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OF ADVANCING
PUBLIC
HEALTH

Massachusetts Department of Public Health

Using the Population Health Information Tool (PHIT) to Reframe Data for Achieving Equitable Health Outcomes in Communities

Massachusetts Health Officers Association
Annual Conference

November 6, 2019

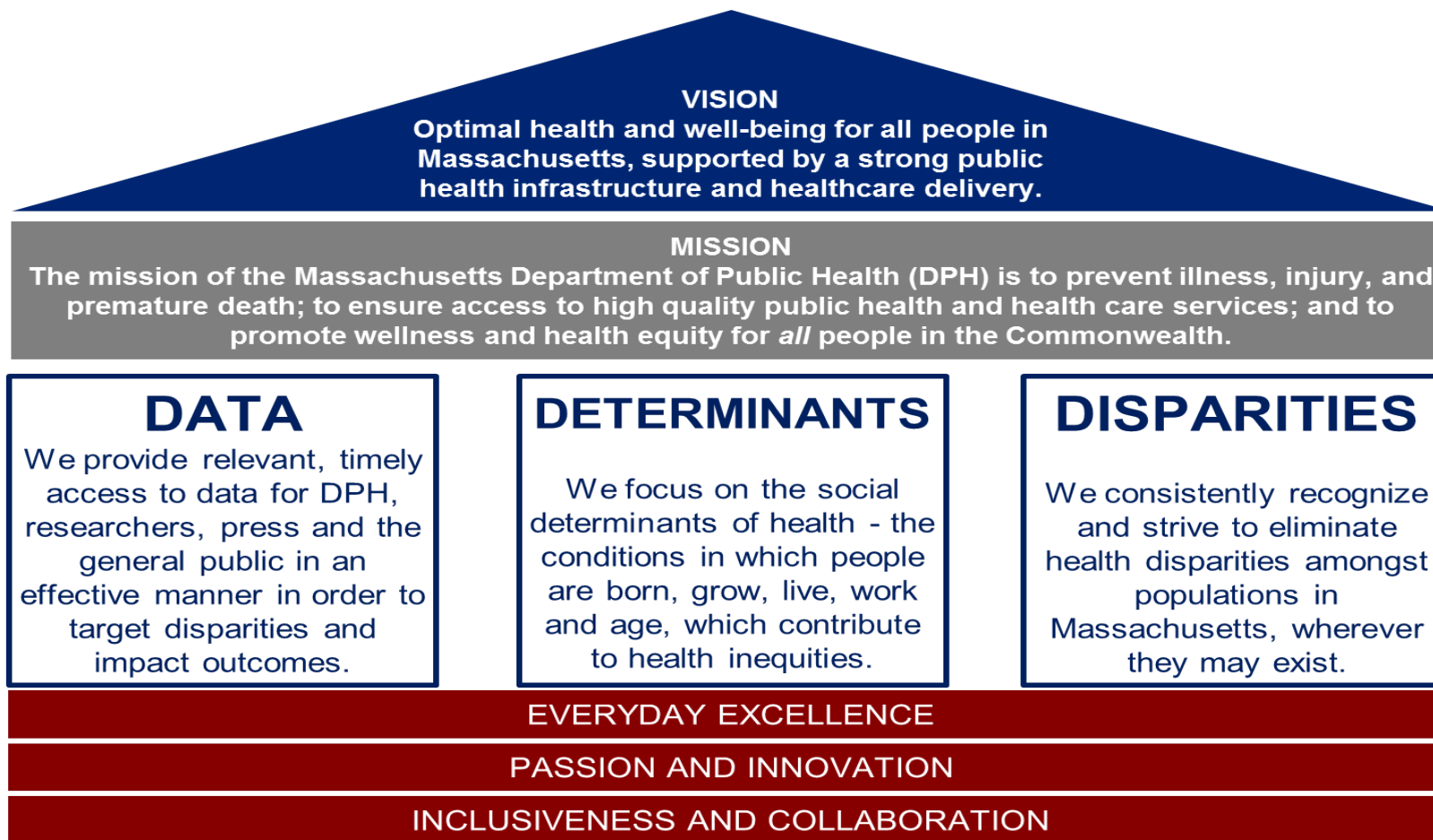
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Director
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Program Manager, Population Health Information Tool
Office of Data Management and Outcomes Assessment

Today's Agenda

- Background
- What is PHIT?
- Case Example
- Demo
- Framing Health Challenges with a Health Equity Lens
- Q&A

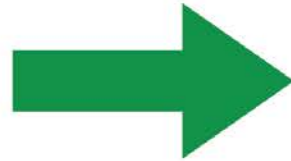




Massachusetts DPH will continue to be a **national leader** in innovative, outcomes-focused public health based on a **data-driven** approach, with a focus on **quality public health and health care services** and an emphasis on the social determinants and **eradication of health inequities**.

Some good news...

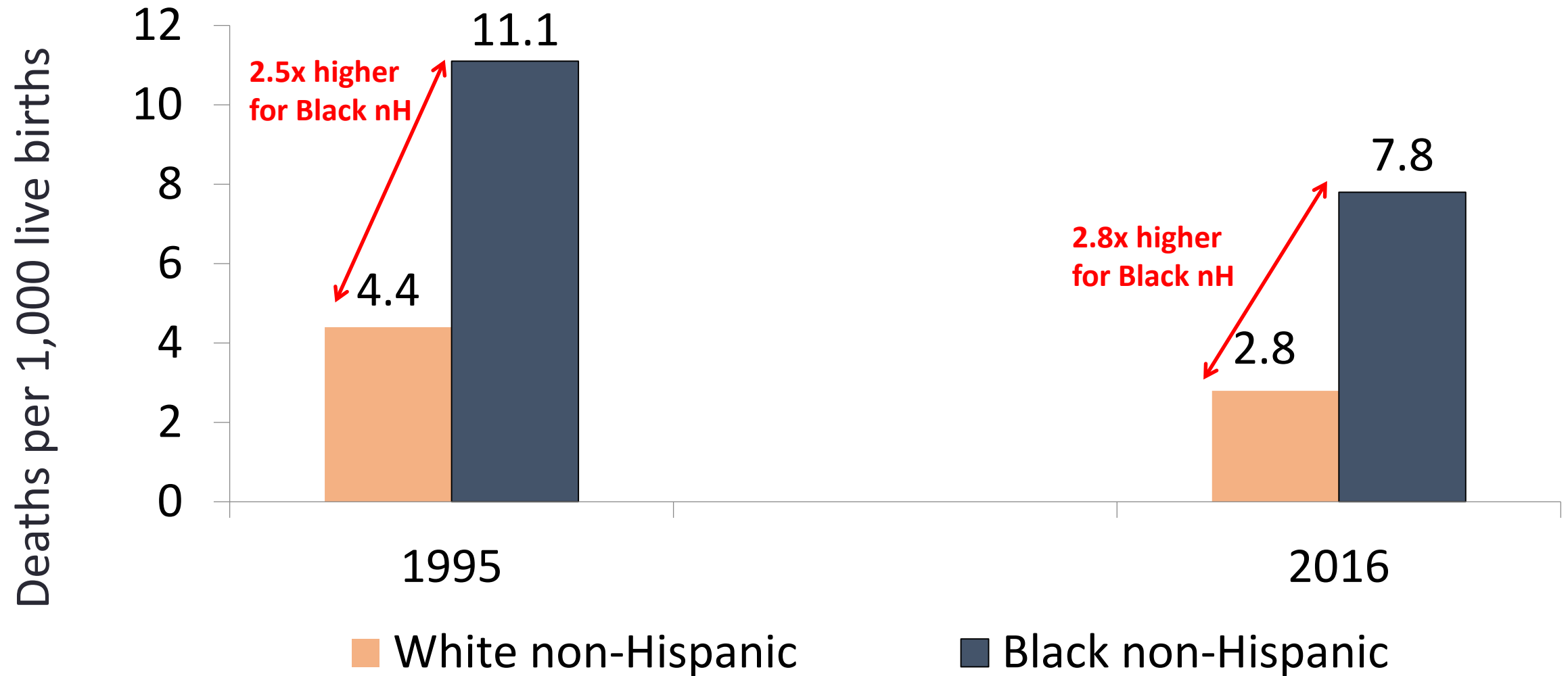
#2 Healthiest State in the Nation:



