Does the Chronic Care Model Meet the Emerging Needs of People Living with Multimorbidity?

A Systematic Review and Thematic Synthesis

Kasey R. Boehmer, MPH
KER UNIT
Center for Clinical and Translational Sciences
Mayo Clinic

@krboehmer  Boehmer.kasey@mayo.edu
Acknowledgements

Co-authors:

Abd Moain Abu Dabrh, MBBCh, MS
Michael R. Gionfriddo, PhD, PharmD
Patricia Erwin, MLS
Victor M. Montori, MD, MSc
Background
Disease-specific guidelines and quality targets
Multiple treatments | Monitoring tests
Limited care prioritization
Poor care coordination

Life

Workload

Capacity

Scarcity

Burden of treatment
access
use
self-care
Outcomes

Burden of illness

Shippee N et al JCE 2012
The work of being a patient

Sense-making work

Organizing work and enrolling others

Doing the work

Reflection, monitoring, appraisal

Gallacher et al. Annals Fam Med 2012
Aim

To critically appraise reports of the implementations of the CCM to determine the extent of their MDM adoption.
Methods
- Systematic review of studies implementing CCM and evaluating it using any design
- ENTREQ Guidelines
- English Language studies July 2011 – July 2016
- MEDLINE and Scopus databases
- Reviewed references of included studies and systematic reviews for additional studies to include
Study Eligibility

Eligible studies had to claim to use the CCM AND specifically implement 1+ of 5 Wagner’s original CCM tenets

1. the use of evidence-based, planned care and protocols
2. practice redesign to meet the needs of patients with chronic conditions
3. patient self-management support
4. ready access to clinical expertise
5. supportive information systems
Synthesis and Analysis

- Thematic synthesis

- 3 frameworks/Theories:
  - CuCoM = (+), (-), (N)
  - NPT = (S)(E)(W)(A)
  - Theory of Patient Capacity = (B)(R)(E)(W)(S)
We negotiated our implementation strategy with the municipality, which took active ownership by increasing the number of free COPD courses and smoking cessation courses. The region agreed on providing a special reimbursement to GPs for joint home visits together with the community nurse to newly discharged COPD patients [40].

Targeted self-management support for patients to cope with exacerbations of the disease was an integral part of our strategy, and we developed an action card with advice to patients on management of sputum and exacerbations. The action card was based on the research by Robert Stockley [41,42].

To provide family, friends and the patients themselves with more knowledge to improve their ability to cope with their disease, we designed a web site with information about COPD including contact details to the municipality, patient support groups and the involved GPs.

The standard implementation of the disease management programme from the Central Denmark Region went ahead and thus also covered all the groups in our study.
Results
Figure 1: PRISMA Diagram

Records identified through database searching  
N = 212

Additional records identified through other sources  
N = 0

Records after duplicates removed  
N = 118

Records screened  
N = 118

Full-text articles assessed for eligibility  
N = 57

Records excluded  
N = 61  
Systematic Review = 21  
Not a Chronic Condition = 1  
Protocol = 10  
Not CCM = 7  
Other = 22

Full-text articles excluded, with reasons  
N = 20  
Not a Chronic Condition = 4  
Not CCM = 13  
Other = 3

