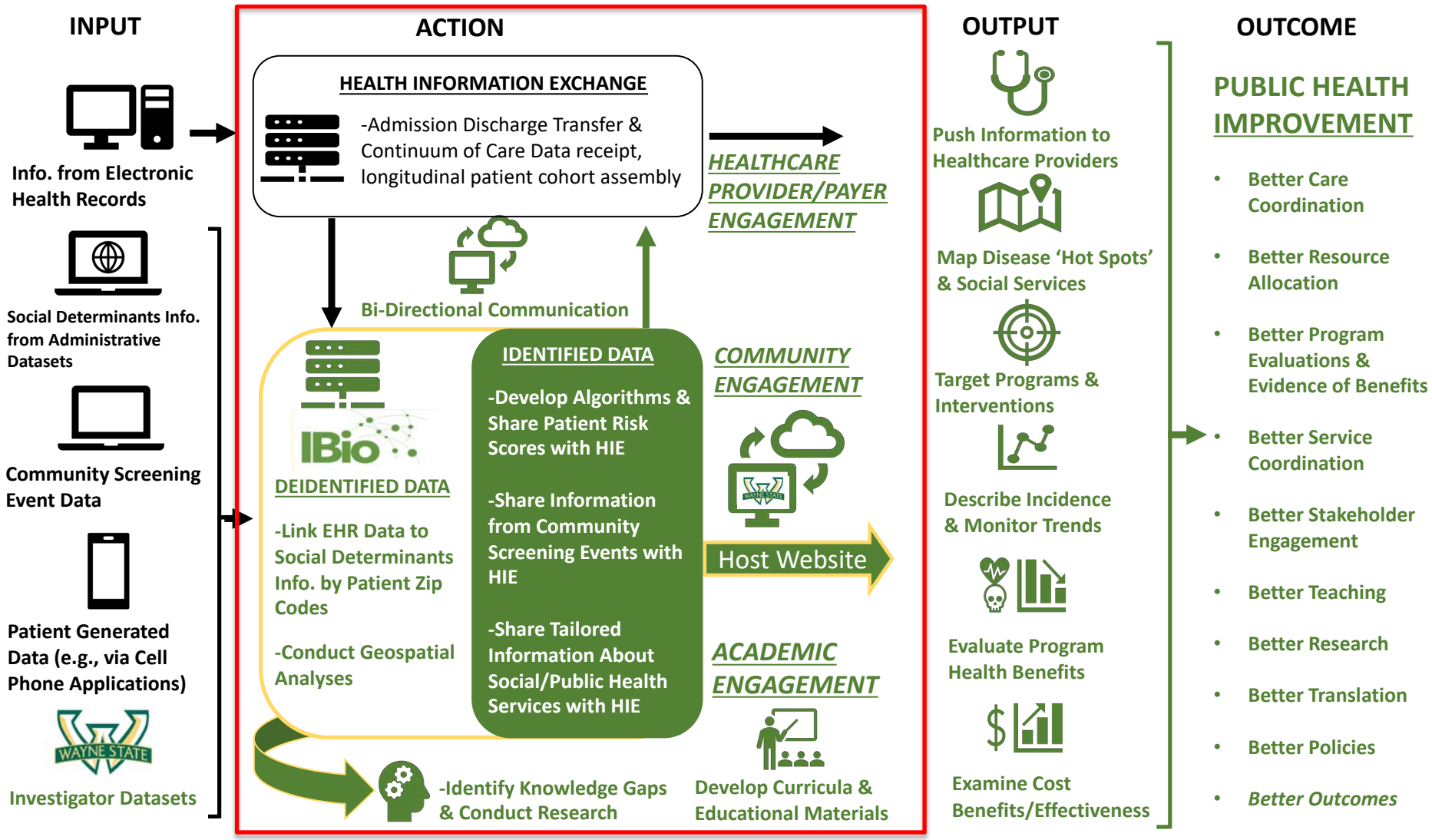
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