Developing a Framework and Inventory of Instruments to Measure Team-Based Primary Care

Richard Ricciardi, PhD, NP

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Date: Sunday, 8 November 2015: 4:00 PM-5:15 PM in Level 1, Bluthorn 8
Session Time: 4:00 PM
Session Title: Applying Theories and Frameworks to Impact Care
Disclosures

• This research was conducted under contract to the Agency for Healthcare Research and Quality (AHRQ), Contract No. HHSA 290 2010 00004I, Task Order #5, “Developing a Foundation and Framework for Team-based Care Measures” Rockville, MD. The authors of this presentation are responsible for its content. No statement may be construed as the official position of the Agency for Healthcare Research and Quality of the U.S. Department of Health and Human Services.

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Learning Objectives

• Strengthen understanding of how health care teams can optimize team functioning

• Describe a conceptual framework of team-based care measurement to guide improvements in ambulatory settings

• Discuss an AHRQ published web-based inventory of instruments to support measurement of the requisite attributes of effective teamwork
Acknowledgements

Contributors:
• Kathleen Kerwin Fuda, PhD
• Sarah J. Shoemaker, PharmD, PhD
• Michael Parchman, MD, MPH
• Judith Schaefer, MPH
• Meaghan Hunt
• Jessica Levin

Expert Panel:
• Diane Cardwell, TransforMED
• Jody Hoffer Gittell, Brandeis Univ.
• Ben Miller, Univ. of Colorado
• Sally Okun, PatientsLikeMe, Inc.
• Ray Palmer, Univ. of Texas Health Science Center
• Eduardo Salas, Univ. of Central Florida
• Ron Stock, Oregon Health & Science Univ.
• Sheri ver Steeg, Mercy Clinics, Inc.
• Melissa Valentine, Stanford Univ.
• Elizabeth Yano, UCLA & VA HSR&D
• Research on teams is available from other sectors
• Accumulating evidence that effective teams are associated with better patient outcomes
• Increasing recognition that successful primary care redesign efforts (e.g., medical home) will require a high-functioning primary care team
• Since research, evaluation, and QI can help advance effective team-based care, instruments to support these activities are critical
• Growing agreement on attributes of effective team-based care
• Education has similarly been evolving towards interprofessional education and teams


Why Teamwork is Important

- The majority of health care errors are the result of health system failures rather than poor clinician performance.
- Teamwork is essential in caring for patients with multiple comorbidities.
- Teams of experts and support staff are necessary for coordination and applying 21st technologies to achieve patient-centered team-based care.
Methods

• Developed a conceptual model
  ▪ 12 Constructs grouped into 3 main Domains, plus “Leadership”
• Conducted an environmental scan
  ► Reviewed 3296 abstracts + 45 articles suggested by experts
    o Identified 221 potential sources, from which 129 full-text instruments were available
      » 64 instruments selected to map (related to teams and adaptable to primary care)
• “Mapped” the items in each instrument to the mediators or enablers of team care in the conceptual model
  ► Two researchers systematically ‘mapped’ each item within an instrument to the mediator/enabler constructs in the model
  ► Then reconciled by experts in team care
  ► Each item could map to maximum of two constructs
• 48 instruments retained after mapping exercise
Conceptual Framework

• Developed and refined through a literature review and with input from the expert panel
• Framework uses an “Input-Mediator-Output-Input (IMOI)” configuration that is iterative and dynamic in nature
  ► **Inputs:** precursors or pre-conditions for teams to exist
  ► **Mediators:** processes that occur within the team, or enablers of effective teamwork; mediators were the focus of this project. There are 4 mediator domains in the framework:
    o Cognitive
    o Affective/relational
    o Behavioral
    o Leadership
  ► **Outputs** are the results of effective teamwork in primary care
Conceptual Framework - Team-based Care

Inputs
- Internal to Organization
  - Leadership: inclusive, psychological safety
  - Team composition: size, diversity of ideas, skills, knowledge, prior training/experience, turnover/stability
  - Patient population needs: demand & workload
  - The “Built” environment: space and co-location
  - QI Infrastructure: Health IT capacity, time for reflection & conversations, internal expertise with a specific QI method, external expertise: QI consultants or practice facilitators
- External to Organization
  - Local context: job market, workforce
  - Financing/payment models
  - Health policy environment (e.g. licensure policies)

Mediators
- Teamwork
  - Cognitive
    - Sensemaking
    - Continuous learning
    - Shared explicit goals and accountability
    - Evolving mental models of roles
  - Affective/Relational
    - Trust
    - Respectful interactions
    - Heedful interrelating
    - Commitment: “we” vs. “me”
  - Behavioral
    - Conflict resolution
    - Adaptable to context and needs
    - Communication
      - Timely, Accurate, Honest
      - Problem-solving
      - Multi-modal

