

Beyond the Hospital: Improving Population Health

Sally Kraft, MD, MPH

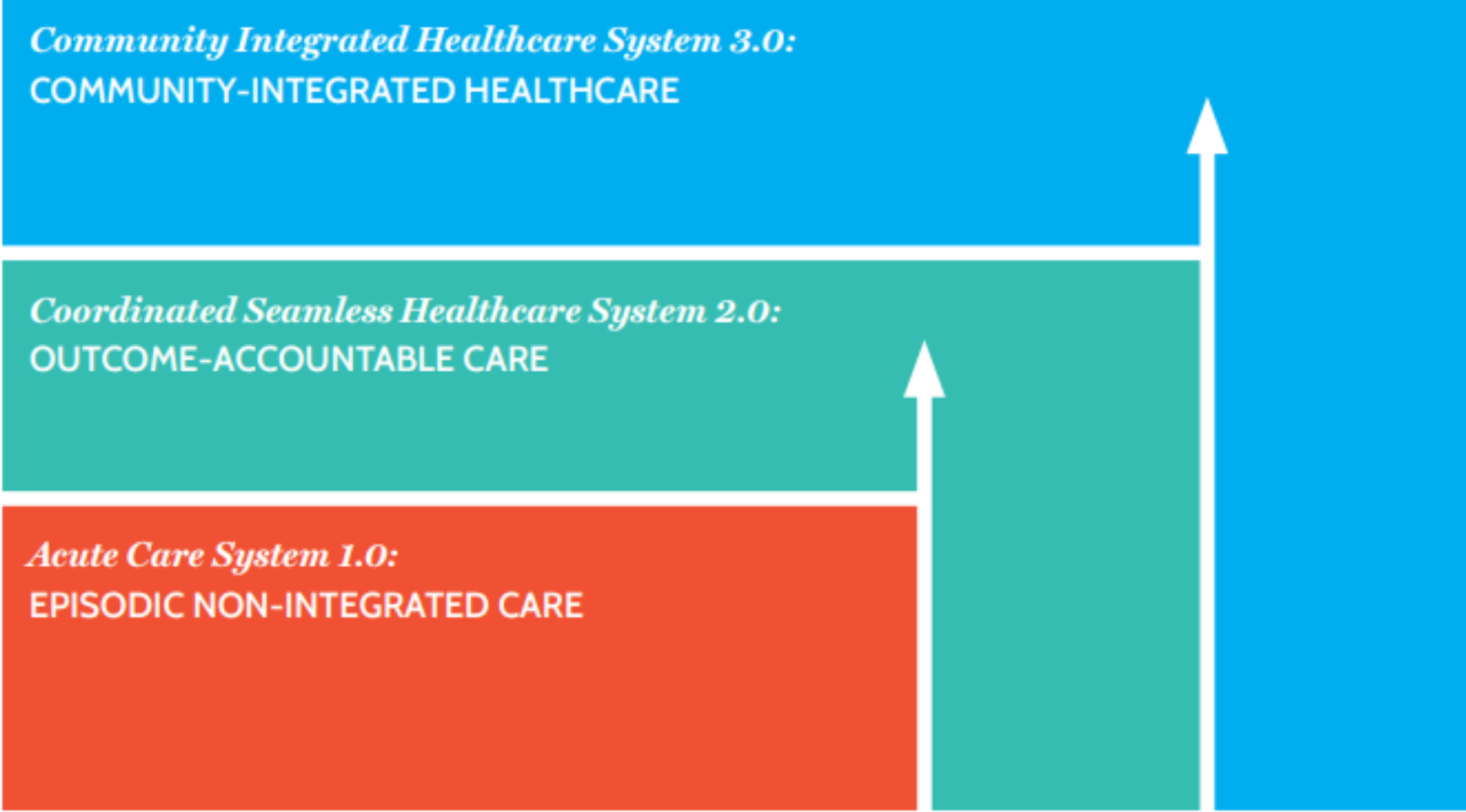
Mary Beth Eldredge, MHCDS

Learning objectives:

Demonstrate how health system data informs health care improvement.

Distinguish between improvements in health care and health.

Recognize and discuss the need for new data sources to improve population health.



Adapted from Hester et al., 2015.





Population Health is both a goal and a strategy to foster healthy, equitable populations through linking clinical and community-based approaches supported by delivery system innovations and investments.

Intentionally aligns improvements in the delivery of health care services with non-clinical approaches for improving health, preventing disease and reducing health disparities through addressing social, behavioral, environmental, and economic determinants of health.

Improving the health system alone won't improve health

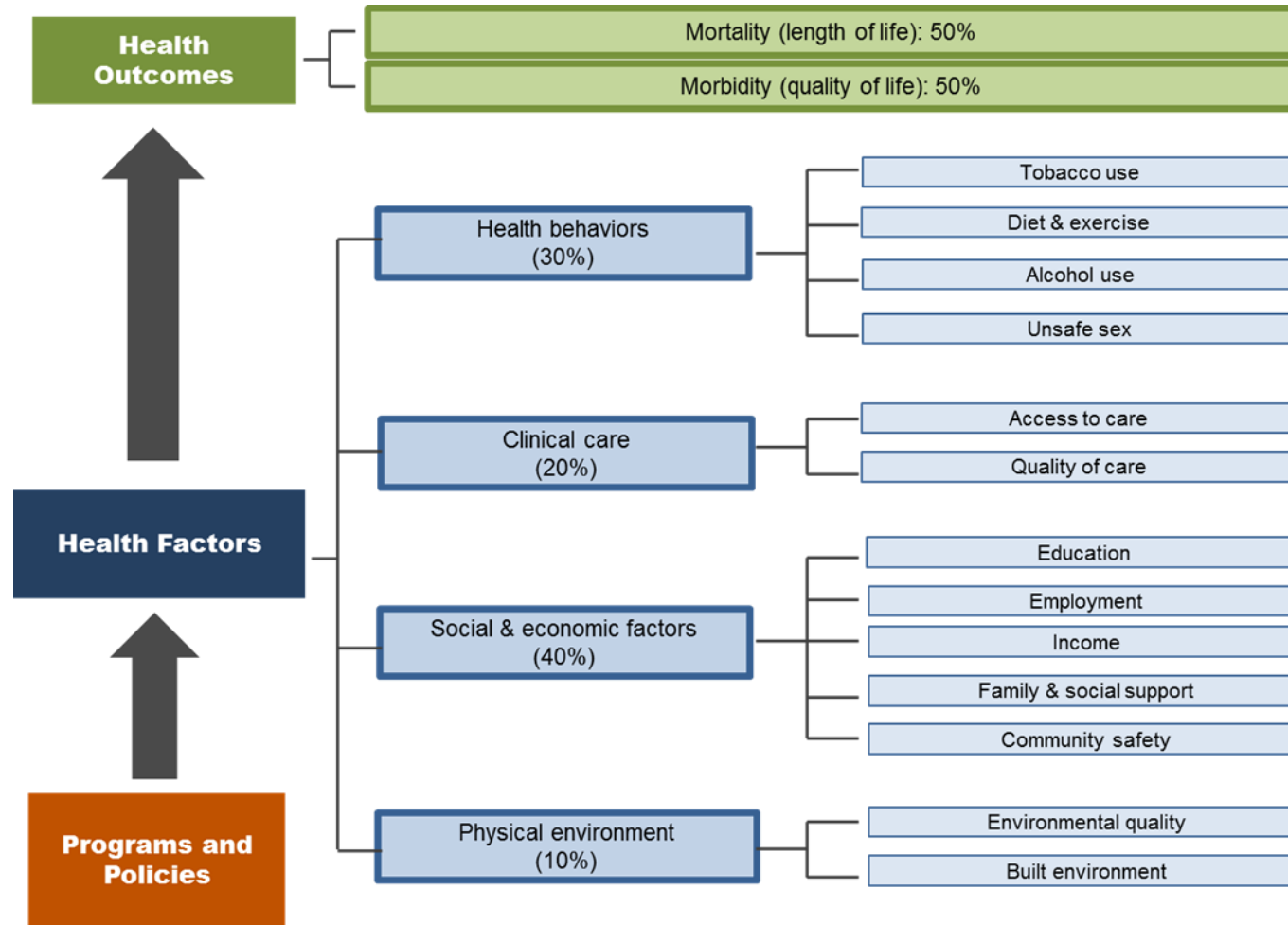
There is growing evidence from developed and developing countries that community-based approaches are effective in improving the health of individuals and populations. This is especially true when the social determinants of health are considered in the design of the community-based approach.