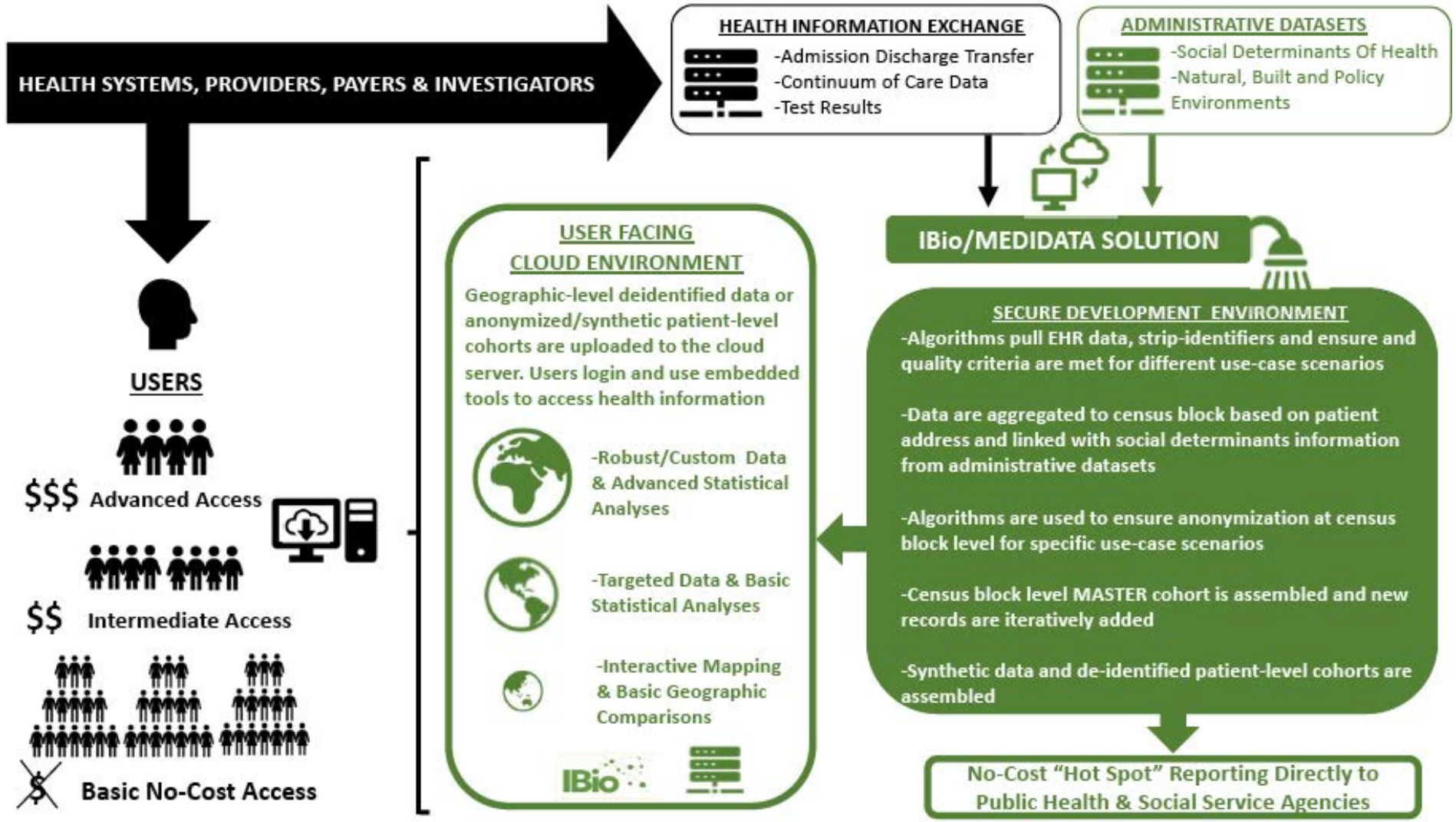
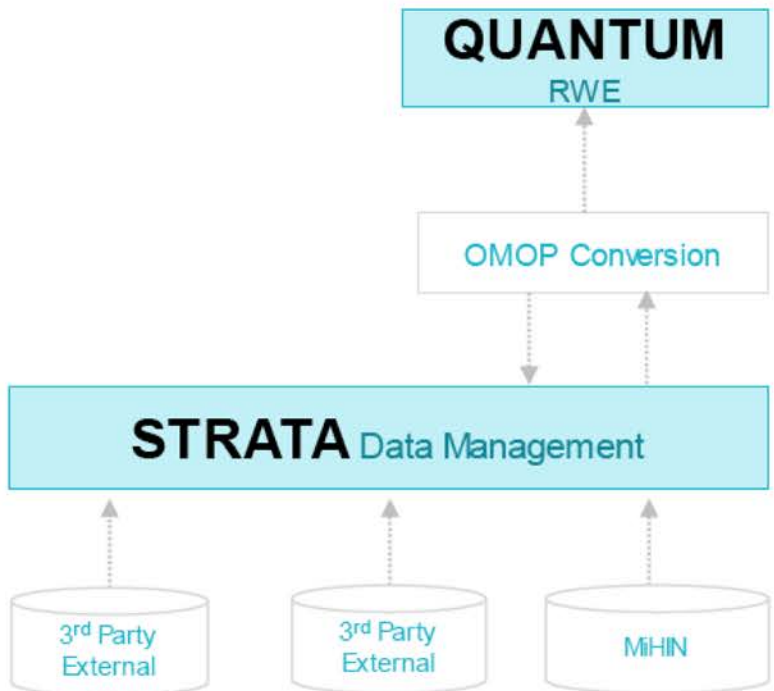

