Social Determinants of Health

Massachusetts Medical Society
April 4, 2017
Thea James, M.D.
Associate Professor Of Emergency Medicine
VP of Mission & Associate CMO
Boston Medical Center

BOSTON UNIVERSITY SCHOOL of Medicine

BOSTON MEDICAL CENTER
EXCEPTIONAL CARE. WITHOUT EXCEPTION.

Objectives

- Social Determinants Of Health and Medicine
- Context for Health Care Transformation and Mission
  - What is the Mission?
  - Breaking Cycles
- Paradigm Shift
  - Approach
- Models of addressing SDOH

Social Determinants of Health

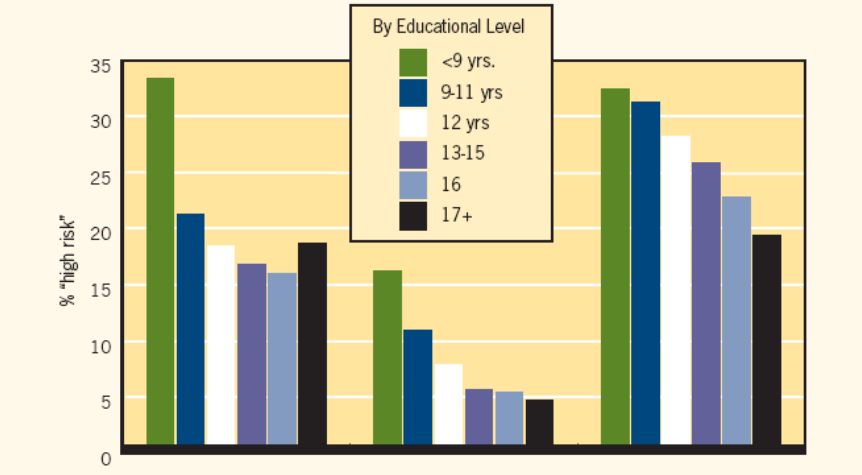
Definition

- The social determinants of health are the conditions in which people are born, grow, live, work and age and the wider set of forces and systems shaping the conditions of daily life.

- These circumstances are shaped by the

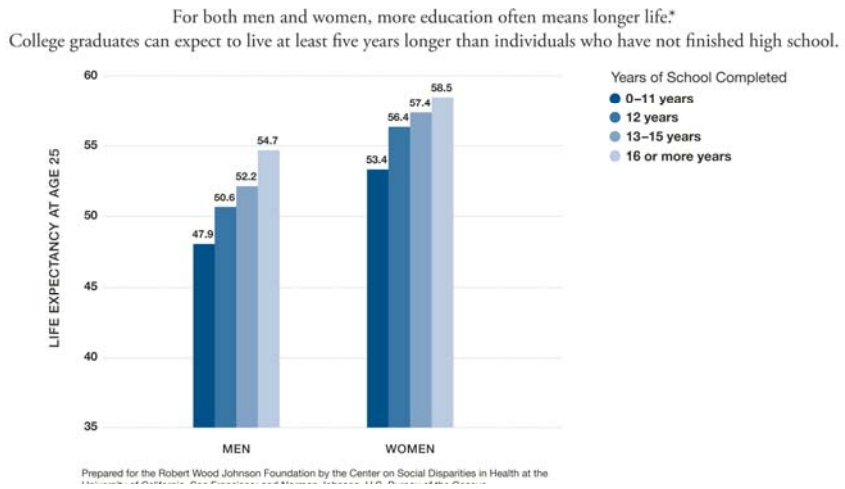
Social Determinants of Health

Social Determinant: Education



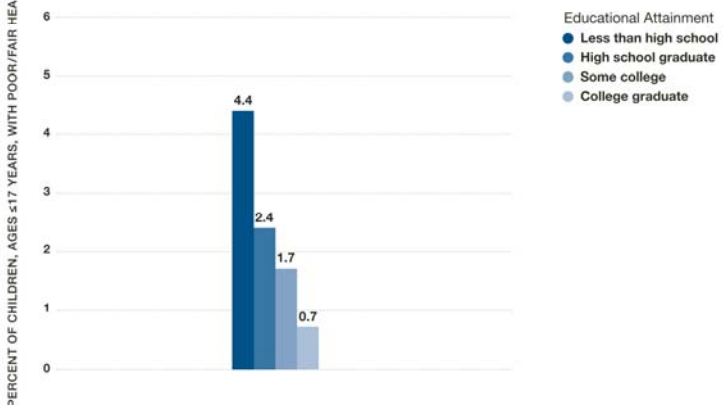
Source: National Health interview Survey,2001-05 Robert Wood Johnson Foundation, 2008

Education and Mortality



Parent Education and Children's Health

Children whose parents have not finished high school are over six times as likely to be in poor or fair health as children whose parents are college graduates.