MASSACHUSETTS

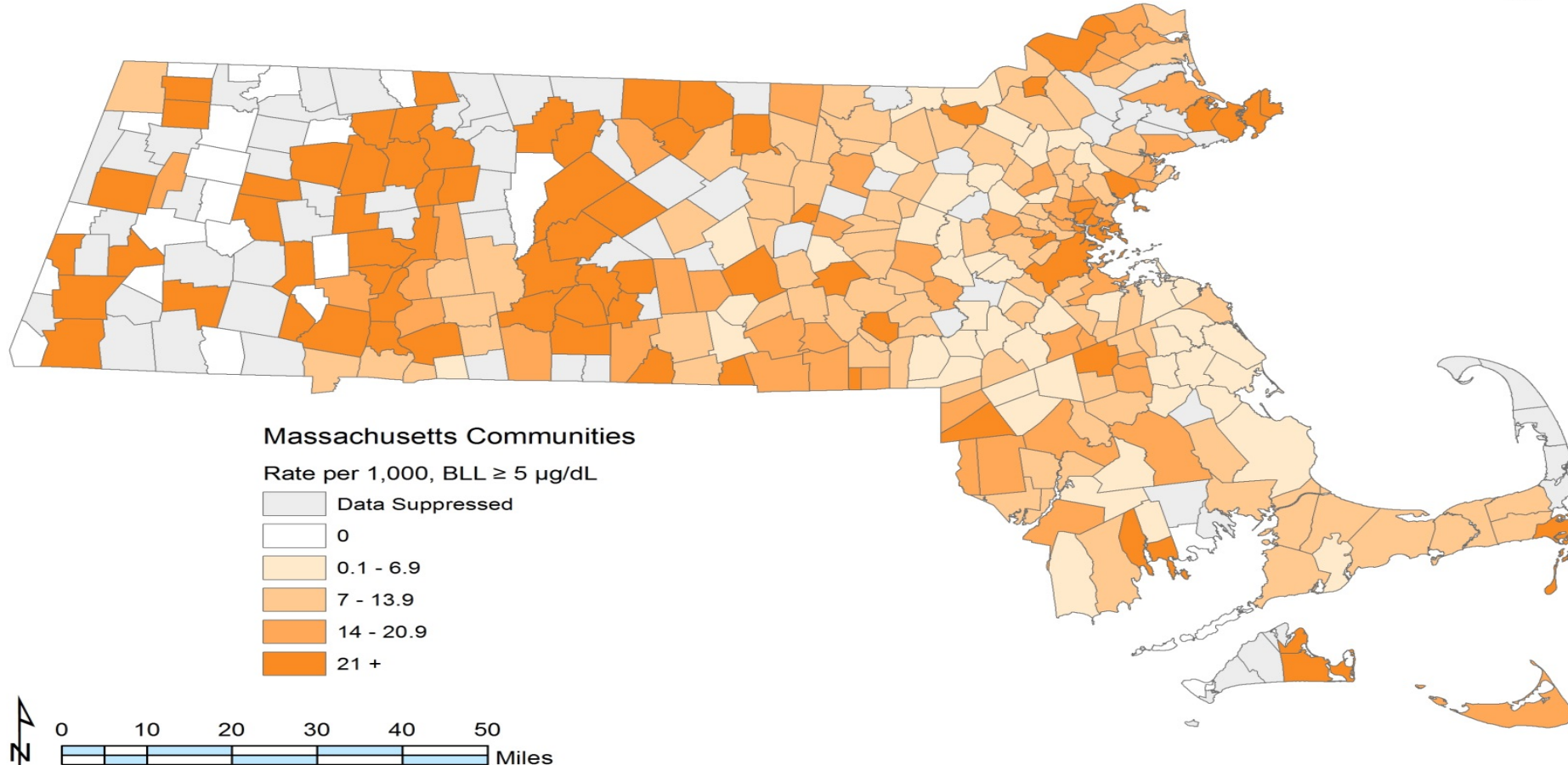
From the 2018 *America's Health Rankings* Annual Report

Infant Mortality among Black and White non-Hispanic Mothers in Massachusetts* 1994-2016



Childhood Lead Exposure

Childhood Lead Poisoning Blood Lead Levels, 5 Year Prevalence (2013 - 2017),
Confirmed BLL ≥ 5 $\mu\text{g/dL}$, Age 9 to 47 Months



Data source: MA Department of Public Health, Bureau of Environmental Health, Childhood Lead Poisoning Prevention Program. Map by BEH-GIS, MDPH
Geographic Data courtesy of Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division

Health Disparities and Inequities

What are health disparities?

Disparities are significant differences in health outcomes between populations.

What are health inequities?

Inequities are the unjust distribution of resources and power between populations which manifests in disparities.