HEALTH SYSTEMS, PROVIDERS, PAYERS & INVESTIGATORS
HEALTH INFORMATION EXCHANGE
-Admission Discharge Transfer
-Continuum of Care Data
-Test Results
ADMINISTRATIVE DATASETS
-Social Determinants Of Health
-Natural, Built and Policy Environments
IBio/MEDIDATA SOLUTION
SECURE DEVELOPMENT ENVIRONMENT
-Algorithms pull EHR data, strip-identifiers and ensure and quality criteria are met for different use-case scenarios
-Data are aggregated to census block based on patient address and linked with social determinants information from administrative datasets
-Algorithms are used to ensure anonymization at census block level for specific use-case scenarios
-Census block level MASTER cohort is assembled and new records are iteratively added
-Synthetic data and de-identified patient-level cohorts are assembled
No-Cost "Hot Spot" Reporting Directly to Public Health & Social Service Agencies
USER FACING CLOUD ENVIRONMENT
Geographic-level deidentified data or anonymized/synthetic patient-level cohorts are uploaded to the cloud server. Users login and use embedded tools to access health information
-Robust/Custom Data & Advanced Statistical Analyses
-Targeted Data & Basic Statistical Analyses
-Interactive Mapping & Basic Geographic Comparisons
IBio
USERS
$$$ Advanced Access
$$ Intermediate Access
Basic No-Cost Access

