Social Determinants of Health

Massachusetts Medical Society
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VP of Mission & Associate CMO
Boston Medical Center

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 Determinant: Education


By Educational Level
- <9 yrs.
- 9-11 yrs
- 12 yrs
- 13-15
- 16
- 17+

Education and Mortality

For both men and women, more education often means longer life. College graduates can expect to live at least five years longer than individuals who have not finished high school.
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

If you get off at Arlington: 2.6
If you get off at Fenway: 4.3
If you get off at Dudley Square: 5.9
If you get off at Mattapan: 4.4
Homicide rates per 100,000 by T stop, 2005-2011

If you get off at Arlington: 2.1
If you get off at Fenway: 5.7
If you get off at Dudley Square: 16.4
If you get off at Mattapan: 32.2

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

If you get off at Arlington: 4%
If you get off at Fenway: 14%
If you get off at Dudley Square: 32%
If you get off at Mattapan: 16%
...and despite the fact that they do not differ greatly on geographic closeness to health services

[Google Map: https://www.google.com/maps/@37.7749,-122.4194,3z]

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

- Addressing barriers to health care access, such as difficulty accessing food, housing, or transportation (remote locations).

- Implementing the effectiveness of health care delivery or improvement in health care delivery (e.g., telemedicine or mobile health applications).

- Identifying individuals at high risk of chronic illness (e.g., diabetes, obesity).

- Examining the effectiveness of health promotion programs or improvements in health promotion programs (e.g., nutrition or physical activity programs).

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We know that the US spends more and achieves less.

MassHealth spend is growing at an unsustainable rate.

MassHealth as a proportion of all State spending

<table>
<thead>
<tr>
<th>Billions ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$27.8</td>
</tr>
<tr>
<td>$20.3</td>
</tr>
<tr>
<td>$7.5</td>
</tr>
</tbody>
</table>


MassHealth % spending

<table>
<thead>
<tr>
<th>State Fiscal Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>27%</td>
</tr>
</tbody>
</table>

Source: Massachusetts Medicaid Policy Institute 8/16
The State is aiming to reduce spending off trend 2.5% over 5 years . . .

Source: MassHealth communication January 2016

Paradigm Shift

CDC Health Impact Pyramid
Factors that Affect Health

Examples

- Counseling & Education
  - Eat healthy, be physically active

- Clinical Interventions
  - Rx for high blood pressure, high cholesterol, diabetes

- Long-lasting Protective Interventions
  - Immunizations, brief interventions, cessation treatment, colorectal cancer screening

- Changing the Context to make individuals' default decisions healthy
  - Fluoridation, trans fat, smoke-free laws, tobacco tax

- Socioeconomic Factors
  - Poverty, education, housing, inequality

Check the Tarrant County Public Health Web site for more information: http://health.tarantacounty.com
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
Tangible: What You Can Do Immediately

- no assumptions
- why?
- engage

“PLAN WITH PATIENT TO ACHIEVE INTENDED OUTCOME”

Framework

- Clinical
- Education
- Research & Analytics
- Community
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

ANALYTIC APPROACH 1

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

* P < .05
Patients with underlying substance use issues have higher readmission rates and length of stay, regardless of diagnosis.

<table>
<thead>
<tr>
<th>Readmission rate, by substance use status</th>
<th>Average inpatient LOS, by substance use status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>Midnights</td>
</tr>
<tr>
<td>Active substance use</td>
<td>Active substance use</td>
</tr>
<tr>
<td>15.7%</td>
<td>6.1</td>
</tr>
<tr>
<td>No active substance use</td>
<td>No active substance use</td>
</tr>
<tr>
<td>11.9%</td>
<td>4.82</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Metric</th>
<th>Pre-consult</th>
<th>After consult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission rate</td>
<td>2.92</td>
<td>2.12</td>
</tr>
<tr>
<td>30d readmission rate</td>
<td>44.3%</td>
<td>12.2%</td>
</tr>
<tr>
<td>ED utilization rate</td>
<td>10.0</td>
<td>6.9</td>
</tr>
<tr>
<td>Inpatient length of stay</td>
<td>4.6</td>
<td>6.9</td>
</tr>
</tbody>
</table>

Source: Internal BMC data; January 2015-December 2015

Thank you