Premature death rates per 1,000 by T stop, 1999-2001

Chen JT, Rehkopf DH, Waterman PD, Subramanian SV, Coull BA, Cohen B, Ostrem M, Krieger N. Mapping and Measuring Social Disparities in Premature Mortality: The Impact of Census Tract Poverty within and among Boston Neighborhoods, 1999–2001. J Urban Health. 2006; 83(6): 1063–1084

Homicide rates per 100,000 by T stop, 2005-2011

Health of Boston 2012-2013: A neighborhood focus. Boston Public Health Commission. <http://www.bphc.org/healthdata/[illegible]/Pages/Health-of-Boston-Report.aspx> Accessed February 9, 2015.

Percent of families below the poverty line by T stop, 2008-2012

Poverty in Boston. Boston Redevelopment Authority, Research Division, March 2014. <[illegible]> Accessed February 23, 2015.

...and despite the fact that they do not differ greatly on geographic closeness to health services

Google Maps. <https://www.google.com/maps/> Accessed March 17, 2015.

Research

JAMA Internal Medicine | Original Investigation

Addressing Unmet Basic Resource Needs as Part of Chronic Cardiometabolic Disease Management

Seth A. Berkowitz, MD, MPH; Amy Catherine Hulberg, MPP; Sara Standish, MBA; Gaily Reznor, MS; Steven J. Atlas, MD, MPH

IMPORTANCE It is unclear if helping patients meet resource needs, such as difficulty affording food, housing, or medications, improves clinical outcomes.

OBJECTIVE To determine the effectiveness of the Health Leads program on improvement in systolic and diastolic blood pressure (SBP and DBP, respectively), low-density lipoprotein cholesterol (LDL-C) level, and hemoglobin A_{1c} (HbA_{1c}) level.

DESIGN, SETTING, AND PARTICIPANTS A difference-in-difference evaluation of the Health Leads program was conducted from October 1, 2012, through September 30, 2015, at 3 academic primary care practices. Health Leads consists of screening for unmet needs at clinic visits, and offering those who screen positive to meet with an advocate to help obtain resources, or receive brief information provision.

MAIN OUTCOMES AND MEASURES Changes in SBP, DBP, LDL-C level, and HbA_{1c} level. We compared those who screened positive for unmet basic needs (Health Leads group) with those who screened negative, using intention-to-treat, and, secondarily, between those who did and did not enroll in Health Leads, using linear mixed modeling, examining the period before and after screening.

RESULTS A total of 5125 people were screened, using a standardized form, for unmet basic resource needs; 3351 screened negative and 1774 screened positive. For those who screened positive, the mean age was 57.6 years and 1811 (56%) were women. For those who screened negative, the mean age was 56.7 years and 909 (57%) were women. Of 5125 people screened, 1774 (35%) reported at least 1 unmet need, and 1021 (58%) of those enrolled in Health Leads. Median follow-up for those who screened positive and negative was 34 and 32 months, respectively. In unadjusted intention-to-treat analyses of 1998 participants with hypertension, the Health Leads group experienced greater reduction in SBP (differential change, −1.2; 95% CI, −2.1 to −0.4) and DBP (differential change, −1.0; 95% CI, −1.5 to −0.5). For 2281 individuals with an indication for LDL-C level lowering, results also favored the Health Leads group (differential change, −3.7, 95% CI −6.7 to −0.6). For 774 individuals with diabetes, the Health Leads group did not show HbA_{1c} level improvement (differential change, −0.04%; 95% CI, −0.17% to 0.10%). Results adjusted for baseline demographic and clinical differences were not qualitatively different. Among those who enrolled in Health Leads program, there were greater BP and LDL-C level improvements than for those who declined (SBP differential change −2.6; 95% CI, −3.5 to −1.7; SBP differential change, −1.4; 95% CI, −1.9 to −0.9; LDL-C level differential change, −6.3; 95% CI, −9.7 to −2.8).

CONCLUSIONS AND RELEVANCE Screening for and attempting to address unmet basic resource needs in primary care was associated with modest improvements in blood pressure and lipid, but not blood glucose, levels.