PHOENIX PLATFORM

Proposed Framework: Priority Use-cases

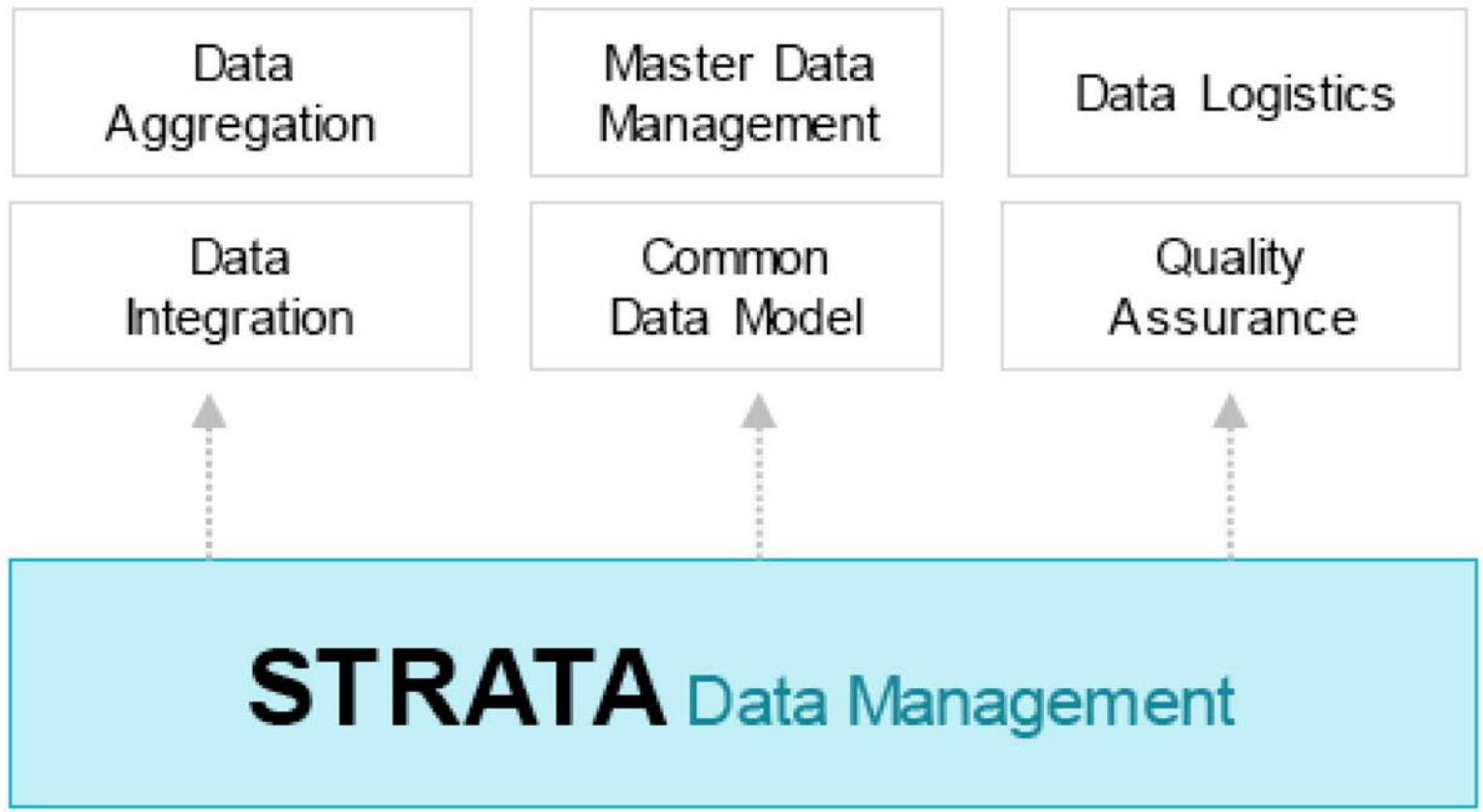


RWE RESEARCH PLATFORM
- Powered by MiHIN data
- AWS Hosted
- Multi-tenant

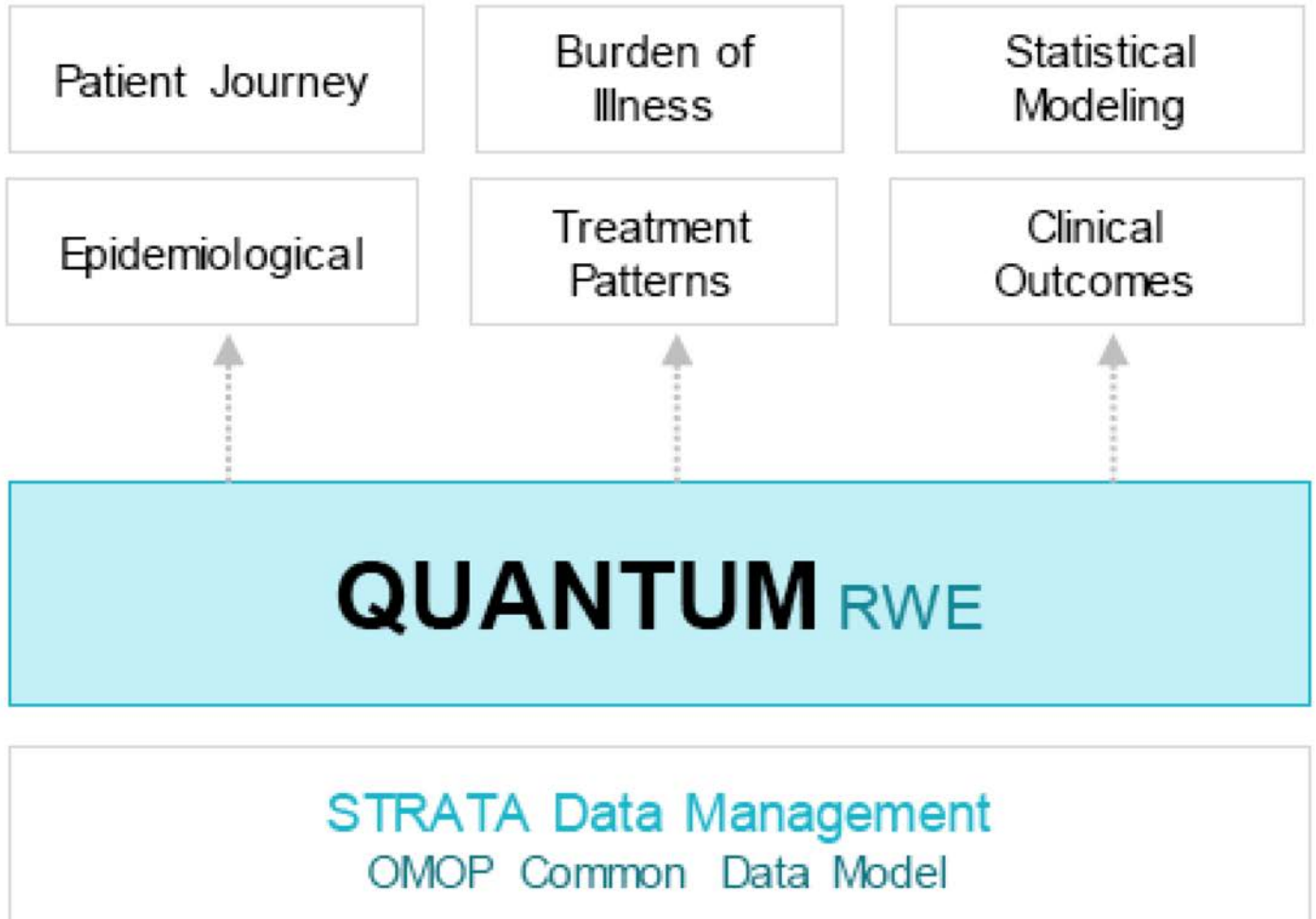
MiHIN TRANSFORMATION
- Managed Services to create conversion script
- Automated cloud conversion (post implementation)