Equality

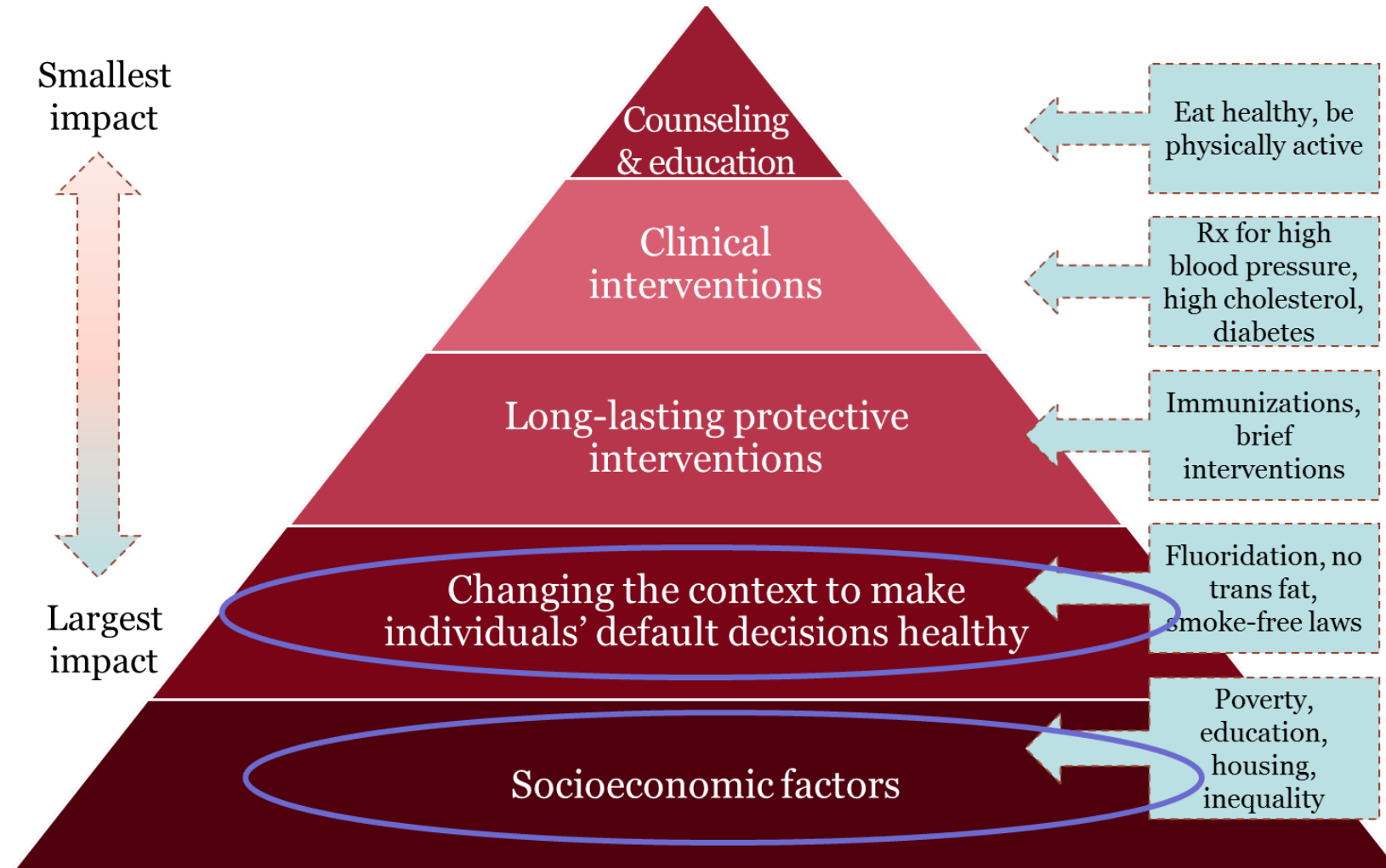


Equity

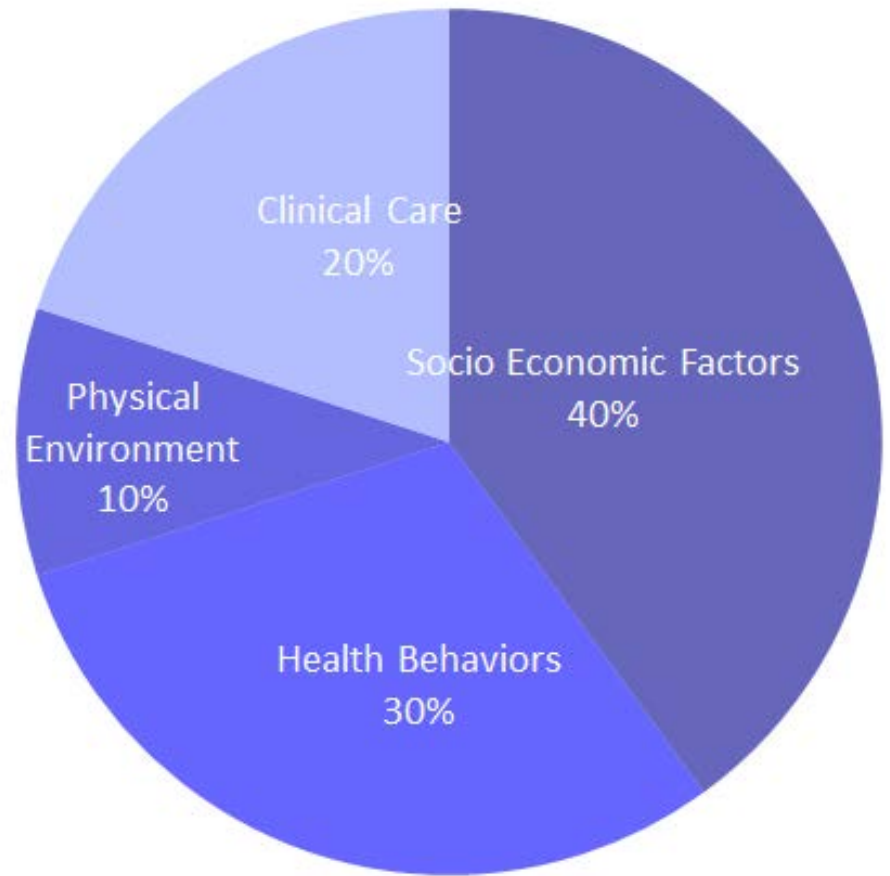


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CDC Health Impact Pyramid

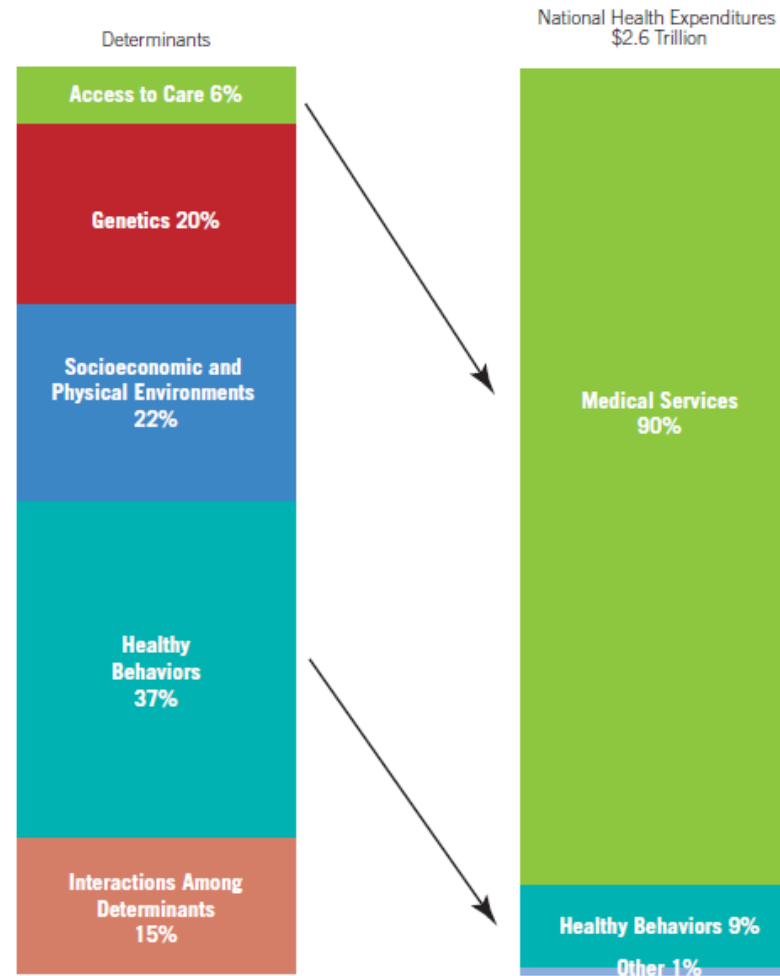


Who & What Impacts Health?



Spending Mismatch

The Spending Mismatch: Health Determinants vs. Health Expenditures



Source: NEHI and University of California, San Francisco, 2013.

Addressing Health Inequity: Upstream, Midstream, and Downstream

