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

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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. Reviewed work to date.

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

3. Consulted more literature, debated findings, reached consensus

4. Defined final deliverable.
   - Build on previous work by Harvard and The Commonwealth Fund, 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.**
- **Taxonomy must be actionable.** The purpose is to inform care.
- **Unlikely to achieve perfection.** Making a statement about the value of segmentation and approaches or principles to a taxonomy is an important 1st step.
- **Analytic vs. the operational.** In order to be useful, we must tie the taxonomy (analytic) to programs (operational).
- **Payer challenges.**
- **Practical challenges for providers.** Barriers to implementation include timely access to data, training staff and changing workflow.
Working Definitions

• “Whole population risk stratification” – dividing entire patient population based on risk profile

• “Segmentation” – separating highest risk patients into subgroups with common needs → the taxonomy

• “Targeting” – identifying those within a segment that need intense complex care management
Underlying notion: bio-psycho-social framework
(Acknowledgment: David Labby)

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.
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
Where we landed

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 into a taxonomy.

• What Harvard, The Commonwealth Fund and NAM develop will be starter approaches.

• After a review of Harvard and The Commonwealth Fund’s efforts, the group decided no additional work needed to define “medical segments,” The added contribution of the NAM Committee:
  • To make a statement that calls for health systems/payers to use a taxonomy to separate high-need patients into subgroups, and
  • To 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).
### Taxonomy for High-Need Patients

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

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

1. Behavioral variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Criteria/Measurement</th>
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</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>
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<td>3. Cognitive Decline</td>
<td>Dementia disorders</td>
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<tr>
<td>4. Chronic Toxic Stress</td>
<td>Functionally-impairing psychological disorders (e.g., PTSD, ACE, anxiety)</td>
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</table>

2. Social variables

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

Other factors raised: Race/ethnicity; food insecurity; literacy and numeracy; history with criminal justice system
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


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


**Evidence distillation and synthesis**

**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

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*not mutually exclusive categories*

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Operational Practices and Tools

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

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<td>Frail elderly with behavioral condition and/or social complexity</td>
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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
  o “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