- Foundational step for comparative research & analysis

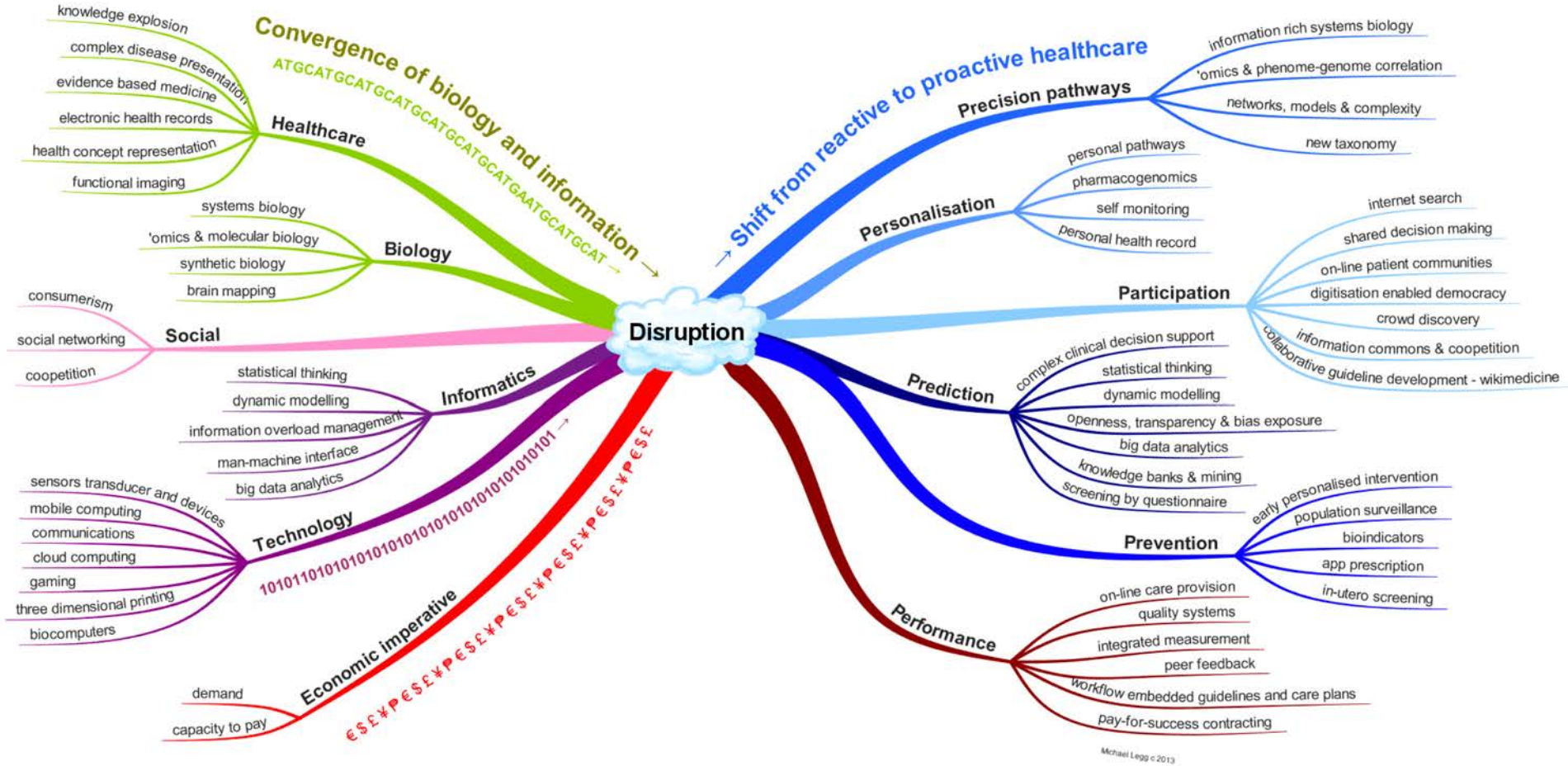
PHOENIX DATA MANAGEMENT PLATFORM
- Multi-source automated aggregation, integration
- Data layer powering Quantum for RWE research
- Business rules governing data access and usability
- End-to-end Quality Assurance
- Cloud redundancy