Policies and Environments

Increased Risk

Health-related Social Needs

Address **policies and environments** to change these unjust systems ex: *housing policies, land trusts, etc.*

Mitigate the **impact of the increased risk** caused by these unjust systems ex: *supportive housing, new development, stabilization initiatives*

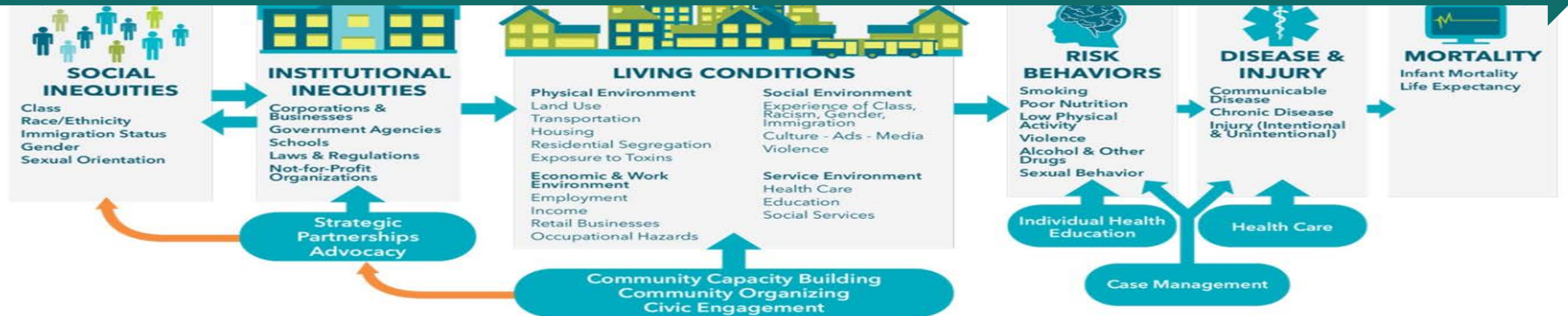
Address the **immediate health related social needs** caused by these unjust systems ex: *air conditioner vouchers*