Invited Commentary page 252

Supplemental content at jamainternalmedicine.com

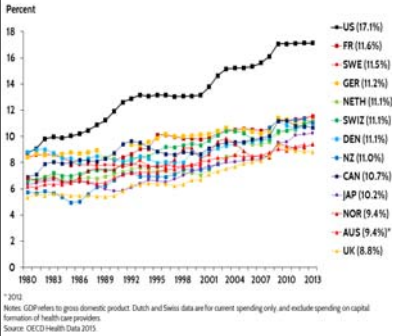
Author Affiliations: Division of General Internal Medicine, Massachusetts General Hospital, Boston (Berkowitz, Reznor, Atlas); Diabetes Population Health Research Center, Massachusetts General Hospital, Boston (Berkowitz); Harvard Medical School, Boston, Massachusetts (Berkowitz, Atlas); Health Leads, Boston, Massachusetts (Hulberg, Standish).

Corresponding Author: Seth A. Berkowitz, MD, MPH, Division of General Internal Medicine, Massachusetts General Hospital, 50 Staniford St, Ninth Floor, Boston, MA 02114 (saberkowitz@partners.org).

JAMA Intern Med. 2017;177(2):244-252. doi:10.1001/jamainternmed.2016.7691
Published online December 12, 2016.

We know that the US spends more and achieves less

Exhibit 1. Health Care Spending as a Percentage of GDP, 1980–2013



* 2012.
Notes: GDP refers to gross domestic product. Dutch and Swiss data are for current spending only, and exclude spending on capital formation of health care providers.
Source: OECD Health Data 2015.

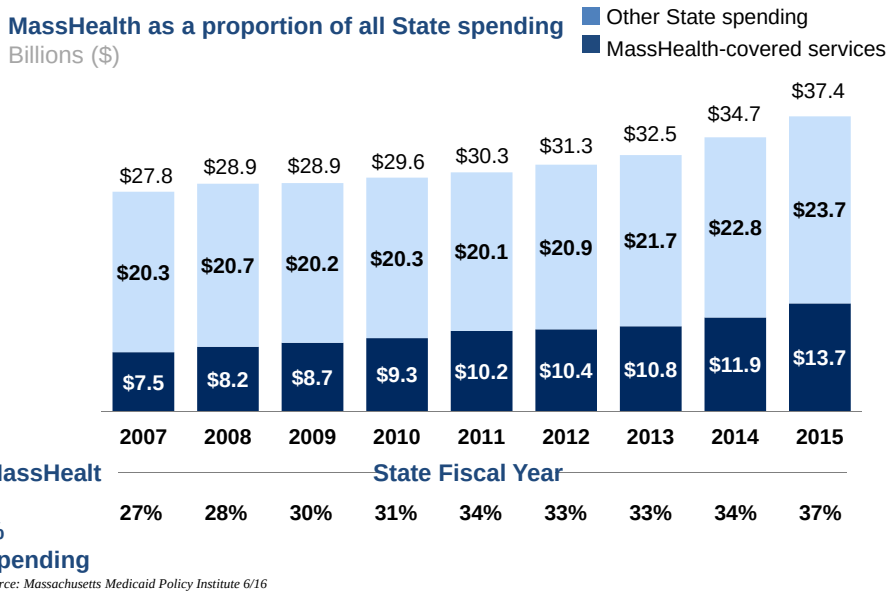
Exhibit 9. Select Population Health Outcomes and Risk Factors

	Life exp. at birth, 2013[a]	Infant mortality, per 1,000 live births, 2013[a]	Percent of pop. age 65+ with two or more chronic conditions, 2014[b]	Obesity rate (BMI>30), 2013[a,c]	Percent of pop. (age 15+) who are daily smokers, 2013[a]	Percent of pop. age 65+
Australia	82.2	3.6	54	28.3[e]	12.8	14.4
Canada	81.5[e]	4.8[e]	56	25.8	14.9	15.2
Denmark	80.4	3.5	–	14.2	17.0	17.8
France	82.3	3.6	43	14.5[d]	24.1[d]	17.7
Germany	80.9	3.3	49	23.6	20.9	21.1
Japan	83.4	2.1	–	3.7	19.3	25.1
Netherlands	81.4	3.8	46	11.8	18.5	16.8
New Zealand	81.4	5.2[e]	37	30.6	15.5	14.2
Norway	81.8	2.4	43	10.0[d]	15.0	15.6
Sweden	82.0	2.7	42	11.7	10.7	19.0
Switzerland	82.9	3.9	44	10.3[d]	20.4[d]	17.3
United Kingdom	81.1	3.8	33	24.9	20.0[d]	17.1
United States	78.8	6.1[e]	68	35.3[d]	13.7	14.1
OECD median	81.2	3.5	–	28.3	18.9	17.0

[a] Source: OECD Health Data 2015.
[b] Includes: hypertension or high blood pressure, heart disease, diabetes, lung problems, mental health problems, cancer, and joint pain/arthritis. Source: Commonwealth Fund International Health Policy Survey of Older Adults, 2014.
[c] DEN, FR, NETH, NOR, SWE, and SWIZ based on self-reported data; all other countries based on measured data.
[d] 2012. [e] 2011.