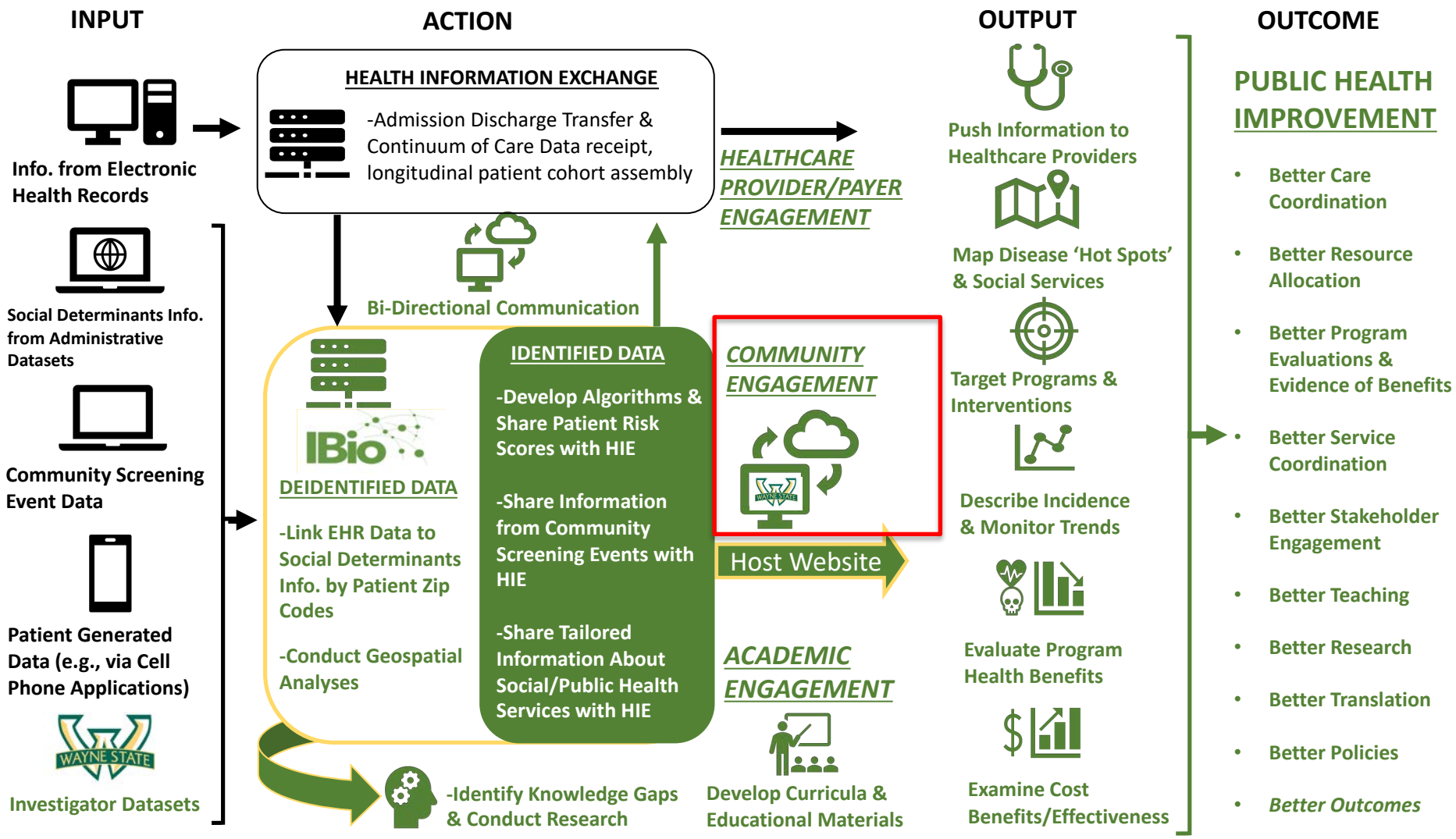
Cloud Data Management



Real World For Public Health




Disruption
Convergence of biology and information →
ATGCATGCATGCATGCATGCATGCATGAATGCATGCAT →
Healthcare
knowledge explosion
complex disease presentation
evidence based medicine
electronic health records
health concept representation
functional imaging
Biology
systems biology
'omics & molecular biology
synthetic biology
brain mapping
Social
consumerism
social networking
coopetition
Informatics
statistical thinking
dynamic modelling
information overload management
man-machine interface
big data analytics
Technology
sensors transducer and devices
mobile computing
communications
cloud computing
gaming
three dimensional printing
biocomputers
1010110101010101010101010101010101 →
Economic imperative
demand
capacity to pay
€$£¥P€$£¥P€$£¥P€$£¥P€$£¥P€$£
→ Shift from reactive to proactive healthcare
Precision pathways
information rich systems biology
'omics & phenome-genome correlation
networks, models & complexity
new taxonomy
Personalisation
personal pathways
pharmacogenomics
self monitoring
personal health record
Participation
internet search
shared decision making
on-line patient communities
digitisation enabled democracy
crowd discovery
information commons & coopetition
collaborative guideline development - wikimedicine
Prediction
complex clinical decision support
statistical thinking
dynamic modelling
openness, transparency & bias exposure
big data analytics
knowledge banks & mining
screening by questionnaire
Prevention
early personalised intervention
population surveillance
bioindicators
app prescription
in-utero screening
Performance
on-line care provision
quality systems
integrated measurement
peer feedback
workflow embedded guidelines and care plans
pay-for-success contracting
Michael Legg c 2013


INPUT
ACTION
OUTPUT
OUTCOME
HEALTH INFORMATION EXCHANGE
-Admission Discharge Transfer & Continuum of Care Data receipt, longitudinal patient cohort assembly
Info. from Electronic Health Records
Social Determinants Info. from Administrative Datasets
Community Screening Event Data
Patient Generated Data (e.g., via Cell Phone Applications)
Investigator Datasets
Bi-Directional Communication
HEALTHCARE PROVIDER/PAYER ENGAGEMENT
COMMUNITY ENGAGEMENT
Host Website
ACADEMIC ENGAGEMENT
IBio
DEIDENTIFIED DATA
-Link EHR Data to Social Determinants Info. by Patient Zip Codes
-Conduct Geospatial Analyses
IDENTIFIED DATA
-Develop Algorithms & Share Patient Risk Scores with HIE
-Share Information from Community Screening Events with HIE
-Share Tailored Information About Social/Public Health Services with HIE
-Identify Knowledge Gaps & Conduct Research
Develop Curricula & Educational Materials
Push Information to Healthcare Providers
Map Disease 'Hot Spots' & Social Services
Target Programs & Interventions
Describe Incidence & Monitor Trends
Evaluate Program Health Benefits
Examine Cost Benefits/Effectiveness
PUBLIC HEALTH IMPROVEMENT
Better Care Coordination
Better Resource Allocation
Better Program Evaluations & Evidence of Benefits
Better Service Coordination
Better Stakeholder Engagement
Better Teaching
Better Research
Better Translation
Better Policies
Better Outcomes


Health People, Health Economy
Welcome to the
Hypertension Intervention Project
Health People, Health Economy
Welcome to the

You're invited to a

COMMUNITY CARDIOVASCULAR CONVERSATION

American Heart Association | American Stroke Association

life is why™

WAYNE STATE UNIVERSITY

Do you have high blood pressure?

The American Heart Association & Wayne State University want to hear from **YOU**.

MARCH 13, 2018

6 - 8 p.m. | iBio, Wayne State University

6135 Woodward Ave, Detroit, MI 48202

FREE EVENT | REFRESHMENTS | RSVP REQUIRED

Don't miss this engaging forum focused on blood pressure management. Join us to share your family history, experience with diagnosis, physician/patient communication, barriers to adherence, and more. Let us know what you need from your medical professionals what can help you become the best patient, and what it takes to control your hypertension.

Highlights :

- **Facilitator led discussions**
- **Peer conversations**
- **Your input will remain anonymous**

For information & to RSVP (by March 2), email Whitney.Coleman@heart.org

Participants will receive a pre-event survey due Mar. 9

Limited reservations per county. Sorry, no walk-ins admitted.


plevy@med.wayne.edu

MedHealth and the 2020 Summit

Paul Riser, TechTown

MedHealth

MedHealthInnovation.org

What Is MedHealth?