A PUBLIC HEALTH FRAMEWORK FOR REDUCING HEALTH INEQUITIES

UPSTREAM

MIDSTREAM

DOWNSTREAM

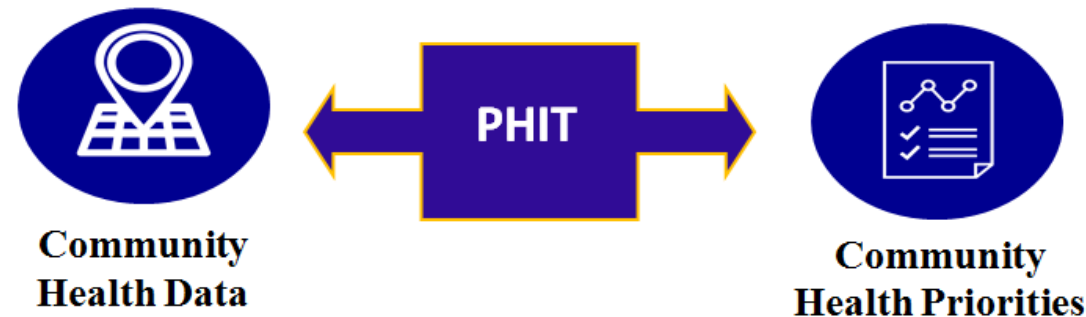


Emerging Public Health Practice

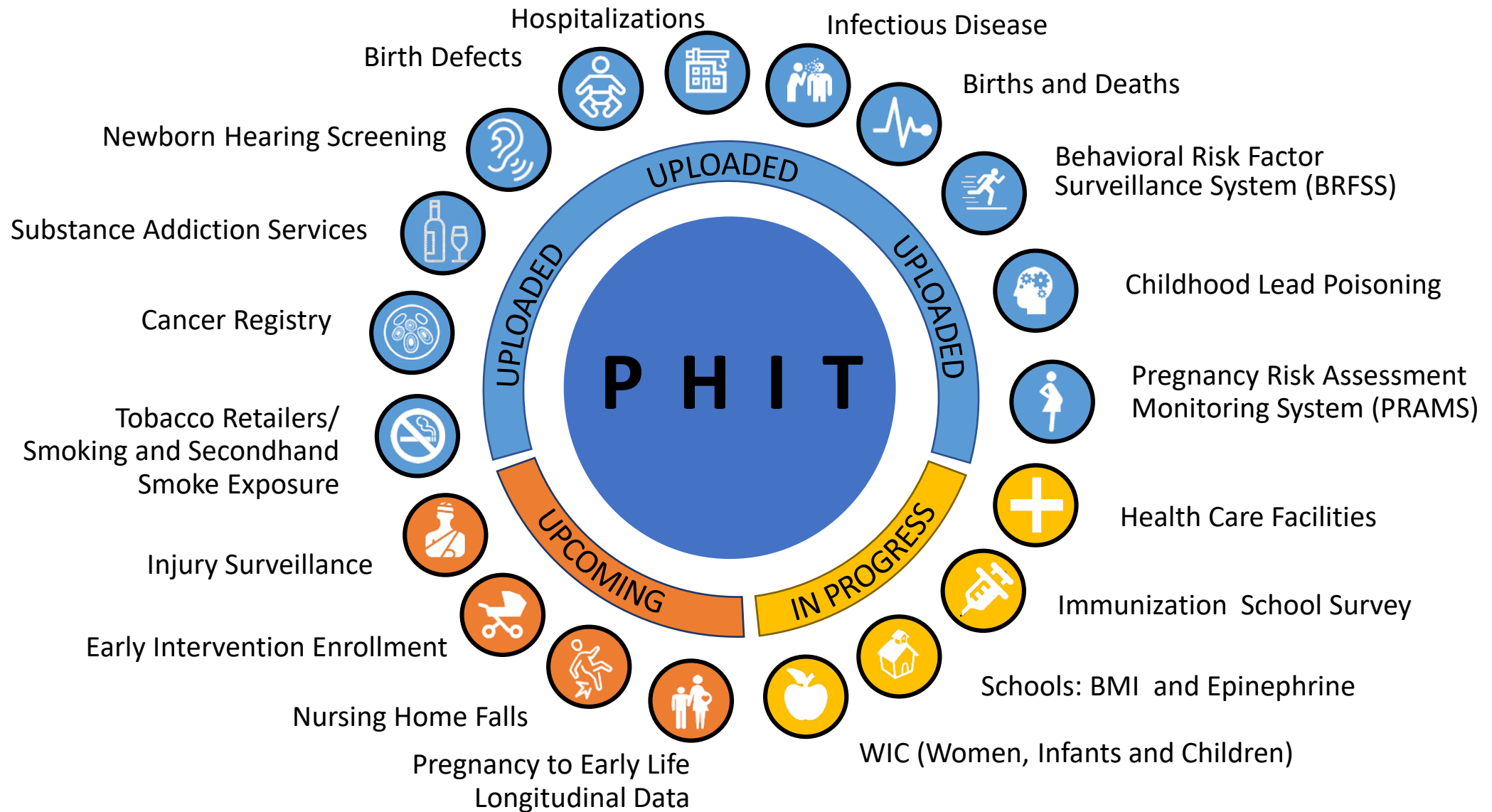
Current Public Health Practice

What is PHIT?

- Provide access to **timely & reliable** Massachusetts health data
- **Inform** community and statewide efforts aimed at improving health and increasing healthcare value
- Facilitate understanding and adoption of a **social determinants of health** framework in planning efforts
- Enable **collaborations across sectors** that have downstream impacts on health outcomes



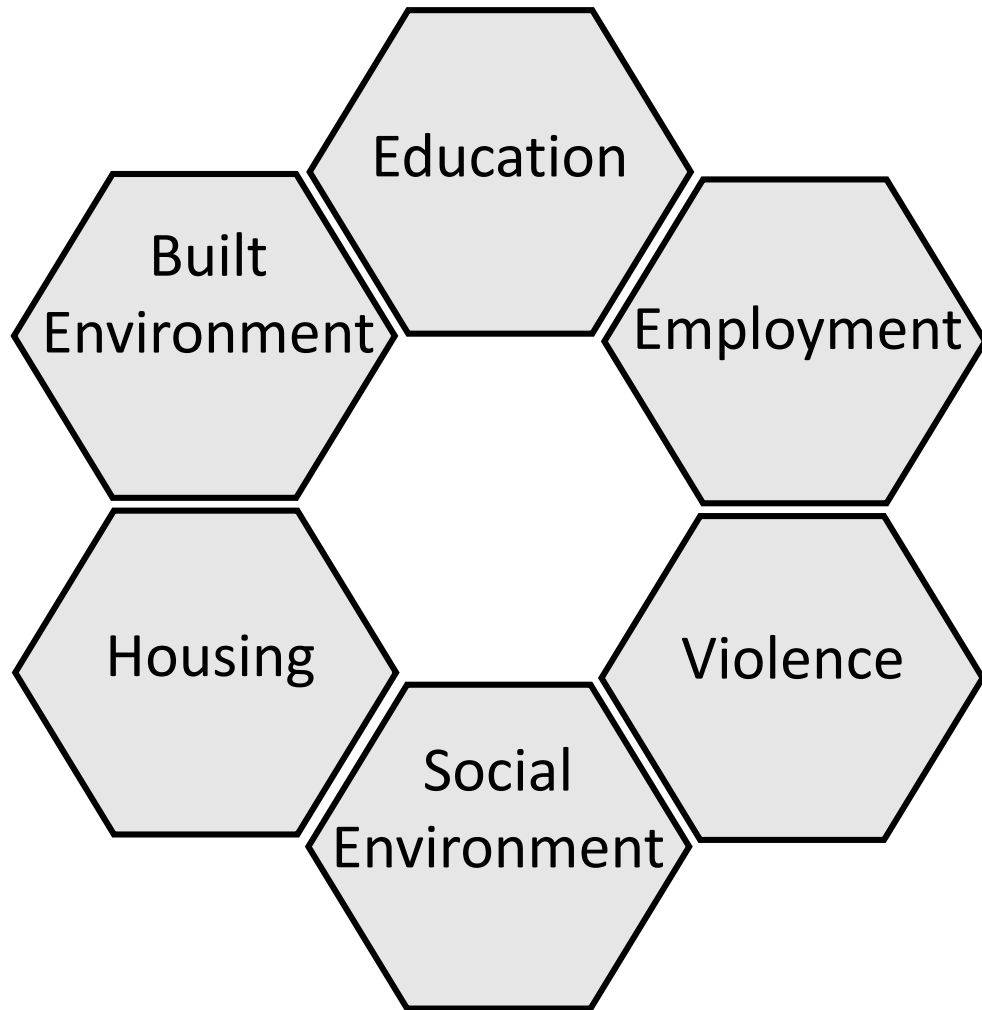
Data in PHIT



Data in PHIT

- 24+ **unique, queriable datasets**, with additional **static reports** where queries are not possible
- Gathering feedback and analytic info from PHIT users to identify **opportunities for improvement and sustainability**
- Provides information with different levels of **granularity**, while preserving privacy
- Presents data using maps, graphs and tables. Data files for download are available
- Users can **query data sets** and produce ‘on the fly’ calculations to explore topics

Social Determinants of Health (SDoH) Reports



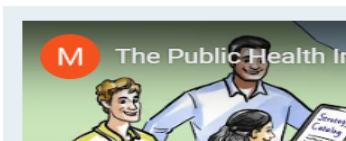
PHIT Community Reports

OFFERED BY Department of Public Health

PHIT Community Reports

Find community-specific data and see how health outcomes are impacted by the social determinants of health.

View community-specific data on Built Environment, Education, Income, and Violence. This information is a key contributor to poor health outcomes.



Employment in Worcester

How employment, a social determinant of health, impacts health in your community.

[Revise Query](#)

Introduction

Employment is broadly defined as paid work. Ideally, employment should be accessible, safe, stable, however, policies, programs, and systemic discrimination sometimes compromise a person's access to employment and the consequences for a person's health since employment is a social determinant of health.