IOM 2015 Building health workforce capacity through Community-based health professional education.

Social Determinants of Health

The circumstances in which people are born, grow up, live, work and age, as well as the systems put in place to deal with illness. These circumstances are, in turn, shaped by a wide set of forces: economics, social policies, and politics.

Socioeconomic and behavioral factors determine 80% of health



What data will we need to improve the health of our communities?



Acute, Episodic Health Care

- Types of metrics
 - Hospital-based performance metrics
 - Episode-based treatment metrics
- Sources of data
 - Claims data
 - EHR/clinical data
- Data uses
 - Measure quality of care processes
 - Inform operations
 - Payment



Sepsis care

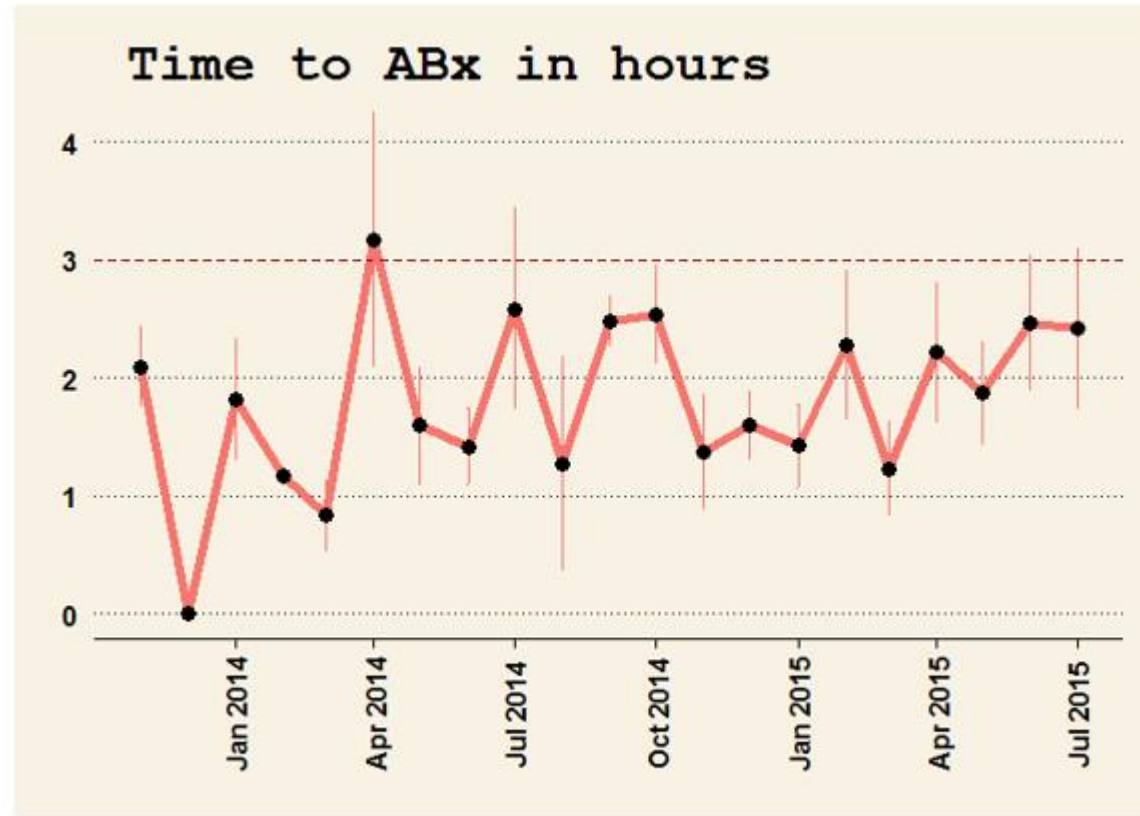


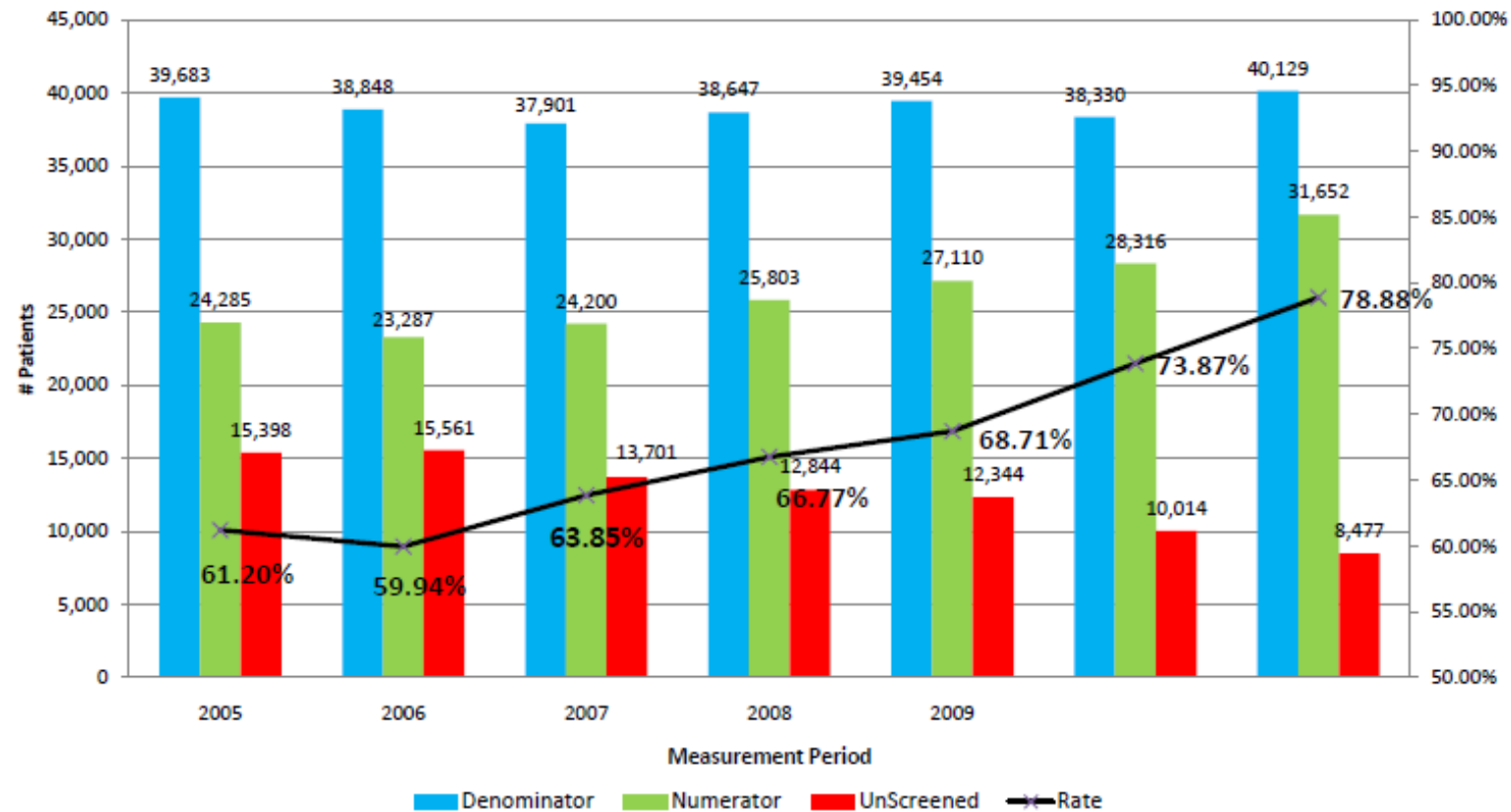
Figure 2. Time in hours to antibiotics

Accountable, Coordinated Care

- Types of metrics
 - Prevention
 - Chronic disease management
- Sources of data
 - EHR/Clinical
 - Claims
 - Patient surveys
 - Data from multiple providers
- Data uses
 - Measure quality
 - Inform operations
 - Payment
 - Manage costs
 - Proactively manage care
 - Manage populations of patients
 - Coordinate care



Colorectal Cancer Screening