- Started in 2015, MedHealth is a regional collaboration **connecting**, **convening**, and **educating** the medical innovation ecosystem in Southeast Michigan and Southwest Ontario to accelerate the adoption of technologies that improve quality of care and contribute to economic growth.

MedHealth

Who Is Involved?

- Audacia Bioscience
- Beaumont
- Blue Cross Blue Shield Michigan
- Detroit Economic Growth Corporation
- Detroit Medical Center
- Digital Venture Factory
- Hacking Health
- HealthForward Detroit Regional Chamber
- Henry Ford Health System
- Henry Ford Innovation Institute
- In2being
- Invest Detroit
- Lawrence Technological University
- Michigan Economic Development Corporation
- Michigan State University College of Osteopathic Medicine
- Microsoft Corporation
- Oakland County
- Oakland University OU INC
- Slalom Consulting
- TechTown Detroit
- TransForm Shared Service Organization
- University of Windsor
- University of Michigan Fast Forward Medical Innovation
- Walgreens
- Wayne County
- Wayne State University
- WEtech Alliance

MedHealth

What Is the MedHealth Summit?

- The MedHealth Summit has changed the way healthcare technology is discovered and sourced by bringing together healthcare organizations, innovators, research institutions, and investors for one-on-one matchmaking meetings and educational programming.
- The Summit catalyzes partnerships and supports the growth of medical-innovation businesses.