A wealth of research has shown that when a person is employed and has a stable job, they are more likely to have a higher income, which improves a person's financial ability to support their basic needs, a healthy lifestyle, and a better environment. Being employed in a high-quality job also improves a person's stress levels, self-worth, self-esteem, and social capital—over time, it is also well-recognized that poor working conditions can adversely affect health, resulting in a negative impact on a person's health and the health of the community as a whole.

Both access to and the quality of employment is related to a number of specific health outcomes and

Cardiovascular disease
Heart disease link needed
Hypertension link needed
Stroke
Mental health conditions
Nonfatal work injuries
Asthma hospitalizations
Lead poisoning
Infectious diseases
Crash related injuries
Healthy diet
Regular exercise
Smoking cessation
Substance use

This report explores how different people—across race and ethnicity, gender, sexual orientation, disability status, and age—experience employment. This report does this through detailed data on employment status and their connection to health in your community in four key issue areas:

[EMPLOYMENT STATUS](#) [WORKPLACE RISK FACTORS](#) [WORK ORGANIZATION](#) [WORK-RELATED RESOURCES](#)

Employment Status

In order for people to find employment, there must be enough jobs available in your community. The number of jobs added, and the number of jobs removed over the course of one year is a key indicator of the health of the community's economy.



[EMPLOYMENT STATUS](#)

[WORKPLACE RISK FACTORS](#)

[WORK ORGANIZATION](#)

[WORK-RELATED RESOURCES](#)

Work-Related Resources

Median Annual Earnings by Census Tract for Worcester

Source: U.S. Census Bureau, American Community Survey (ACS), 5-year estimates.



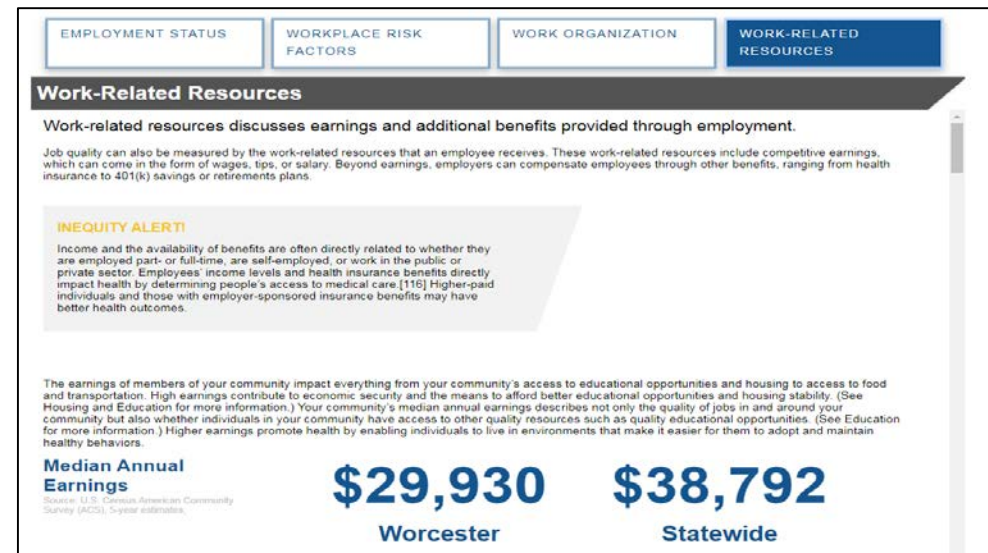
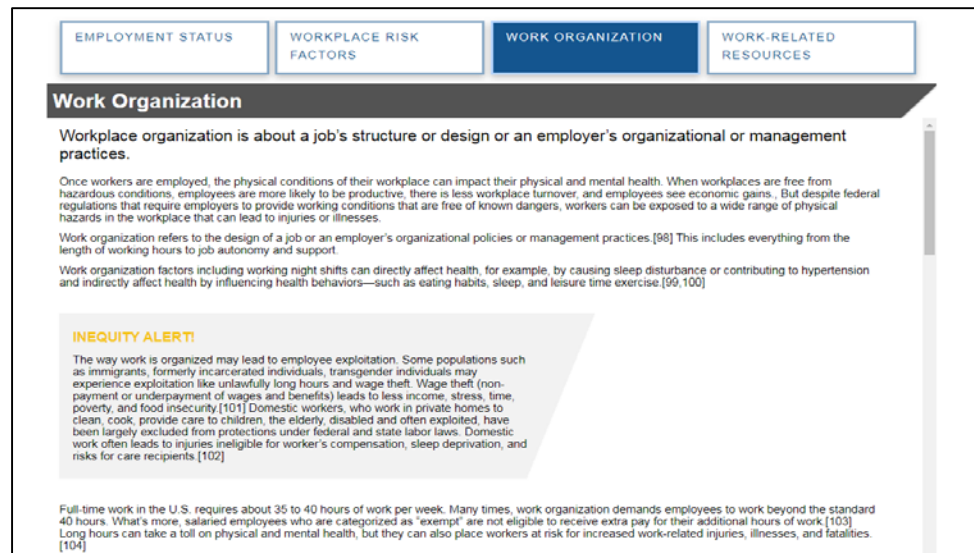
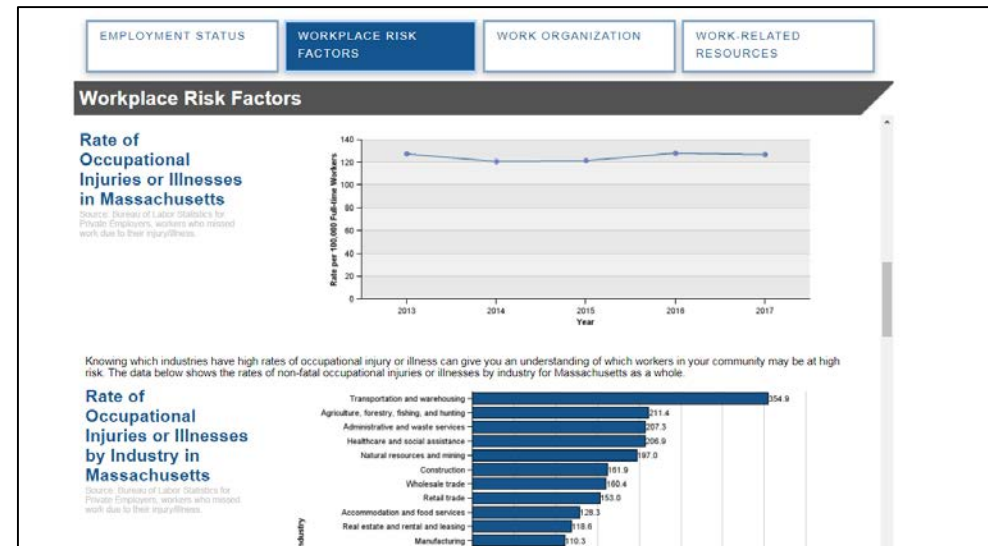
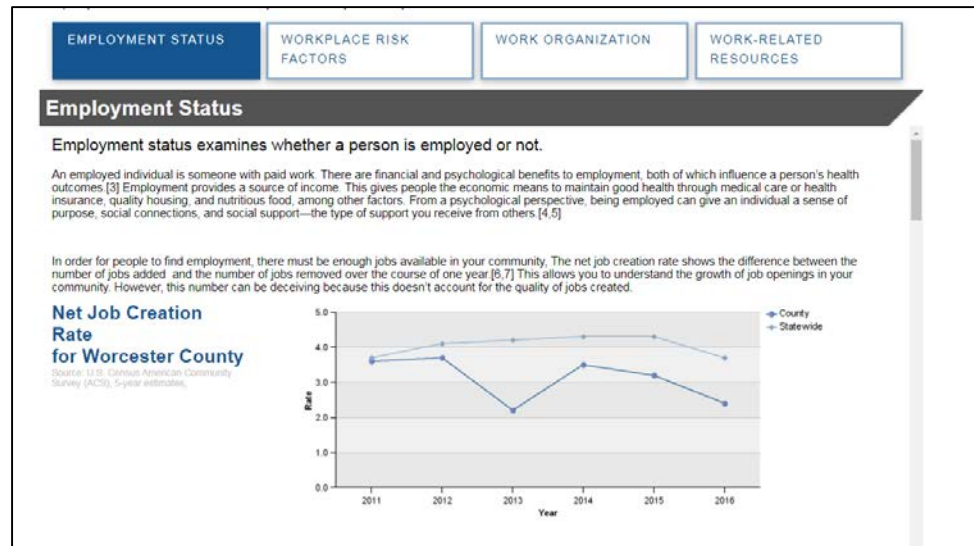
Income varies tremendously by occupation. Your community data on median annual earnings by occupation shows the disparities in pay between different types of work. It is also important to consider class issues in your community including blue collar versus white collar professions.