- Numerator (# patients screened) has steadily increased since 2007 as the denominator (# eligible patients) has remained fairly steady

Population health

- Examples of metrics
 - Health and wellbeing, e.g. life expectancy at birth
 - Social determinants of health, community health (high school graduation rates in a community, percent unemployment, average income in a community,...)
 - Health equity and disparities, e.g. life expectancy at birth for wealthy v. poor populations,
 - Access to health care services, e.g. percent of population with regular primary care provider
- Sources of data
 - “Big data” (Health system + non-health system data sources)
- Data uses ???



Place and Socio-Economic Issues Matter

Population life expectancy in NH

Hanover, NH: 85.3 years

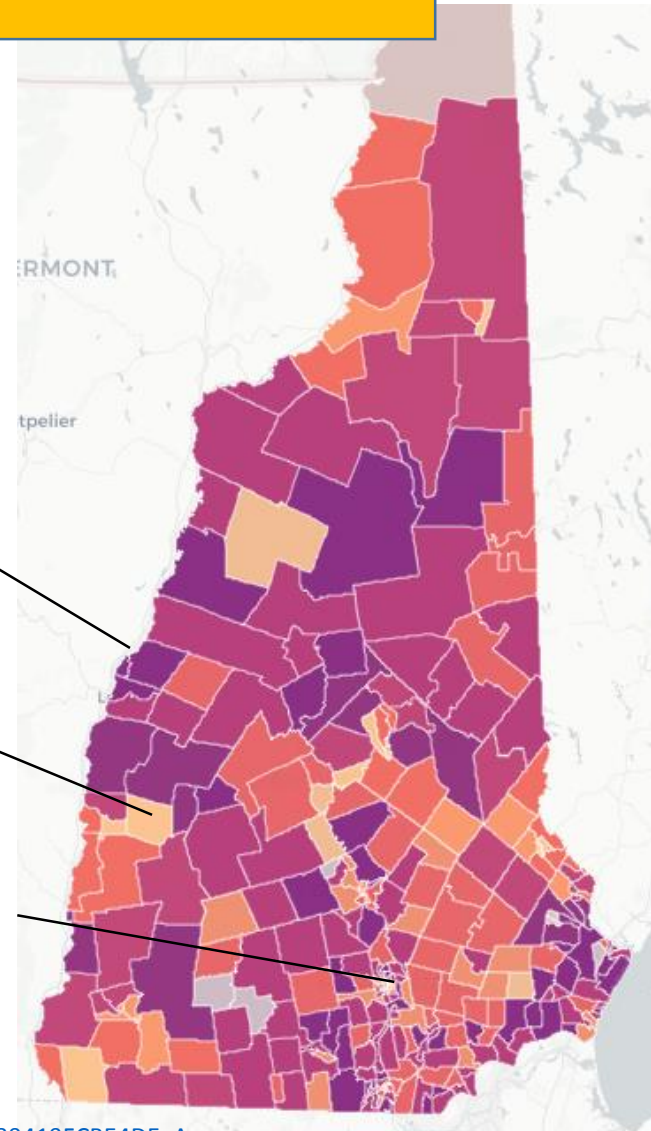
- \$97,054 median household income
- 2.5% < 100% of poverty level
- 4.9% < 200% of poverty level

Newport, NH: 75.9 years

- \$51,000 median household income
- 5.8% < 100% of poverty level
- 20.6% < 200% of poverty level

Manchester, NH: 73.9yrs.-88.5yrs

- \$ 53,278 median household income (but varies widely)
- 3 census tracts: >40% of households have less than 100% of poverty level



Sources:

Life Expectancy: https://wisdom.dhhs.nh.gov/wisdom/#Topic_E2DB3F7B3290434BACC780419FCBE4DE_Anon