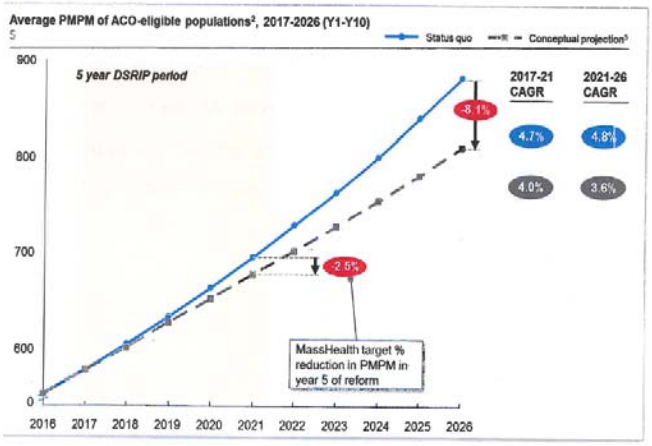
13

MassHealth spend is growing at an unsustainable rate



Source: Massachusetts Medicaid Policy Institute 6/16

The State is aiming to reduce spending off trend 2.5% over 5 years . . .

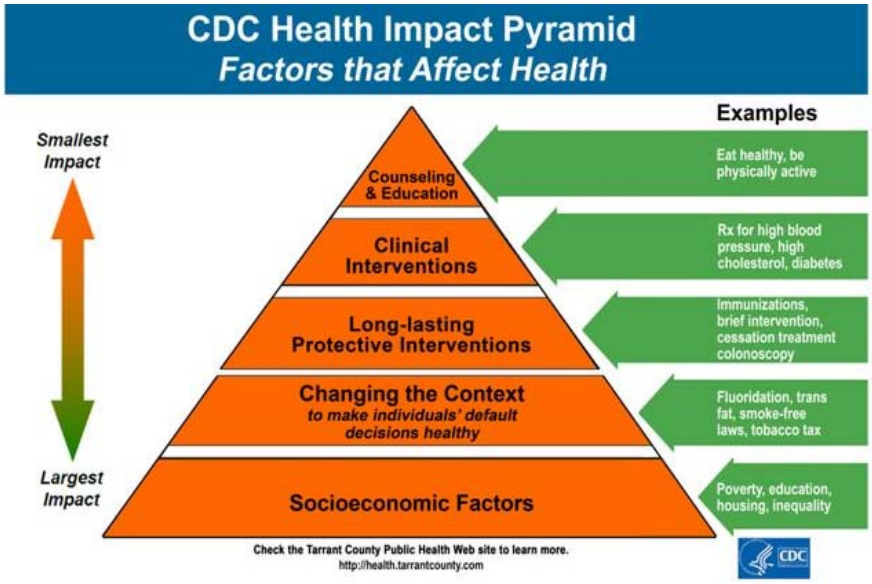


- MassHealth approaching **40% of their budget**
- State is looking to reduce spending off trend **2.5% over 5 years**…
- … and fundamentally alter the trajectory of healthcare cost growth in the longer term