Median Annual Earnings by Occupation

Source: U.S. Census Bureau, American Community Survey (ACS), 5-year estimates.



Employment Report



PHIT Case Study

Manet Community Health Center

- Compared health trends of five chronic diseases in Quincy, Taunton, North Attleboro, Braintree and Randolph
- PHIT-Based Findings:
 - Substantial mental health disease burden is observed in all cities particularly Quincy and Taunton
 - Need for increased MAT programs and psychiatrist access
 - Disparities in Median Earning Income
 - Quincy residents have a longer commute time to and from work
 - Randolph demonstrates similar health characteristics to Taunton in the current analyses
- Results:
 - Extended operating hours in Quincy
 - Determination that Randolph is a suitable candidate as the next access point location



Demo

<https://www.mass.gov/orgs/population-health-information-tool-phit>

- Dataset catalog
- Prevalence of Obesity (BRFSS) – *Data Layering*
- Chronic Disease hospitalizations – *City/Town Comparisons*

Select Topic & Category Going From Left to Right

The image displays two screenshots of the Mass.gov data portal interface, illustrating the process of selecting a topic and category from left to right.

Left Screenshot: Shows the "Select a Sub-topic" dropdown menu. The options listed are:

- 15 Or More Fruit & Vegetables Consumed Daily Am
- Angina Or Chd Among Massachusetts Adults
- Diabetes Among Massachusetts Adults
- Fifteen Plus Days Poor Mental Health Among Mas
- Obese Among Massachusetts Adults** (highlighted with a red box)
- Overweight Among Massachusetts Adults

A "Cancel" button is visible below the dropdown.

Right Screenshot: Shows the main selection interface. The "State Organizations" header is visible. The navigation bar includes: LIVING, WORKING, LEARNING, VISITING & EXPLORING, YOUR GOVERNMENT.

The selection area includes the following filters:

- Geography Type:** Community (selected)
- Select Geography:** Abington, Acton, Acushnet, Adams, Agawam, Alford, Amesbury, Amherst, Andover, Aquinnah, Arlington (list shown)
- Select year or year range:** Start Year (2012, 2013, 2014), End Year (2012, 2013, 2014)
- Select Gender:** Total (selected)
- Select Race/Ethnicity:** All Races - Ethnicities (selected)
- Select Age Group:** 18 years and over (selected)

Buttons for "Cancel", "< Back", and "Submit" are present.

The footer of the right screenshot shows the "Living", "Working", and "Learning" categories, along with links for "Site Policies", "State Data", "Public Records Requests", and "Feedback".

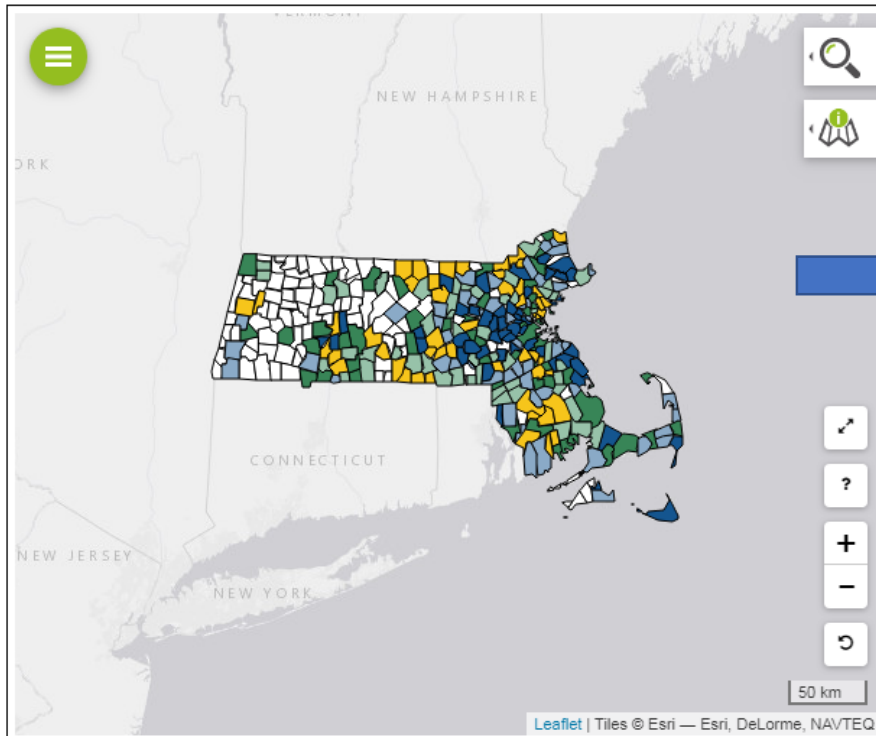
Evaluate data based on selected options

Topic BRFSS Small Area Estimates	Sub-topic Obese Among Massachusetts Adults		
Year or Year Range 2012, 2013, 2014	Sex Total	Race/Ethnicity All Races - Ethnicities	Age Group 18 years and over