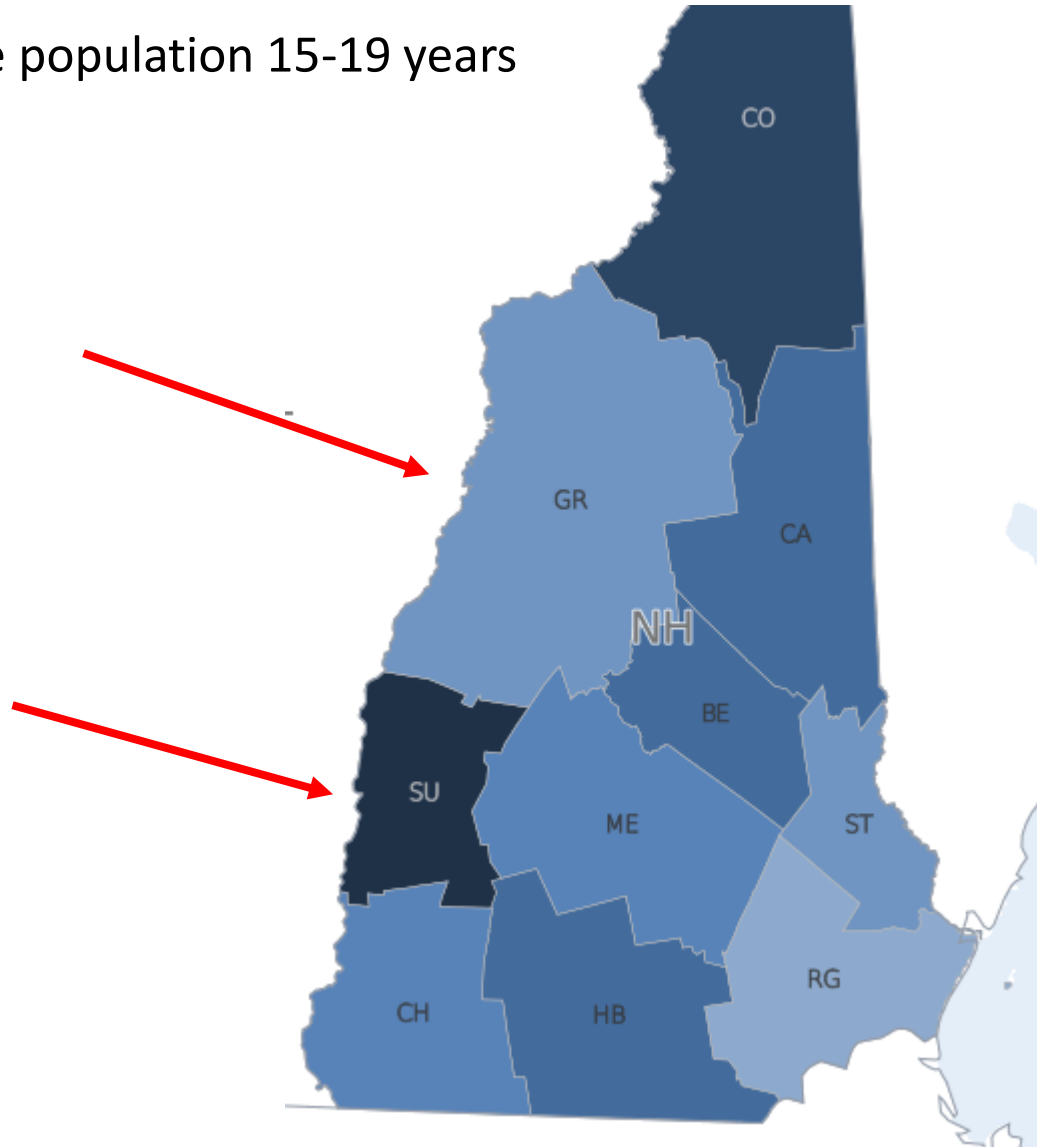
Income/Poverty: 2015 D-HH Community Health Needs Assessments, Manchester Dept. of Health

Teen Births

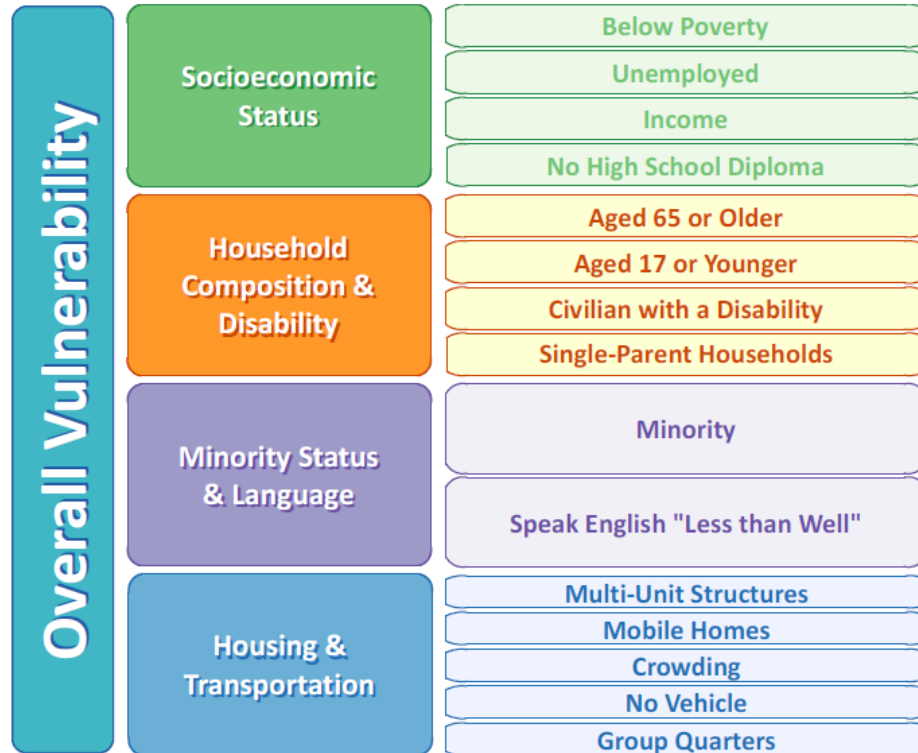
Number of births/1000 female population 15-19 years