Leadership

Outputs
- Team-based Care
  - Patient-centric: inclusive of patients and accountable to them
  - Defined, agreed upon roles: works at ‘top of education and experience’
  - Measures processes and outcomes: accountable for evidence-based care
  - Continuous improvement
  - Proactive care that is a shared responsibility
  - Link to other teams/resources: coordinate care as needed
  - Longitudinal continuity relationship
<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Domain</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sense-making</strong></td>
<td>Effective teams actively consider tasks, interactions and the environment within which they take place to help all team members gain a deeper understanding of how these factors relate to each other, for the purpose of both problem-solving AND improving shared goals and vision.</td>
<td>Weick KE (1995) McDaniel RR (2007) Jordan ME, et al (2009)</td>
</tr>
<tr>
<td><strong>Evolving Mental Models of Roles</strong></td>
<td>Effective teams maintain an open mind to new ideas and perspectives that they apply to their role and understanding of others roles and relationships, allowing roles to change over time.</td>
<td>Bodenheimer T. (2007)</td>
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<table>
<thead>
<tr>
<th>Concept</th>
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<th>References</th>
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</thead>
<tbody>
<tr>
<td><strong>Affective/Relational Domain</strong></td>
<td></td>
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<tr>
<td><strong>Trust</strong></td>
<td>Effective teams are able to act in a manner that reflects confidence in the ability and reliability of other team members, are able to be vulnerable by bringing problems to the group for resolution and believe that each team member will strive toward the goals of the group.</td>
<td>Ilgen DR, Hollenbeck JR, Johnson M, Jundt D. (2005)</td>
</tr>
<tr>
<td><strong>Respectful Interactions</strong></td>
<td>Effective practice teams exhibit honest, self-confident and appreciative interaction, actively seek out and value the roles and opinions of others, freely share opinions that may be unpopular and willingly change their minds in response to new meaning created within the practice.</td>
<td>Lanham HJ, et al. (2009) Weick KE, Roberts, KA. (1993)</td>
</tr>
<tr>
<td><strong>Heedful Inter-relating</strong></td>
<td>In effective primary care teams, individuals pay attention to the task at hand, the way their roles and actions affect the roles and actions of others, and coordinate their actions to complement those of other team members.</td>
<td>Weick KE, Roberts, KA. (1993) Lanham HJ, et al. (2009)</td>
</tr>
<tr>
<td><strong>Commitment</strong></td>
<td>In effective primary care teams, individuals and the group as a whole feel connected to and exhibit a sense of belonging to the team, are dedicated to group goals and values, and exhibit this loyalty to the group by consistently performing their role even in difficult situations.</td>
<td>Ilgen DR, Hollenbeck JR, Johnson M, Jundt D. (2005) Hoegl M, Gemuenden HG. (2001)</td>
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<tr>
<td>Concept</td>
<td>Definition</td>
<td>References</td>
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<tr>
<td><strong>Behavioral Domain</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptable to Context and Needs, Improvisation</td>
<td>Effective practice teams adapt established routines to provide for unforeseen or unusual circumstances by flexible improvisation.</td>
<td>Weick K. (1998)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>McDaniel RR Jr (2007)</td>
</tr>
<tr>
<td>Conflict Resolution</td>
<td>Effective practice teams develop a relational capacity to address conflict by openly discussing disagreements or tension among team members using an effective resolution process</td>
<td>Lanham HJ, et al. (2009)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jordan ME et al. (2009)</td>
</tr>
<tr>
<td><strong>Leadership Domain</strong></td>
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<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>In effective practice teams leadership promotes high quality care by encouraging each team member to develop and express new ideas, encouraging their engagement in testing them, and guiding the team towards improvement.</td>
<td>Edmondson, A. (2003)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nembhard IM, Edmondson AC. (2006)</td>
</tr>
</tbody>
</table>
Results: Instrument-Level

Instrument Characteristics (n=48)

<table>
<thead>
<tr>
<th>Instrument type</th>
<th>#</th>
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<tbody>
<tr>
<td>Survey</td>
<td>44</td>
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<tr>
<td>Observational checklists</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Settings</th>
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<tbody>
<tr>
<td>Health care-outpatient</td>
<td>11</td>
</tr>
<tr>
<td>Health care-inpatient</td>
<td>15</td>
</tr>
<tr>
<td>Unspecified health care</td>
<td>4</td>
</tr>
<tr>
<td>Non-health care/unspecified</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total number of items in instrument</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>6-94</td>
</tr>
<tr>
<td>Mean</td>
<td>35.5</td>
</tr>
<tr>
<td>Median</td>
<td>28.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample / respondents</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td>14</td>
</tr>
<tr>
<td>Registered nurses</td>
<td>12</td>
</tr>
<tr>
<td>Health care administrators</td>
<td>9</td>
</tr>
<tr>
<td>Nurse practitioners</td>
<td>8</td>
</tr>
<tr>
<td>Allied health professionals</td>
<td>7</td>
</tr>
<tr>
<td>LPNs</td>
<td>4</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>3</td>
</tr>
<tr>
<td>Health care trainees/students</td>
<td>3</td>
</tr>
<tr>
<td>Patients</td>
<td>1</td>
</tr>
<tr>
<td>Non-health care</td>
<td>16</td>
</tr>
</tbody>
</table>
Number of Instruments Measuring Each Mediator Domain