Source: MassHealth communication January 2016

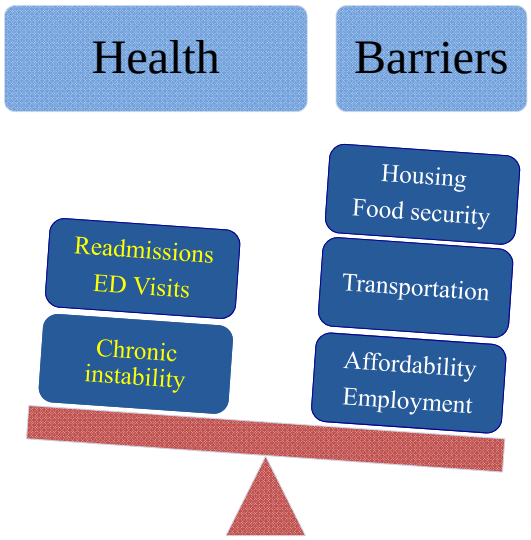
5

Paradigm Shift



16

Barriers to Stable Health



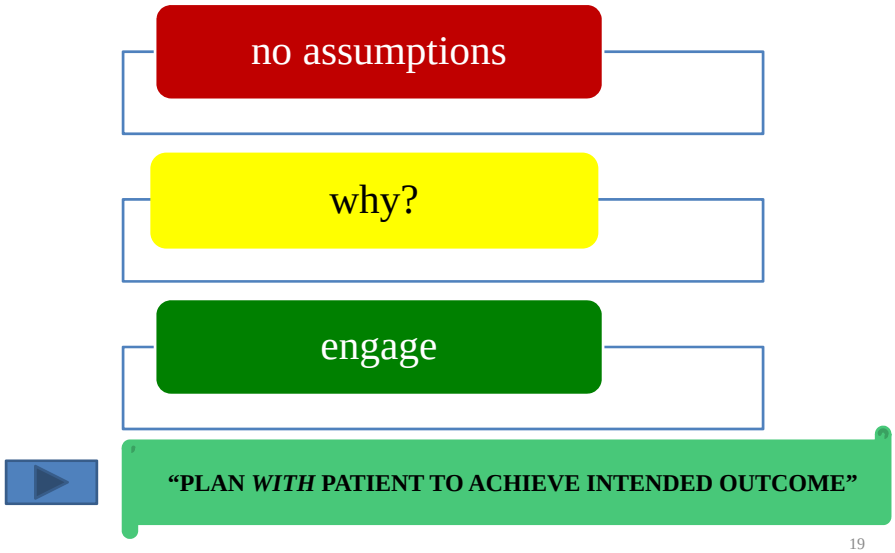
17

New residents at BMC attend orientation, which includes a workshop on the social determinants of health. (Martha Bebinger/WBUR)

- Integrating the paradigm shift in the traditional medical model

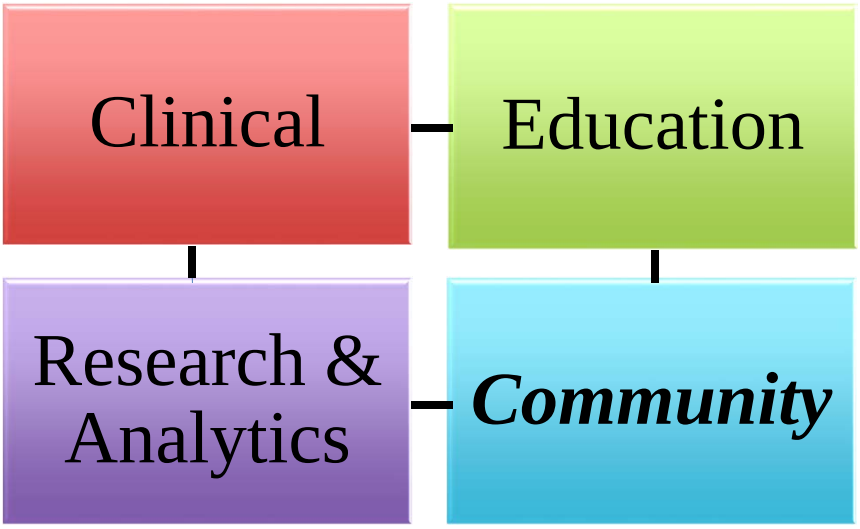
10

Tangible:
What You Can Do Immediately



19

Framework



20

Intervention Models

Fresh Truck
Food RX

Estimating Cost Reductions Associated with the Community Support Program for People Experiencing Chronic Homelessness (CSPECH)

