NAM WORKSHOP SERIES ON HIGH-NEED PATIENTS

Matching patients to tailored care models: a strategy to enhance care, improve outcomes, and curb costs

Melinda Abrams, MS, The Commonwealth Fund
Arnold Milstein, MD, Clinical Excellence Research Center, Stanford University

October 21, 2016
Agenda

1. The development of a patient taxonomy 2.0
   - Purpose
   - Our process
   - Key themes
   - Where we landed

2. Crosswalk: a patient taxonomy and care models that deliver
   - Task 1: A distillation of the evidence on effective care models
   - Task 2: Conceptual mapping of care models to patient groups
Part 1: A Patient Taxonomy 2.0
Acknowledgement

Workgroup members:

- Melinda Abrams, The Commonwealth Fund (Chair)
- Melinda Buntin, Vanderbilt University School of Medicine
- Dave Chokshi, NYC Health + Hospitals
- Henry Claypool, Advancing Independence: Modernizing Medicare and Medicaid
- David Dorr, Oregon Health & Science University
- Jose Figueroa, Harvard School of Public Health
- Ashish Jha, Harvard School of Public Health
- David Labby, Health Share of Oregon
- Prabhjot Singh, Mount Sinai Health System and Peterson Center on Healthcare
Purpose – Why is a patient taxonomy important?

- The high-need patient population is a diverse group.
- Complicating factor: population bears disproportionate burden of social challenges (e.g., housing insecurity, unemployment).
- Categorizing this heterogeneous population into subgroups with shared characteristics – a patient taxonomy – offers a strategy to inform planning and delivery of targeted, more effective care.
Taxonomy 2.0: our process

1. Set context on work to date.

2. Defined purpose and target audience.
   - **Purpose**: To inform care planning – interventions, workforce, resource allocations, etc.
   - **Target audience**: Delivery system leaders and payers.

3. Discussed course of action.
   - What is our starting point? Do we start with the patients? By condition? Utilization? Payer type? Or do we start with the program literature and see what works for specific groups (i.e., backward engineer)?
   - What is our product? A taxonomy? Set of principles or guidance for delivery systems?

4. Defined final deliverable.
   - Build on previous work by Harvard and Commonwealth, develop a taxonomy that embeds social and behavioral factors.
   - Provide guidance to the field on why and how to use a taxonomy in a health system (e.g., a “starter” approach achievable by many; data sources to consult)
Key themes

- **Taxonomy must extend beyond clinical care.** Behavioral health and social factors must be integrated.

- **Taxonomy must be actionable.** The purpose is to inform care. Distinctions between groups must lead to action and decisions.

- **Unlikely to achieve perfection.** A taxonomy will be iterative and ever-evolving, and must strike balance in terms of granularity (i.e., not too many groups, not too few). Making a statement about the value of segmentation and approaches or principles to a patient taxonomy is an important first step.

- **Analytic vs. the operational.** There are analytic and operational components of this work. In order to be useful, we must tie the taxonomy (analytic) to programs (operational).

- **Payer challenges.** Must be mindful of complex and fragmented payer mix, and how this affects care delivery from both operational and administrative perspectives.

- **Practical challenges.** Systems face barriers to the implementation of a taxonomy, such as timely/real-time access to data, and training and workflow considerations.
Working definitions

There are many ways to group patients:

- Targeting the most “impactable” high-need patients
- Grouping high-need patients only
- Whole population risk stratification (e.g., Clinical risk Groups)
Underlying notion: bio-psycho-social framework
(Acknowledgment: David Labby)

An illustration of how patients’ needs inform design of intervention

Patients with few resources to deal with health issues. Usually complex physical, mental health and/or addictions issues.

Patients with complex medical conditions. Usually with adequate social/personal resources.
Where we landed

Fundamental conclusions:

• A “medical approach” to grouping patients has its limitations, but is a feasible starting point for most health systems or payers, given availability of data.

• The real aim -- the “bull’s eye” -- is the incorporation of behavioral and social factors in separating patients into subgroups.

• What Harvard and CMWF developed and what we present here are starter approaches.

• After a review of Harvard and CWMF’s work, the group decided no work needs to be done on defining “medical segments,” and that the added contribution would be to:
  
  • make a statement that calls for health systems/payers to use a taxonomy to separate high-need patients into subgroups, and
  
  • present a conceptual model (illustrative, not comprehensive) that offers guidance on how to embed social and behavioral factors in this medical approach in a way that is actionable (i.e., affects care delivery and planning decisions).
Where we landed (cont.)