Conceptual Model Mediator Domains

- Cognitive: 44 instruments
- Affective/Relational: 47 instruments
- Behavioral: 45 instruments
- Leadership (as a mediator): 26 instruments
Number of Items Measuring Each Mediator Domain

- Cognitive: 492 items
- Affective/Relational: 601 items
- Behavioral: 362 items
- Leadership: 192 items

(Conceptual Model Mediator Domains: n=1,647)
Number of Instruments That Map to Each Construct

Conceptual Model Mediator Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Number of Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense-making</td>
<td>16</td>
</tr>
<tr>
<td>Continuous learning</td>
<td>31</td>
</tr>
<tr>
<td>Shared explicit goals</td>
<td>37</td>
</tr>
<tr>
<td>Evolving mental models of roles</td>
<td>12</td>
</tr>
<tr>
<td>Trust</td>
<td>26</td>
</tr>
<tr>
<td>Respectful interactions</td>
<td>40</td>
</tr>
<tr>
<td>Heedful inter-relating</td>
<td>42</td>
</tr>
<tr>
<td>Commitment</td>
<td>42</td>
</tr>
<tr>
<td>Communication</td>
<td>21</td>
</tr>
<tr>
<td>Adaptable to context</td>
<td>27</td>
</tr>
<tr>
<td>Conflict resolution</td>
<td>26</td>
</tr>
<tr>
<td>Leadership (as mediator)</td>
<td>26</td>
</tr>
</tbody>
</table>
Number of Individual Items That Map to Each Construct

Conceptual Model Mediator Constructs

- Sense-making: 58
- Continuous Learning: 177
- Shared Explicit Goals: 230
- Evolving Mental Models: 27
- Trust: 64
- Respectful Interactions: 199
- Heedful Inter-relating: 194
- Commitment: 144
- Communication: 251
- Adaptable to Context: 57
- Conflict Resolution: 54
- Leadership: 192
Discussion

- Majority of instruments were from health care, though some from other sectors may be useful to assess effective team-based primary/ambulatory care
- The majority of instruments will require some adaption (e.g., wording changes) in order to use in primary, acute, and specialty care settings
- Most instruments address multiple Conceptual Model constructs, but with differing degrees of emphasis
  - None measured all of them
- Distribution of instruments and items across constructs and domains varied only slightly
Identified gaps in measurement of team-based primary/ambulatory care by:

- Examining extent to which instruments mapped to the conceptual framework
- Soliciting structured input from individual expert panel members and stakeholders
- Discussing the input received with the expert panel
Gaps in Measurement

• Highlights of Key Gaps:
  ► Need to incorporate patient perspective into team-based care assessments, although more conceptual work is needed before instrument development occurs.
  ► Address measurement challenges associated with aggregating at the unit-level from individual clinicians, particularly when there are few clinicians in a practice.
  ► Support practice improvement leads who wish to use the instruments by providing guidance and training (e.g., how to approach, use and interpret results).
Publish a Web-Based Atlas of Instruments

• A searchable database of 48 instruments to measure team-based care
  ▶ Can search instruments on key characteristics
• A summary for each instrument is provided
• A resource to support measurement of attributes of effective teamwork to ultimately advance and improve team-based care

http://primarycaremeasures.ahrq.gov/team-based-care/
Creating a Culture of Continuous Improvement with Teams – TeamSTEPPS®
• Evidence-based system to improve communication and teamwork among health care professionals
• Rooted in more than 20 years of research and lessons from application of teamwork principles within many industries
• Developed by Department of Defense’s Patient Safety Program in collaboration with AHRQ

http://teamsteppss.ahrq.gov
TeamSTEPPS
Team Strategies & Tools to Enhance Performance & Patient Safety
for
Office-Based Care
Team-based Care and Role of Patients and Family

Core Principles & Values of Effective Team-Based Health Care

Pamela Mitchell, Matthew Wynia, Robyn Golden, Bob McNellis, Sally Okun, C. Edwin Webb, Valerie Rohrbach, and Isabelle Von Kohorn*

October 2012

*Participants drawn from the Best Practices Innovation Collaborative of the IOM Roundtable on Value & Science-Driven Health Care

Patients and Health Care Teams Forging Effective Partnerships


December 2014

*The authors are participants in the activities of the IOM Roundtable on Value & Science-Driven Health Care. The views expressed are those of the authors and not necessarily of the authors’ organizations or of the Institute of Medicine. The paper is intended to help inform and stimulate discussion. It has not been through the review procedures of the Institute of Medicine and is not a report of the Institute of Medicine or of the National Research Council.

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Questions/Discussion

“Pleasure in the job puts perfection in the work.”

Aristotle