Grafton County: 12

Sullivan County: 27



CDC – Social Vulnerability

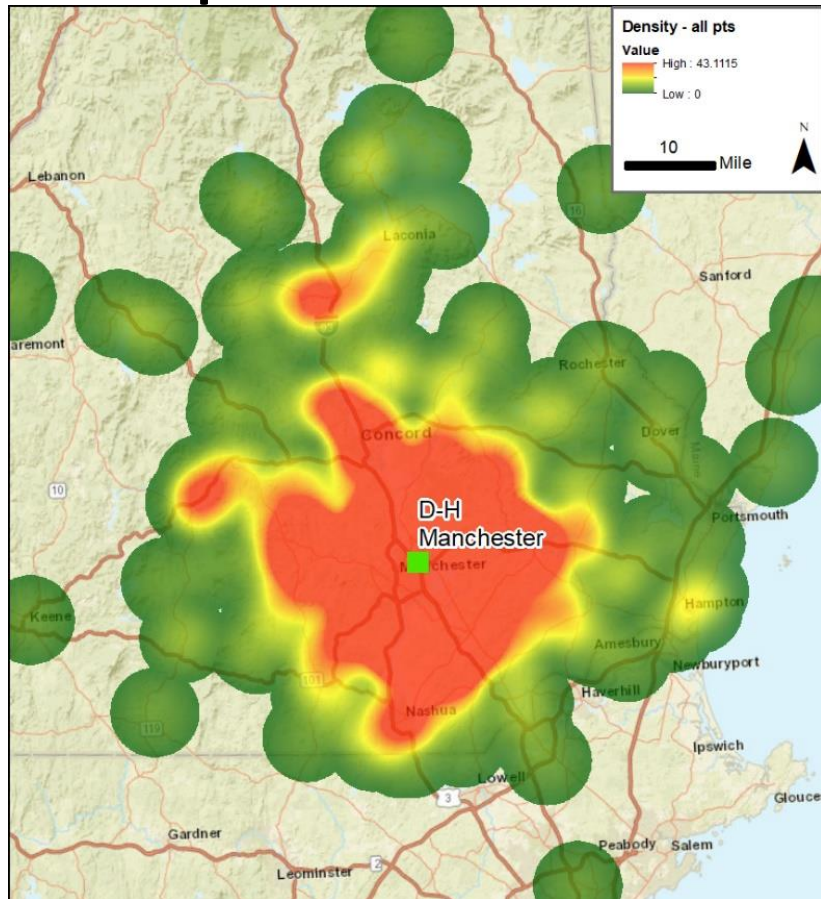


The degree to which a community exhibits certain social conditions, including high poverty, low percentage of vehicle access, or crowded households, may affect that community's ability to prevent human suffering and financial loss in the event of disaster. These factors describe a community's social vulnerability.

Heat maps (density of DM patients)