March 8, 2017

Thomas Byrne, PhD
Boston University School of Social Work

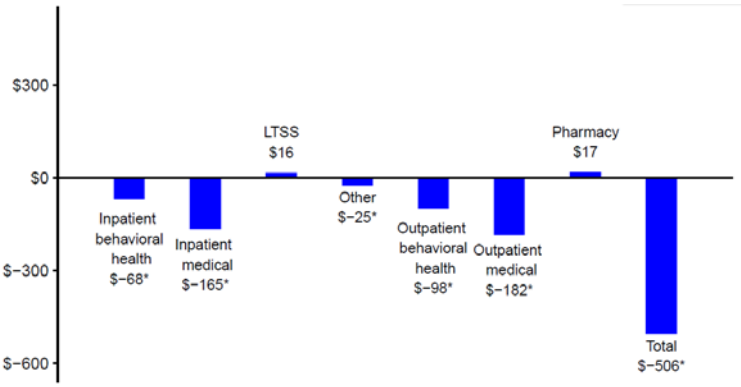
MASSACHUSETTS MEDICAID POLICY INSTITUTE

FOUNDATION MASSACHUSETTS

Pine Street Inn
Ending Homelessness

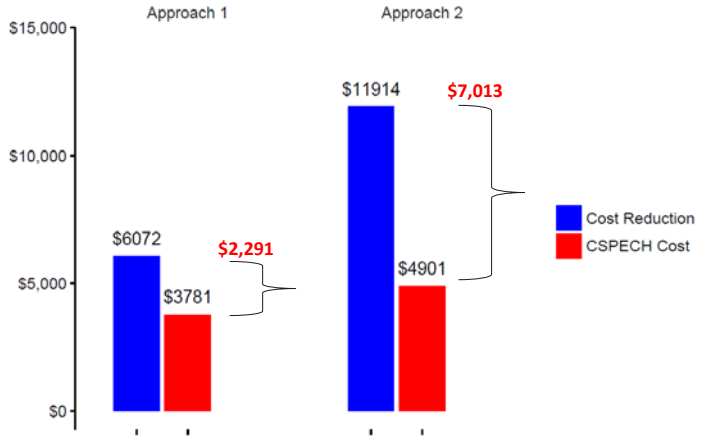
ANALYTIC APPROACH 1

Estimated Change in Average Monthly Per Person Health Care Costs in 2-year Period Following CSPECH Entry



* P <.05

NET COST OF CSPECH

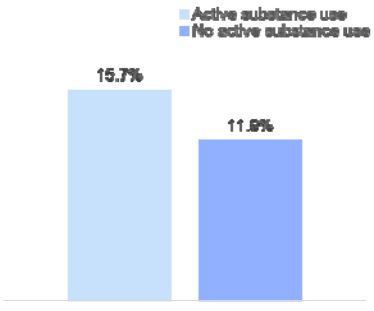


MARCH 2017

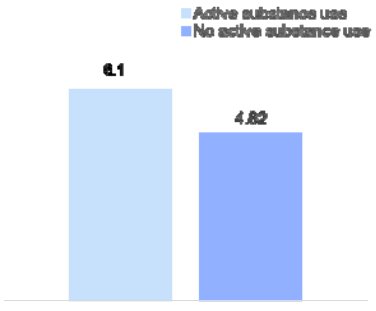
BLUE CROSS BLUE SHIELD OF MASSACHUSETTS FOUNDATION
MASSACHUSETTS MEDICAID POLICY INSTITUTE
& PINE STREET INN

Patients with underlying substance use issues have higher readmission rates and length of stay, regardless of diagnosis

Readmission rate, by substance use status
Percentage



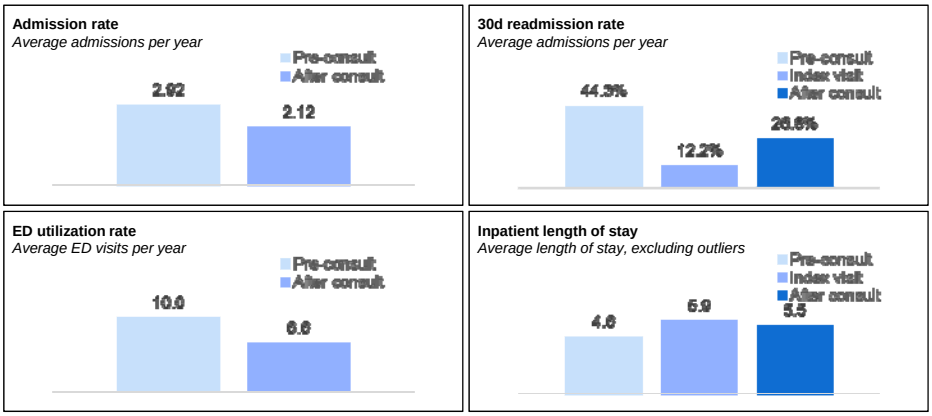
Average inpatient LOS, by substance use status
Midnights



Source: Internal BMC admission / billing data; May 2014-June 2015.

26

Subsequent readmissions, admissions, and ED use decrease after Addiction Medicine consult, but LOS increases slightly



Source: Internal BMC data; January 2015-December 2015

27

Thank you