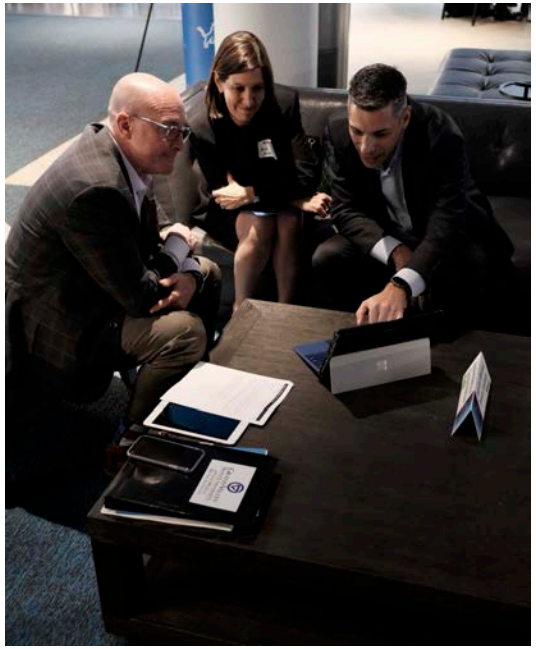
MedHealth

2019 Summit Highlights

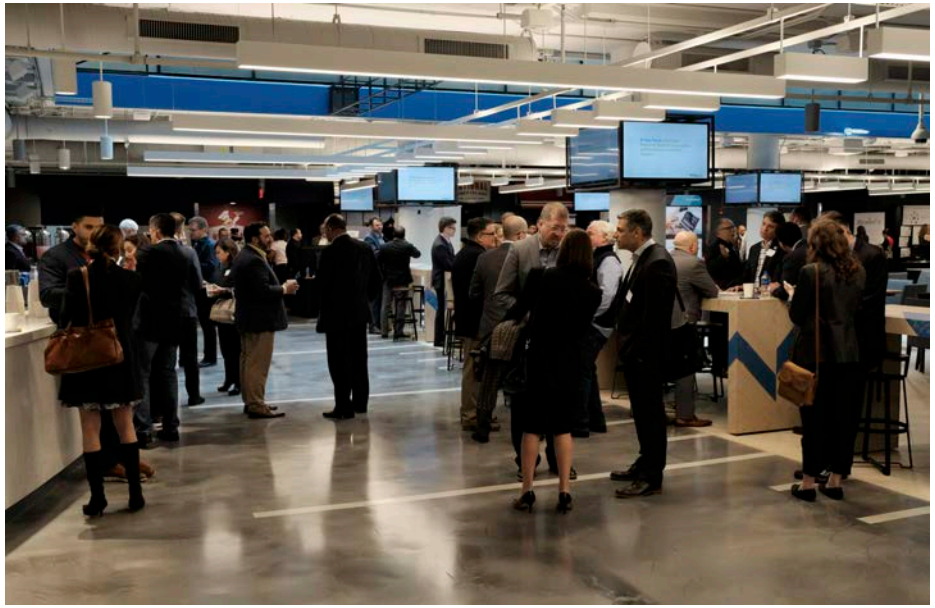
350 attendees

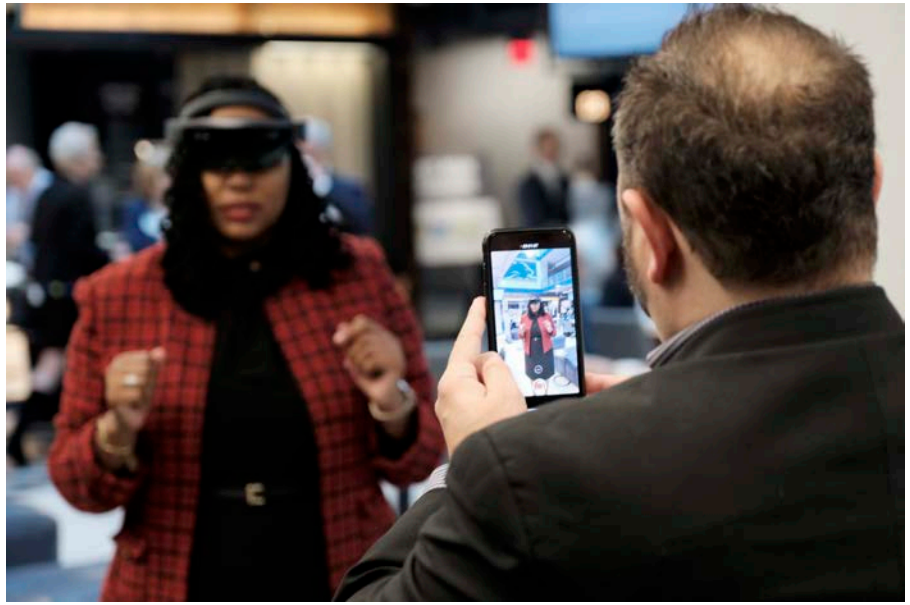
240 meetings between innovators, research institutions, and healthcare organizations

58 early- and second-stage companies who participated in matchmaking meetings



MedHealth





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What Is Expected for the 2020 Summit?

- Keynote Speaker: Jeff Bennett, higi (invited)
- Panel Discussions
- Investor Connections
- Market-ready Matchmaking
- Networking

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Panel discussions

- Developing digital health and medical device innovations to serve population health
- The role of digital health and medical devices in achieving health equity
- Building a supportive and coordinated health system infrastructure for digital health and medical devices
- Consumerism of health and patient data

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Ways to be Involved in the 2020 Summit

Sara Donally, Slalom Consulting

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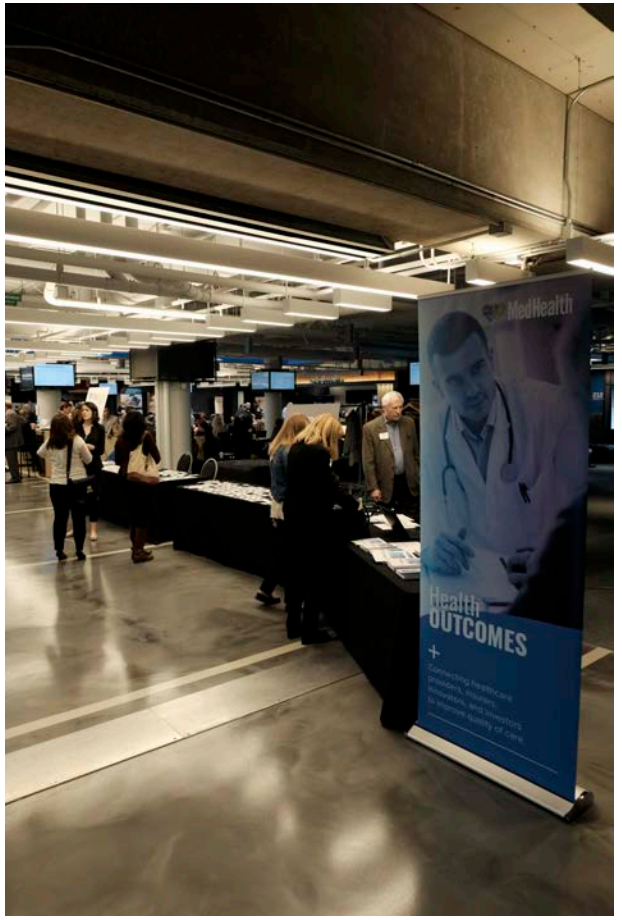
MedHealthInnovation.org

Register to Attend the Summit

This unique event provides healthcare innovation businesses, health providers, research institutes, entrepreneurs, economic developers, insurers, and investors on both sides of the border with an opportunity to network with, learn from, and pitch their innovations to potential supporters and collaborators.



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Become a Sponsor

PLATINUM SPONSOR $20,000

One available

Benefits

- Podium acknowledgment
- Premium logo placement on MedHealth Summit webpage
- Premium logo placement on promotional emails
- Premium logo placement on event signage, digital screens, and banners
- Logo in event program
- Lead recognition in all event press releases
- Opportunity to distribute organization handout at registration table
- Opportunity to distribute company-branded swag
- Additional benefits, as determined

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Become a Sponsor

GOLD SPONSOR—$10,000

Two available

Benefits

- Podium acknowledgment
- Logo placement on MedHealth Summit webpage
- Logo placement on promotional emails
- Logo placement on event signage, digital screens, and banners
- Logo in event program
- Recognition in all event press releases
- Opportunity to distribute organization handout at registration table

Become a Sponsor

SILVER SPONSOR—$5,000

Eight available

Benefits

- Podium acknowledgement
- Logo placement on MedHealth Summit webpage
- Logo placement on event signage, digital screens, and banners
- Logo in event program

Become a Host

- Hosts will take part in several meetings with digital health and medical device innovation companies.
- One-on-one matchmaking meetings are selected prior to the Summit.
- After the Summit, host organizations will have the opportunity to conduct follow-up interviews with companies with which they are interested in partnering.

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Want More Information?

MedHealth website: https://medhealthinnovation.org/

MedHealth Summit website: https://medhealthinnovation.org/summit/

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MedHealth Summit Success Story

Rob Iobani, CoHealth

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Questions?

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Networking

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