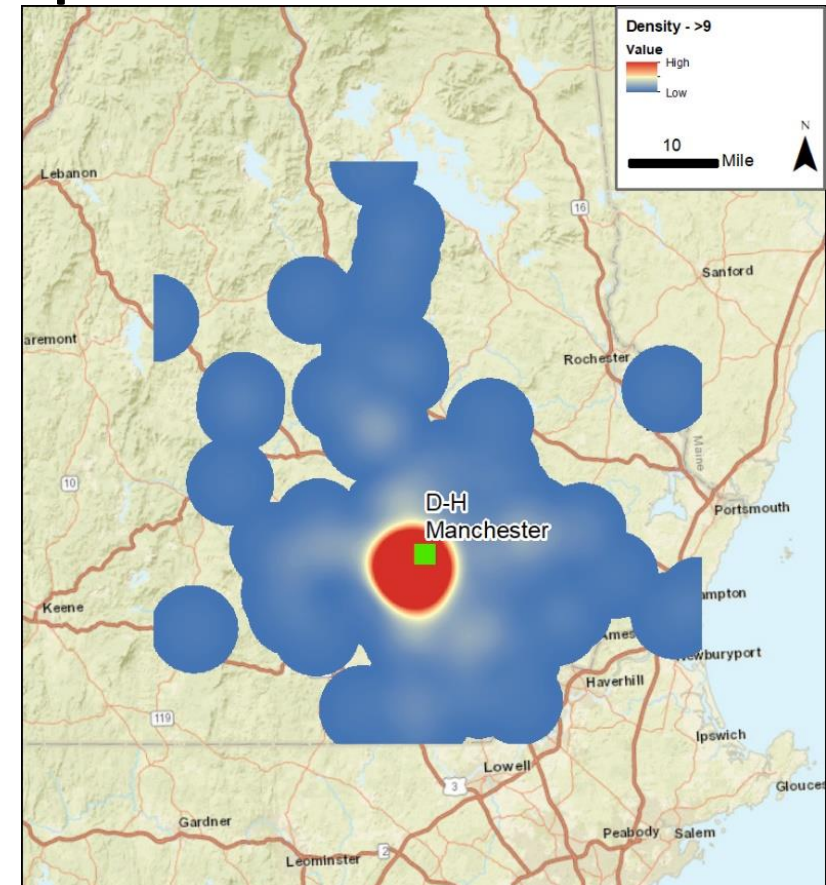
All DM Patients

– 119 unique ZIP codes



A1C>9 DM Patients

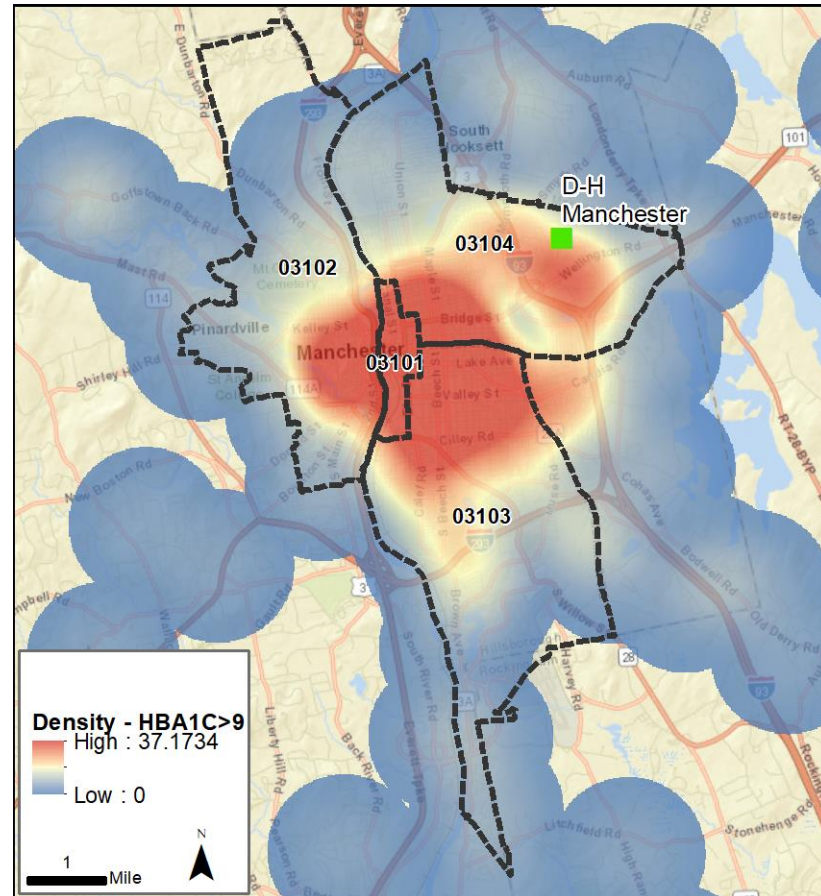
- 50 unique ZIP codes



4 ZIP codes, 57% of A1C>9

4 ZIP codes

216 of 376 patients (57%) A1C>9

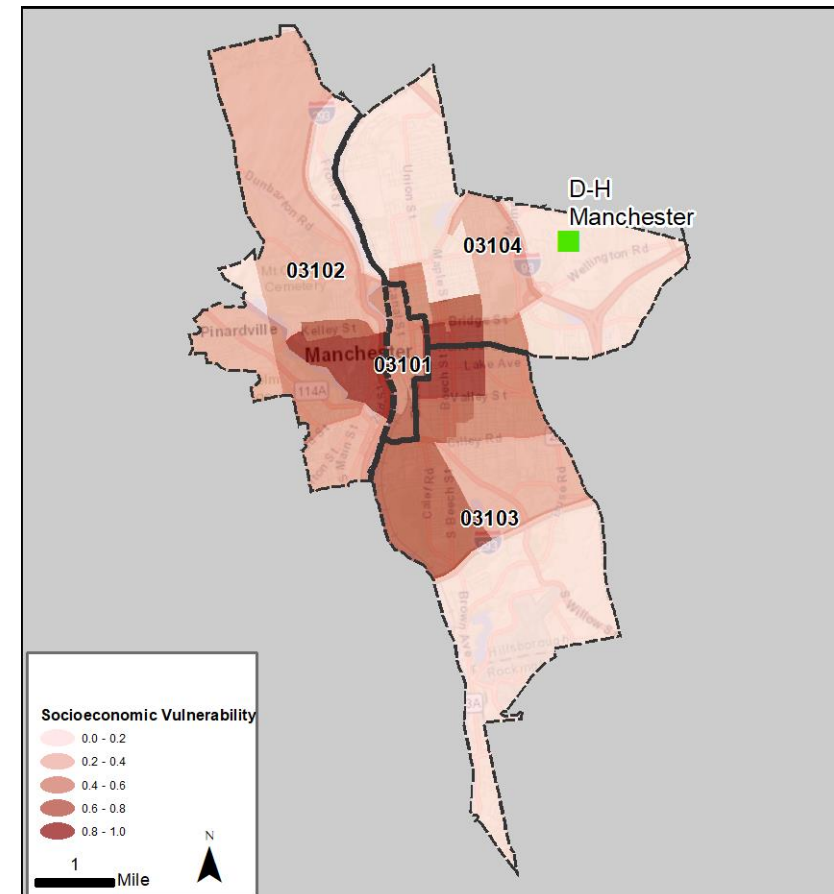
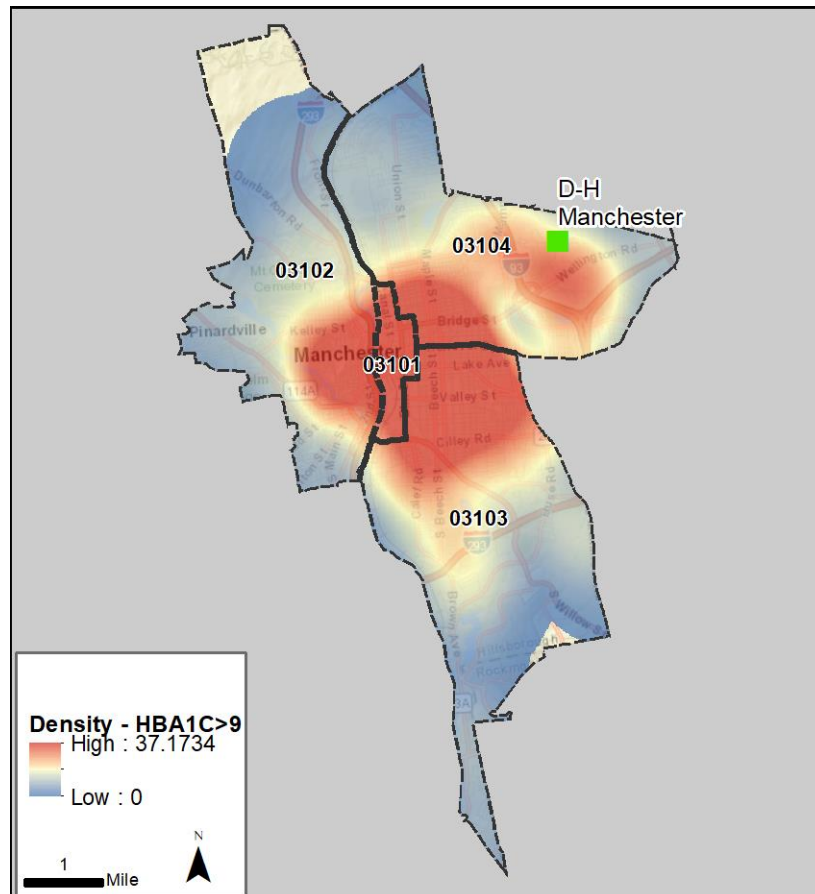