Taxonomy for High-Need Patients

1. Medical and functional groups
   - Non-elderly Disabled
   - Advancing Illness
   - Frail Elderly
   - Major Complex Chronic
   - Multiple Chronic
   - Children w/ Complex Needs

2. Behavioral and social assessment
   - Behavioral Health
   - Social Risk Factors
Where we landed (cont.)

<table>
<thead>
<tr>
<th>1. Behavioral variables</th>
<th>Criteria/Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Substance Abuse</td>
<td>Excessive alcohol, tobacco, prescription and/or illegal drug use</td>
</tr>
<tr>
<td>2. Serious Mental Illness</td>
<td>Schizophrenia, bipolar, major depression</td>
</tr>
<tr>
<td>3. Cognitive Decline</td>
<td>Dementia disorders</td>
</tr>
<tr>
<td>4. Chronic Toxic Stress</td>
<td>Functionally-impairing psychological disorders (e.g., PTSD, ACE, anxiety)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Social variables</th>
<th>Criteria/Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Low SES</td>
<td>Income and/or education</td>
</tr>
<tr>
<td>2. Social isolation</td>
<td>Marital status and whether living alone</td>
</tr>
<tr>
<td>3. Community deprivation</td>
<td>Median household income by census tract; proximity to pharmacies and other health care services</td>
</tr>
<tr>
<td>4. Housing insecurity</td>
<td>Homelessness; recent eviction</td>
</tr>
</tbody>
</table>

Other factors raised:
- Race/ethnicity
- Food insecurity
- Literacy and numeracy
- History of incarceration
An alternative visual: through the lens of the bio-psycho-social framework

(Acknowledgment: David Labby)

Medical System Determinants
- Non elderly disabled
- Advancing Illness
- Frail Elderly
- Major Complex Chronic
- Multiple Chronic
- Children w/ Complex Needs

Social Determinants
- Low SES
- Social Isolation
- Community deprivation
- Housing insecurity

Individual Behavioral Determinants
- Substance abuse
- Serious mental illness
- Cognitive decline
- Chronic toxic stress
Part 2: A patient taxonomy and care models that deliver
Task 1: Evidence distillation and synthesis

- **Task and objective**: review evidence syntheses and other literature on care models for high-need patients; identify promising models and attributes.

- **Approach**: Reviewed and synthesized review articles and other reports to identify areas of convergence and synthesize list of care models and attributes that hold most potential to improve outcomes and lower costs.
Bibliography


• S. N. Bleich, C. Sherrod, A. Chiang et al., “Systematic Review of Programs Treating High-Need and High-Cost People with Multiple Chronic Diseases or Disabilities in the United States, 2008-2014,” Preventing Chronic Disease, November 2015 12(E197).


• C. Boult, G. D. Wieland, “Comprehensive Primary Care for Older Patients with Multiple Chronic Conditions,” JAMA, November 2010 304(17):1936-1943.


**Successful Care Models**

- **Enhanced and collaborative primary care**
  - Interdisciplinary primary care
    - e.g., GRACE, Guided Care, PACE, Care Management Plus
  - Care and case mgmt
    - e.g., MGH Physicians Org Care Mgmt Program
  - Chronic disease self-mgmt
    - e.g., CDSM at Stanford
- **Transitional care**
  - e.g., Naylor Transitional Care Model
- **Integration of medical, social, and behavioral services**
  - e.g., IMPACT, Camden Coalition

**Common Attributes**

- Multi-dimensional (medical and social) patient assessment
- Targeting those most likely to benefit
- Evidence-based care planning
- Care match with patient goals
- Patient and family engagement, education, and coaching
- Coordination of care and communication among and between patient and care team
- Patient monitoring
- Facilitation of transitions

**Common Implementation Tactics**

- **Multidisciplinary teams** with trained care coordinator as hub
- **Extensive outreach** and interaction between patient, care coordinator, and care team, with emphasis on face-to-face encounters b/w all parties and co-location of teams
- **Speedy provider responsiveness** to patients and 24/7 availability
- **Timely clinician feedback** and data for remote monitoring
- **Med management** and reconciliation, particularly in the home
- **Extending care** to the community and home
- **Linkage** to social services
- **Prompt outpatient follow up** and standard discharge protocols
- **Reduced workload** for docs

**Operational Practices and Tools**

- Leadership across levels
- Customization to context
- Strong relationships
- Specialized training
- Effective use of metrics
- Use of multiple sources of data

*not mutually exclusive categories*
Task 2: Taxonomy and Care Model Crosswalk

- **Task and objective**: Match specific care models (e.g., GRACE, IMPACT) to identified patient groups to guide practical translation of this knowledge.

- **Approach**: Matched a sample (n=16) of care models to patient groups outlined in taxonomy.

