Population Health Metrics

Steven Teutsch, MD, MPH
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Today’s Discussion

• Reprise of an Environmental Scan done for the National Quality Forum (NQF)
• Some measure sets
An Environmental Scan of Integrated Approaches for Defining and Measuring Total Population Health by the Clinical Care System, the Government Public Health System and Stakeholder Organizations

Dawn Marie Jacobson, MD, MPH
Public Health Institute | www.phi.org

Steven Teutsch, MD, MPH
County of Los Angeles Department of Public Health | www.laphilhealth.org
Four Aims of the Environmental Scan

1. To provide an integrated set of definitions for population health, the determinants of health, and health improvement activities

2. To review existing measurement frameworks used by the clinical care and government public health systems to assess and track total population health, the determinants of health, and health improvement activities

3. To propose an integrated measurement framework that includes measures of total population health, the determinants of health, and health improvement activities

4. To discuss the challenges and opportunities for aligning health improvement activities and measurement across the clinical care system and the governmental public health system, in partnership with stakeholder organizations
## What is a Population?

<table>
<thead>
<tr>
<th></th>
<th>Clinical Care System</th>
<th>Governmental Public Health System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>No clear definition: Usually means covered or served population</td>
<td>People within a jurisdiction</td>
</tr>
<tr>
<td>Total or General Population</td>
<td>Not in general use</td>
<td>Implied, but full term rarely used</td>
</tr>
<tr>
<td>Subpopulation</td>
<td>A specified subset of the population for whom an intervention is intended OR likely to be more susceptible to a condition of interest</td>
<td>A group in individuals within a jurisdiction who share a trait or characteristics</td>
</tr>
<tr>
<td>Covered/Service Population</td>
<td>A group of people who receive services from a provider or who pay premiums</td>
<td>The extent of financial protection OR those who benefit from a service available to all</td>
</tr>
</tbody>
</table>
Populations and Subpopulations

Definitions

- Total Population (geopolitical area)
- Subpopulation (clinical care system)
- Subpopulation (government public health system)
- Subpopulation (stakeholder system/systems)
## Population Health

<table>
<thead>
<tr>
<th>Academia</th>
<th>Clinical Care System</th>
<th>Public Health System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidemiology: the health of a population measured by health status indicators; influenced by physical, biological, social, and economic factors in the environment, by personal health behavior, and by access to and effectiveness of healthcare services.</td>
<td>an emerging term within the clinical care system, most commonly seen in reference to maintaining patient registries based on diagnosis, medications, laboratory results, preventive screenings that can be used to track processes and immediate health outcomes in the subpopulation of patients receiving care from a facility within the clinical care system.</td>
<td>the health of a population measured by health status indicators; influenced by physical, biological, behavioral, social, cultural, and economic and other factors the prevailing or aspired level of health of the population, or a specified subset of the population. the health outcomes of a group of individuals, including the distribution of such outcomes within the group. a cohesive, integrated, and comprehensive approach to health considering the distribution of health outcomes in a population, the health determinants that influence the distribution of care, and the policies and interventions that impact and are impacted.</td>
</tr>
</tbody>
</table>

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## Determinants of Health

<table>
<thead>
<tr>
<th>Academic</th>
<th>Clinical Care System</th>
<th>Public Health System</th>
</tr>
</thead>
<tbody>
<tr>
<td>any factor that brings about change in a health condition or makes a difference to a given health outcome</td>
<td>no clear source for how this concept is practically defined within the clinical care system (Usually use the public health system definition when working with governmental entities)</td>
<td>a definable entity that causes, is associated with, or induces a health outcome including: environmental determinants, biological, behavioral, social, economic, cultural or other factors. The range of personal, social, economic, and environmental factors that influence health status and can be categorized as follows: policymaking, social factors, health services, individual behavior, and biology/genetics. Causal factors that affect health outcomes, e.g., demographic and population (host) factors; environmental factors; social, economic, educational, healthcare, cultural, or other systems; and preventive interventions</td>
</tr>
</tbody>
</table>
The Scan Also Provides Definitions of

• Social, Upstream, Distal Determinants of Health
• (Built and Natural) Environmental Determinants of Health
• Behavioral Determinants of Health
• Health Improvement
• Health Promotion
• Disease Prevention
• Disease Management
• Health Outcomes (Ultimate/Final and Intermediate)
Recommendations

A. Use the terms TOTAL Population and SUBpopulation

B. Define Determinants of Health at the TOTAL population level and use the following categories:
   1. Genetics and Individual Biology
   2. Clinical Care
   3. Behaviors
   4. Social Environment
   5. Physical Environment

C. Align measures of population health with those of national planning groups (HP 2020, Natl Prev Strategy, CHNAs)
Conceptual Framework: Healthy People 2020
Conceptual Framework: CMMI

Better Care – Key Domains

- Care Quality
- Care Experience
- Utilization
- Access

Better Health – Key Health Factors

- Health Behaviors
- Health Care
- Socioeconomic Factors
- Physical Environment

Better Health - Community Health Outcomes

A Measurably Healthier Population...