SocioEconomic Vulnerability

4 ZIP codes

216 of 376 patients (57%) A1C>9

SocioEconomic Vulnerability Index



COMMUNITY HEALTH NEEDS ASSESSMENT

FISCAL YEAR 2019



COMMUNITY INPUT ON HEALTH ISSUES AND PRIORITIES, SELECTED
SERVICE AREA DEMOGRAPHICS AND HEALTH STATUS INDICATORS

DH-APD Healthcare Service Area Median Household Income by Town

*Median Household Income

VRH service area: \$71,051

State of NH: \$68,485

State of VT: \$56,104

*Percent with no Health Insurance

DH-APD service area: 7.1%

State of NH: 8.4%

State of VT: 5.3%

*Percent with Medicare

DH-APD service area: 18.6%

State of NH: 17.5%

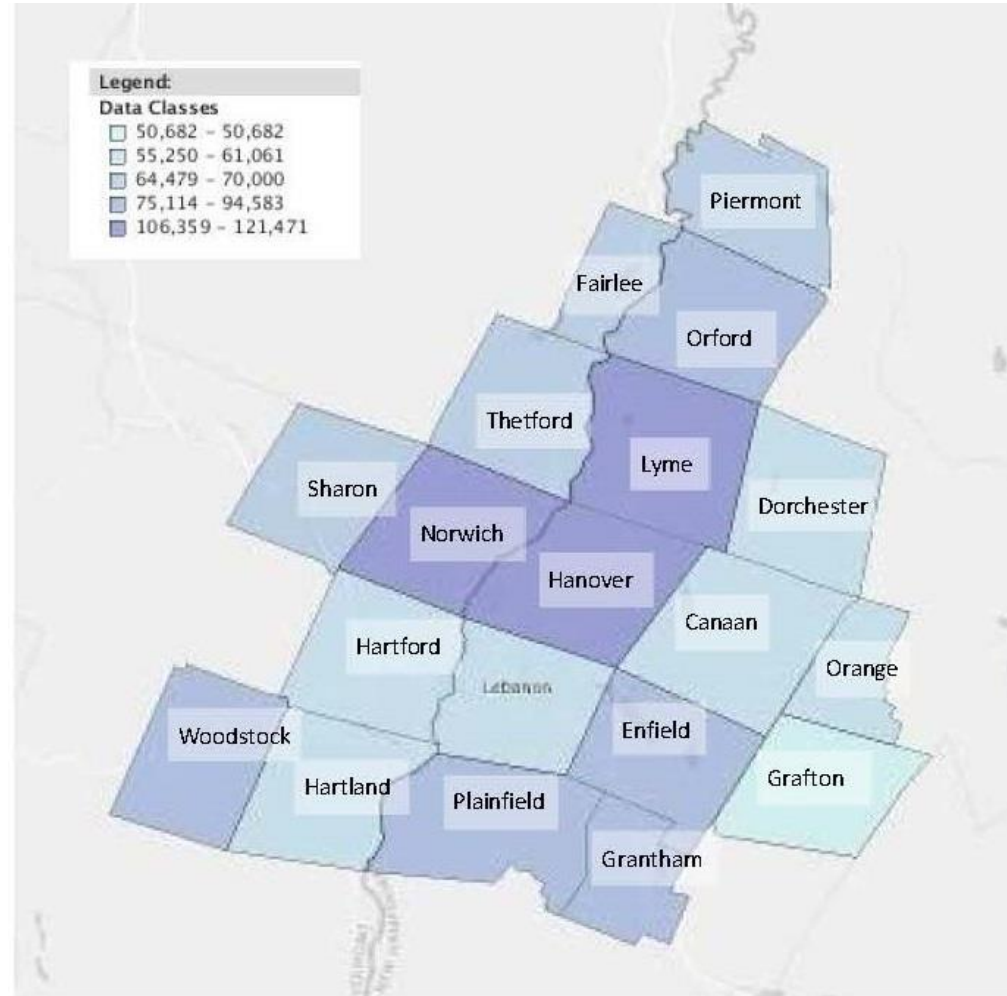
State of VT: 19.3%

*Percent with Medicaid

DH-APD service area: 12.5%

State of NH: 11.8%

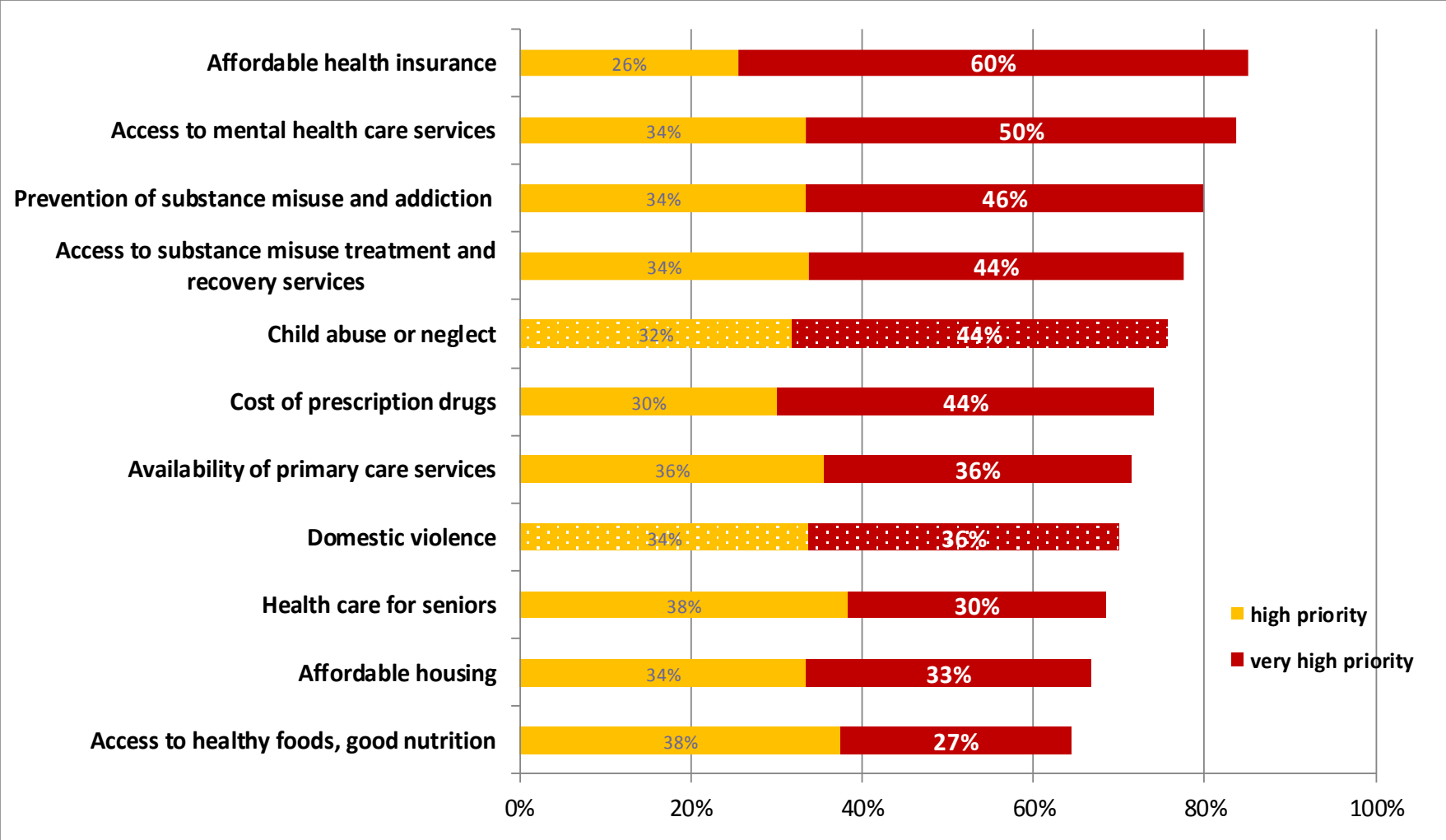
State of VT: 24.9%



*Data Source: U.S. Census Bureau, 2012 – 2016
 American Community Survey 5-Year Estimates