  - Caveats:
    - **Conceptual mapping exercise to illustrate** how a taxonomy may inform care
    - **Not an exhaustive crosswalk** of all evidence-based care models
    - Many models could be matched or adapted to **multiple patient groups**, which may not be reflected here
    - Like the taxonomy, this is one approach – **a starting approach** – and is intended to be illustrative
<table>
<thead>
<tr>
<th>Program</th>
<th>Matched Group</th>
<th>Non-elderly disabled</th>
<th>Advancing illness</th>
<th>Frail elderly</th>
<th>Major complex chronic</th>
<th>Multiple chronic</th>
<th>Children with complex needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital at Home</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>Care Management Plus</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>Complex Care Program at Children's National Health System</td>
<td></td>
<td></td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>Massachusetts General Physicians Organization Care Management Program</td>
<td></td>
<td></td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>Health Services for Children with Special Needs</td>
<td></td>
<td></td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>Naylor Transitional Care Model (Penn)</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>PACE</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>MIND at home</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>IMPACT</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>Health Quality Partners</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>Guided Care</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>GRACE</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>Commonwealth Care Alliance</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
<tr>
<td>H-PACT</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td></td>
<td>B+S</td>
<td>B+S</td>
</tr>
</tbody>
</table>
A look at care model outcomes

- Sample programs selected based on available evidence to support effectiveness across 3 domains: health and well-being, care utilization, and/or costs
  - Exception: dearth of evidence for peds-specific programs
- 50% of selected programs demonstrate impact on health and well-being
- 75% of selected programs demonstrate reduction in utilization
- 50% of selected programs demonstrate reduction in costs
  - Cost outcomes measured differently across programs (e.g., reduction in total costs; cost savings net of program costs; average reduction in cost per patient; Medicare Part A, B expenditures)
- 75% of selected programs demonstrated improvements in at least 2 of 3 domains
## An example...

<table>
<thead>
<tr>
<th>Program</th>
<th>Matched Group</th>
<th>Non-elderly disabled</th>
<th>Advancing illness</th>
<th>Frail elderly</th>
<th>Complex Chronic</th>
<th>Multiple chronic</th>
<th>Children with complex needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital at Home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care Management Plus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complex Care Program at Children’s National Health System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts General Physicians Organization Care Management Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Services for Children with Special Needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naylor Transitional Care Model (Penn)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PACE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIND at home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMPACT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Quality Partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guided Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRACE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commonwealth Care Alliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H-PACT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Group</td>
<td>Program</td>
<td>Outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health/well-being</td>
<td>Utilization</td>
<td>Cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frail elderly</td>
<td>Naylor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PACE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frail elderly with behavioral condition and/or social complexity</td>
<td>IMPACT</td>
<td>X</td>
<td>n/a</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MIND at Home</td>
<td>X</td>
<td>X</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A “real world” example: Denver Health’s 21st Century Care Project

- Program that incorporates “population health” approach into the delivery of primary care
- In a nutshell: risk stratifies patients and matches enhanced care programs tailored to patient needs
- Stratification approach incorporates predictive modeling, combined with clinician assessment
- Uses Clinical Risk Groups and clinicians assign to 1 of 4 tiers for enhanced care
  - “Override” criteria could change tier assignment, such as certain mental health diagnoses

Acknowledgement: Simon Hambidge, Chief Ambulatory Officer, Denver Health, Presenter at Workshop 2
A “real world” example: Denver Health’s 21st Century Care Project

**Panel Management**

- **Tier >1 Patients**
  - e-Touch Programs
  - Diet support
  - Flu vaccine reminders
  - Well child visit reminders
  - Appointment reminders
  - Pediatric Recall
  - Integrated Behavioral Health
  - Clinical Social Work

**Care Management for Chronic Disease**

- **Tier >2 Patients**
  - Pediatric Asthma Home Visits
  - Pediatric Asthma Recall
  - Diabetes/Hypertension Management
  - Pharmacotherapy Management
  - Transitions of Care Coordination

**Complex Case Management**

- **Tiers >3-4 Patients**
  - Enhanced Care Teams
  - Patient Navigators
  - Nurse Care Coordinators
  - Clinical Pharmacists
  - Behavioral Health Consultants
  - Clinical Social Workers

**High Intensity Treatment Teams**

- **Tier 4 Patients**
  - Intensive Outpatient Clinic
  - Children with Special Health Care Needs Clinic
  - Mental Health Center of Denver

Acknowledgement: Simon Hambidge, Chief Ambulatory Officer, Denver Health, Presenter at Workshop 2
Crosswalk exercise take-aways

• There are a number of care models for high-need patients with good evidence.

• Across successful care models, there’s seemingly broad consensus on universal attributes.

• At the same time, matching exercise demonstrated that individual care models (e.g., PACE, IMPACT) can be targeted to specific patient groups based on characteristics and needs.

• With a patient taxonomy and “menu” of evidence-based care models, health systems would be better equipped to plan for and deliver targeted care based on patient characteristics, needs, and challenges.
Questions and Discussion