Conceptual Framework: Mark Friedman “Results Accountability Framework” as modified by LA County DPH

Frameworks

- Population Health
  - Population Goals
    - Goal 1
  - Population Indicators
    - Indicator
  - Effective Strategies
    - Strategy 1
    - Strategy 2

- Program Performance
  - Performance Goals
    - Goal 1
    - Goal 2
  - Performance Measures
    - Measure 1
    - Measure 2
  - Accreditation Domains
  - Federal, State, or Local Guidelines

- Strategic Plan
- Healthy People
- Community Guide
- Clinical Guide
- Other Sources
Conceptual Frameworks:
Evans-Stoddart
as modified by David Kindig
Conceptual Framework: IOM Logic Model for Public Health Measurement

FIGURE 2-2 From inputs to outputs logic model.
Conceptual Framework: Multiple Determinants Approach to Cardiovascular Disease (IOM)
Common domains for measuring total population health from a representative subset of indicator reports (n=26)

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>COUNTS OF INDICATOR CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health status and health-related quality of life</td>
<td>7</td>
</tr>
<tr>
<td>Health outcomes</td>
<td></td>
</tr>
<tr>
<td>• Mortality/natality</td>
<td>22</td>
</tr>
<tr>
<td>• Morbidity</td>
<td>16</td>
</tr>
<tr>
<td>• Chronic disease/injury</td>
<td>23</td>
</tr>
<tr>
<td>• Infectious disease</td>
<td>7</td>
</tr>
<tr>
<td>Health-related behaviors</td>
<td>30</td>
</tr>
<tr>
<td>Social determinants of health</td>
<td>16</td>
</tr>
<tr>
<td>Environmental Determinants of health</td>
<td>13</td>
</tr>
<tr>
<td>Health Improvement Activities –Processes and Outcomes</td>
<td></td>
</tr>
<tr>
<td>• Clinical care system</td>
<td>34</td>
</tr>
<tr>
<td>• Government public health system</td>
<td>5</td>
</tr>
<tr>
<td>Health Improvement Activities –Capacity building</td>
<td></td>
</tr>
<tr>
<td>• Clinical care system</td>
<td>6</td>
</tr>
<tr>
<td>• Government public health system</td>
<td>6</td>
</tr>
</tbody>
</table>
Issues and Recommendations: Selecting Priority Measures of Total Population Health, the Determinants of Health, and Health Improvement Activities

Issues

• Some areas are ripe for synergy: e.g., chronic disease prevention and management, delivery of clinical preventive services, access to a medical home, and insurance coverage.

• Some areas are isolated priorities: patient safety (primarily clinical care) and social and physical determinants of health (primarily public health).

• Data availability: the public health system continues to lack reliable county and sub-county estimates for total population health measures; clinical records still lack basic information (e.g., BMI).

• Difficult to measure health disparities and health equity at both the total population and subpopulation levels.

Recommendations

• Use existing national indicator sets to select the NQF total population health measures. Selected indicators should provide data at the national, state, and local levels. Note that most of the national clinical care and population health surveys are not funded to capture data below the national level.

• Total population health measures should be able to measure disparities.
Recommendations: Topics for inclusion in a measure set of total population health outcomes, determinants of health, and health improvement activities

- Select indicators of total population health based on a combination of burden of disease and/or unhealthy risk behaviors, such as the 3FOUR50 approach.

- Identify the priority health improvement activities currently receiving the most time, attention, and resources from within the clinical care system and government public health system, e.g., chronic disease management/preventable admissions, delivery of clinical preventive services, access to a medical home and adequate insurance coverage. The selected health improvement activities should clearly be linked to the total population health outcomes most likely to be influenced by these investments in specific health improvement activities. When possible, preventable burden and cost-effectiveness should also be a consideration in prioritizing such activities.

- Start small and identify areas of synergy and overlap where complementary health improvement activities are most likely to already exist and make buy-in and collaboration possible. The financial and accountability demands on both systems make the expectation of major changes in mission that are not aligned with current funding streams and financial incentives unlikely.
Exemplar Population Health Indicator Sets

- County Health Rankings
- America’s Health Rankings
- Leading Health Indicators (HP2020)
- Core Metrics (IOM)
- State of the USA (IOM)
Thanks!
steventeutsch@gmail.com