Community Health Improvement Priorities

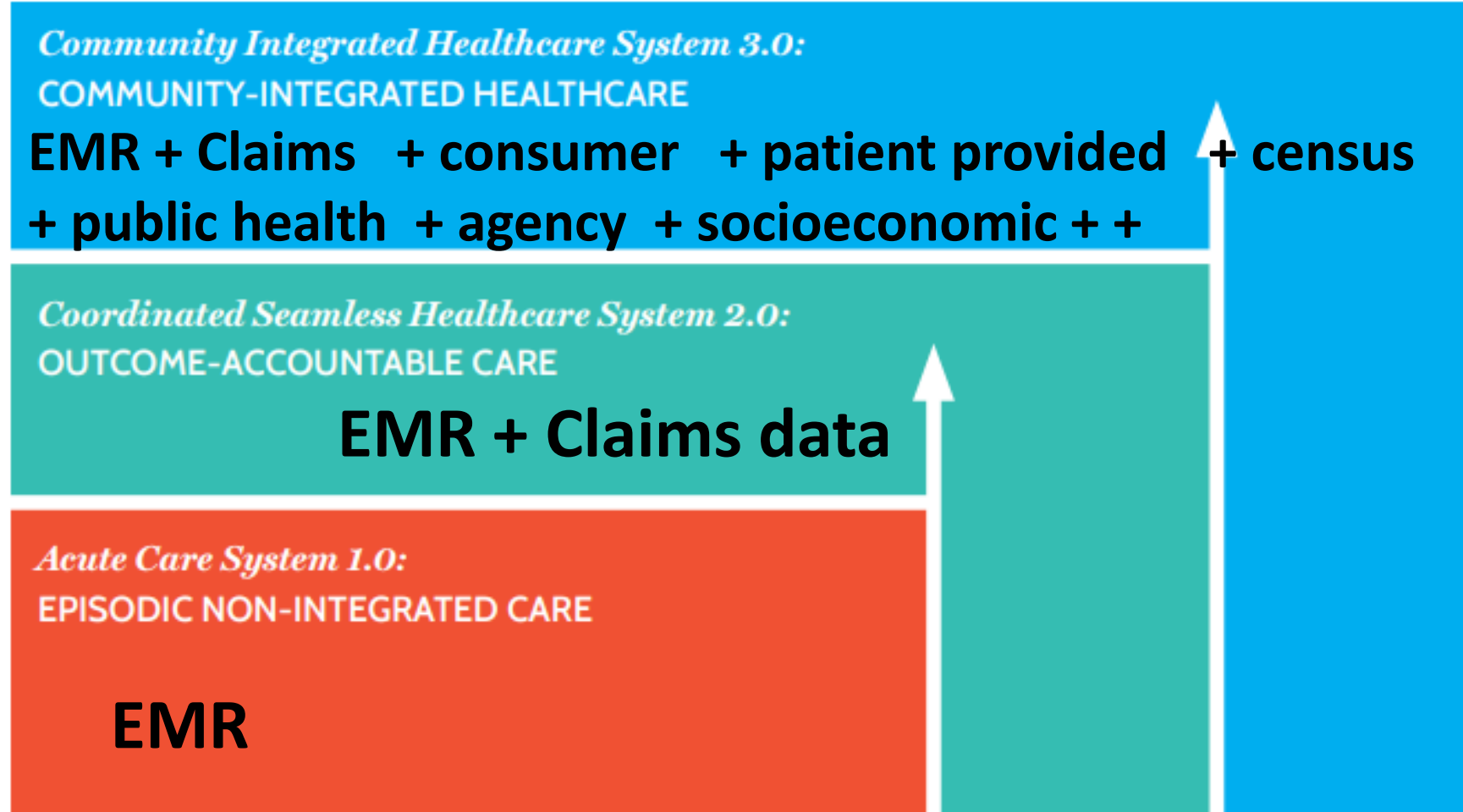
Community Survey Respondents



The chart displays the percentage of respondents indicating the topic is a high priority (yellow) or very high priority (red; needs are mostly unmet). Other response choices were moderate priority, somewhat low priority and low priority; needs are mostly met.

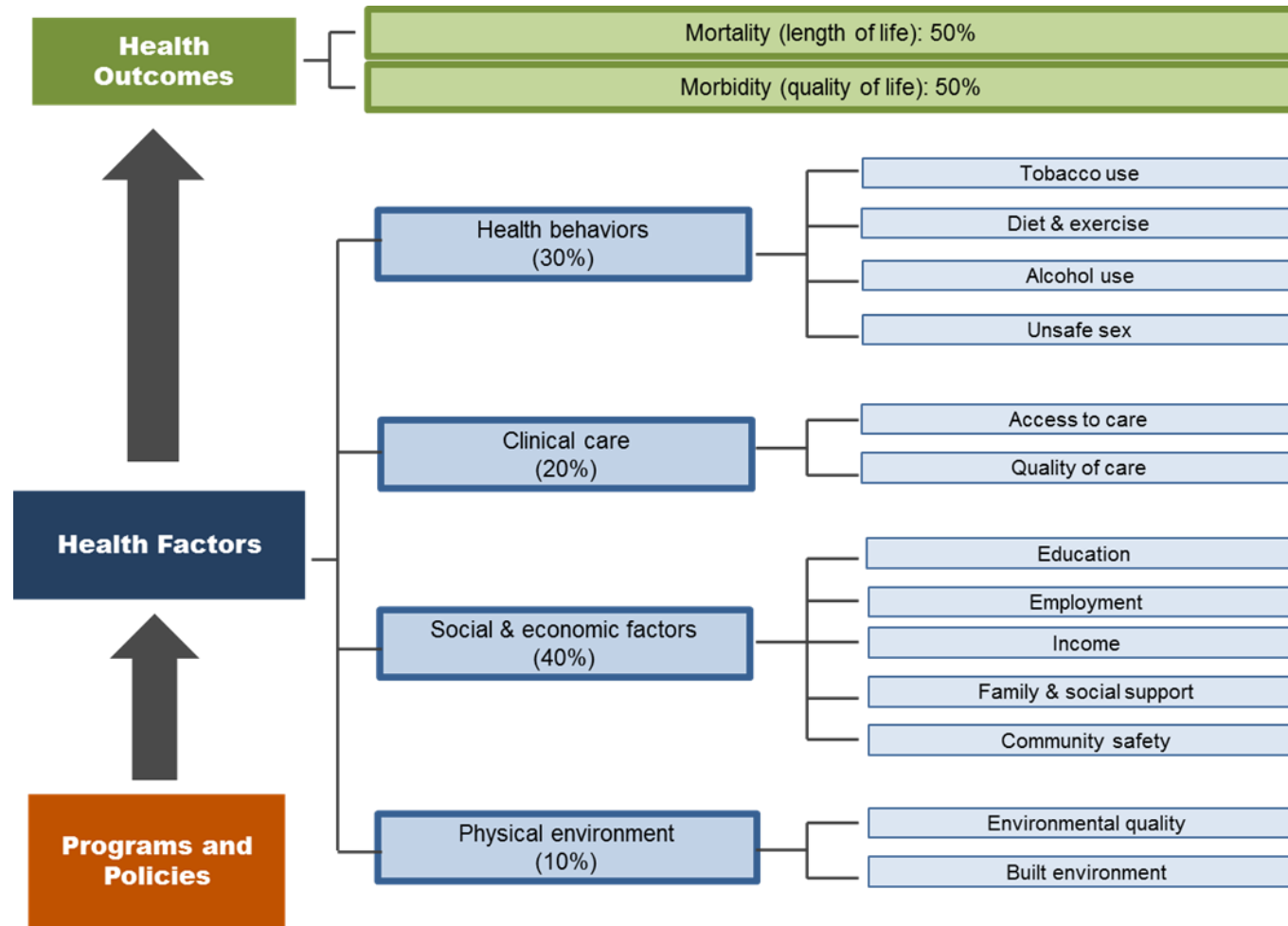
Data & Information Systems

(more questions than answers)



Adapted from Hester et al., 2015.

Socioeconomic and behavioral factors determine 80% of health



Questions for IT Professionals

- Who is on this journey from episode-based care to population health?
- What kind of external data sources are you using for population health?
- What data do you want to use that you aren't using?
- How do you make data accessible to people in your health system?
- How are data connected?
- How do you overlay disparate data sources to analyze a complex problem?
- What tools are you using?
- What are vendors doing to accelerate this transition?
- What are the challenges you have experienced?
- Who has built the IS systems to deliver the data and analytics to support that evolution?

- How can we prepare for the next 5 - 10 years? What will be the skills, knowledge, competencies of the IS-Data systems of the future?