Revise Query

Export to Excel

Export to CSV



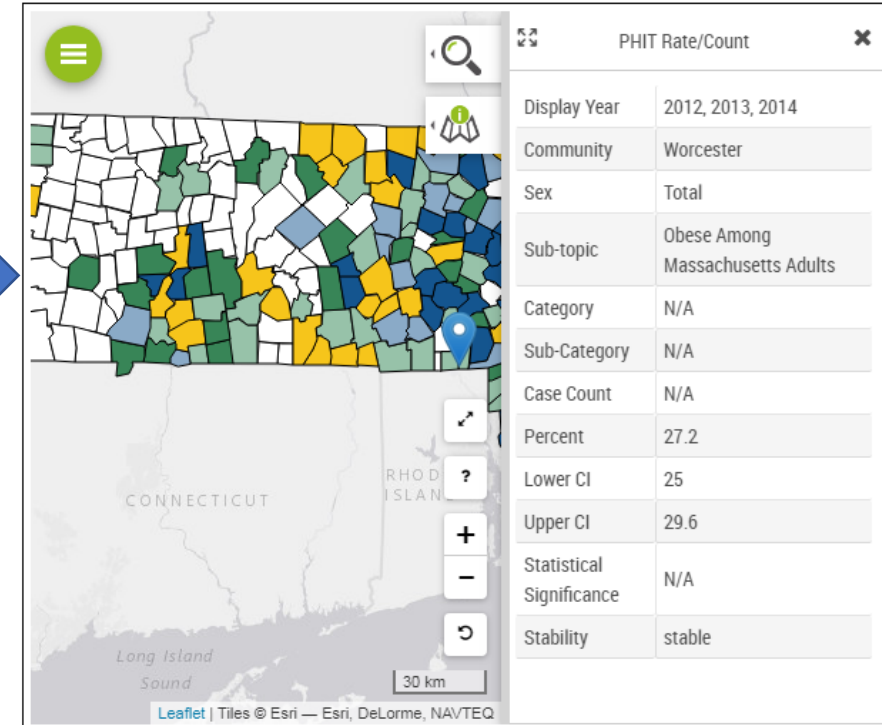
[Go to Footnotes](#)

Topic BRFSS Small Area Estimates	Sub-topic Obese Among Massachusetts Adults		
Year or Year Range 2012, 2013, 2014	Sex Total	Race/Ethnicity All Races - Ethnicities	Age Group 18 years and over

Revise Query

Export to Excel

Export to CSV



Using PHIT to reframe data for health equity at the community level

How might we address the complex needs of adolescent parents?

Issue Summary

Adolescent births in MA are concentrated in high-need communities and populations experiencing health inequities due to structural racism, lack of access to health care and high quality education, few opportunities for employment and community connection, homelessness, and poverty. Many young families have complex needs as a result of housing instability, histories of trauma, involvement in state systems of care, and behavioral health concerns.

The birth of a child can be a catalyst for a young person to achieve education or employment goals and address their social/emotional health needs, and young parents require coordinated support across multiple systems that builds on their strengths.

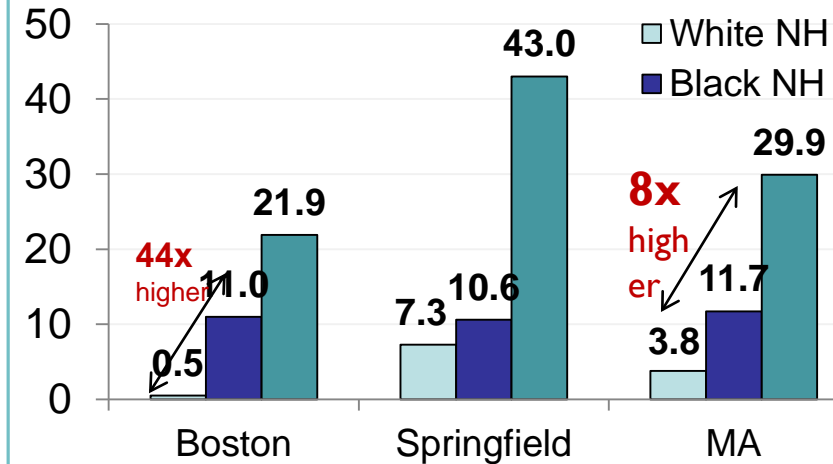
Gaps in Data, Program, or Stakeholder Involvement

- _____
- _____
- _____
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- _____

Key Takeaways and Next Steps

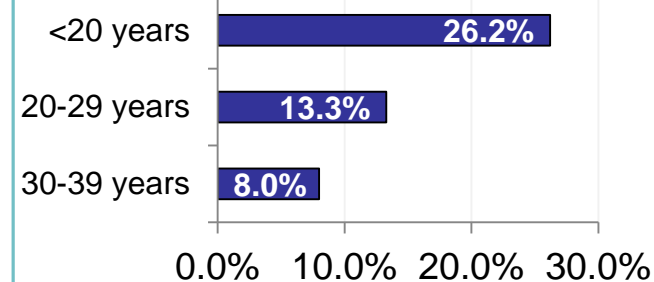
- _____
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Birth Rate among MA Women Aged 15-19 by Select Community & Race/Ethnicity, 2016



Source: Registry of Vital Records & Statistics, MDPH, 2016

Percent Mothers Reporting Postpartum Depression by Age Group, MA PRAMS, 2015-2016



Did you know....?

- Mothers aged 15-19 in MA are 25% less likely to receive adequate prenatal care compared to all MA mothers
- 54% of Hispanic MA teen births are concentrated in 6 communities and 56% of Black NH teen births are concentrated in 3 communities
- Among women aged 15-19 giving birth in MA, 13% are having their 2nd or higher child

Homelessness Among Families

44% of 18-25 year old females and **18%** of 18-25 year old males experiencing homelessness nationally are parents

MA has the **2nd highest** number of homeless families with children in the US

94% increase in homeless families with children in MA from 2007-2018

The number of adolescent-led homeless families with children in MA is **unknown**

Sources: MA Pregnancy Risk Assessment Monitoring System, MDPH, 2015-2016; Dworsky, A., Morton, M. H., Samuels, G. M. (2018). Missed opportunities: Pregnant and parenting youth experiencing homelessness in America. Chicago, IL: Chapin Hall at the University of Chicago.; US Department of Housing & Urban Development (2018). The 2018 Annual Homeless Assessment to Congress.

Making IT Happen

- Social and Behavioral Characteristics
- Geographic & Longitudinal Data
- Race and Ethnicity composition
- Community Engagement
- Community-Driven Solutions





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Thank You!

PHIT Website: <https://www.mass.gov/dph/phit>

Contact: DPH.PHIT@state.ma.us