Studies included in qualitative synthesis  
N = 37
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Type</th>
<th>Conditions</th>
<th>EBP</th>
<th>Redesign</th>
<th>SMS</th>
<th>Expertise</th>
<th>SIS</th>
<th>Duration</th>
<th>Framework</th>
<th>Conflicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin</td>
<td>2013</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>4 weeks; support group for 12 months</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Bissonnette</td>
<td>2013</td>
<td>Quant</td>
<td>Chronic Kidney Disease</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>3.5 years</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Bojadzievski</td>
<td>2012</td>
<td>Quant</td>
<td>Type II Diabetes/Hyperlipidemia</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>Unclear</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Britto</td>
<td>2014</td>
<td>Quant</td>
<td>Asthma</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>4 years</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Collinsworth</td>
<td>2014</td>
<td>Qual</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>18 months</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Comi n-Colet</td>
<td>2014</td>
<td>Quant</td>
<td>Heart Failure</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>6 years</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Crabtree</td>
<td>2014</td>
<td>Mixed</td>
<td>Hypertension</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Unclear</td>
<td>Model for Improvement</td>
<td>No</td>
</tr>
<tr>
<td>Cramm</td>
<td>2014</td>
<td>Mixed</td>
<td>Type II Diabetes/Heart Failure/Comorbidities/COPD/Cardiovascular Disease</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>1 year</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Cramm</td>
<td>2014</td>
<td>Quant</td>
<td>Type II Diabetes/Depression/Heart Failure/Comorbidities/COPD/Cardiovascular Disease/Stroke/Eating Disorders</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>2 years</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Cramm</td>
<td>2012</td>
<td>Quant</td>
<td>Type II Diabetes/Depression/Heart Failure/Comorbidities/COPD/Cardiovascular Disease/Stroke/Eating Disorders/Psychotic Disorders</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>1 year</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Dickinson</td>
<td>2014</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>6-18 months</td>
<td>Complexity Theory; Model for Improvement</td>
<td>No</td>
</tr>
<tr>
<td>Dickinson</td>
<td>2014</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>12-18 months</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Farley</td>
<td>2014</td>
<td>Quant</td>
<td>Tuberculosis</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>6 months</td>
<td>PRECEED-PROCEED</td>
<td>No</td>
</tr>
<tr>
<td>Goldwater</td>
<td>2014</td>
<td>Qual</td>
<td>Type II Diabetes/Hypertension/Hyperlipidemia/Tuberculosis</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Unclear</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Halladay</td>
<td>2014</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>13+ months</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Hariharan</td>
<td>2014</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>3 years</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Heinelt</td>
<td>2015</td>
<td>Mixed</td>
<td>Not Targeted</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>Unclear</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Holm</td>
<td>2014</td>
<td>Qual</td>
<td>Depression</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>12 months</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Holtrop</td>
<td>2015</td>
<td>Mixed</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>9 months</td>
<td>Macroognition Framework</td>
<td>No</td>
</tr>
<tr>
<td>Ku</td>
<td>2015</td>
<td>Mixed</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>28 months</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Ku</td>
<td>2014</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>22 months</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Langwell</td>
<td>2014</td>
<td>Mixed</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>4 years</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Mackey</td>
<td>2012</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>Unclear</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Martin</td>
<td>2016</td>
<td>Quant</td>
<td>Not Targeted</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Unclear</td>
<td>Bandura’s Social Cognitive Theory</td>
<td>No</td>
</tr>
<tr>
<td>Massoud</td>
<td>2015</td>
<td>Quant</td>
<td>HIV</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>Unclear</td>
<td>Systems theory; Model for Improvement</td>
<td>No</td>
</tr>
<tr>
<td>McGough</td>
<td>2016</td>
<td>Quant</td>
<td>Depression/Anxiety</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>44 months</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Noel</td>
<td>2014</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>12 months</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Parchman</td>
<td>2013</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>1 year</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Philis-Tsimikas</td>
<td>2014</td>
<td>Qual</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>Varying</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Pillerton</td>
<td>2014</td>
<td>Quant</td>
<td>Type II Diabetes</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>3 years</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Roland</td>
<td>2012</td>
<td>Quant</td>
<td>COPD or Not Targeted</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>6 months</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Sack</td>
<td>2012</td>
<td>Quant</td>
<td>Inflammatory Bowel Disease</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>5 months</td>
<td>none</td>
<td>No</td>
</tr>
<tr>
<td>Schauer</td>
<td>2013</td>
<td>Qual</td>
<td>Not Targeted</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>Unclear</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Smith</td>
<td>2013</td>
<td>Qual</td>
<td>COPD</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>25 months</td>
<td>Medical Research Council’s framework</td>
<td>No</td>
</tr>
<tr>
<td>Smith</td>
<td>2013</td>
<td>Quant</td>
<td>COPD</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>25 months</td>
<td>None</td>
<td>No</td>
</tr>
<tr>
<td>Tu</td>
<td>2013</td>
<td>Quant</td>
<td>HIV</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>3 years</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Van Durme</td>
<td>2015</td>
<td>Mixed</td>
<td>Not Targeted</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>15 days - 36 months; mean 6 months</td>
<td>Complexity Theory</td>
<td>No</td>
</tr>
<tr>
<td>Theme</td>
<td>Characteristics</td>
<td>Representative Quotes</td>
<td></td>
<td></td>
<td></td>
<td></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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Aims** | Adherence to treatment; implementing behavioral changes; improving disease-specific outcomes; reducing healthcare utilization; improving functional status or overall well-being; quality of life | • “The RNs provided outreach for continued motivation and adherence and providers integrated the information from each patient’s HBPM diary into their treatment strategy.” Crabtree, 2014  
• “The health coach describes this: “I help keep them compliant . . . make sure they’re seeing their doctor on time, they’re keeping their appointments, they, they get a wellness check and they get a physical each year. . . to make sure they’re doing that. If you are diabetic, I’m making sure that you are doing what you’re supposed to—getting your A1Cs, checking blood sugar on time, taking any meds.”” Shauer, 2013 |
| **Alignment** | Healthcare system; community; patients; clinicians | • “Defy Diabetes! created a unique collaborative partnership between Seton Health, CDEs, faith community nurses and churches, and a number of other key partners such as other medical centers, the local ADA chapter, several colleges and universities, and Cornell Cooperative Extension to impact diabetes in the community.” Austin, 2013 |
| **Assessment** | EHR; patient registries; quality ratings, patient satisfaction | • “The presence and use of an electronic patient record and a registry, including a list of beneficiaries of the projects and reminders to providers to plan care were important facilitators of the process.” Van Durme, 2015  
• “[Diabetes self-management education] DSME sessions focused on: information on diabetes and diabetes medications, adoption of self-care behaviour, gaining control over the condition through problem solving skills and goal setting.” Ku, 2014  
• “Scheduled phone follow-up for any patient with symptoms at routine clinic visits and post hospital discharge to ensure resolution (pre-empting any deterioration whilst awaiting next routine visit).” Sack, 2011  
• “The social worker also assessed the patient during the clinic visit reviewing advanced care directives, financial, or social support issues identified during the interaction. The social worker assessed the patient’s overall coping response to his or her chronic kidney disease and inquired about any major life changes (e.g., death, job loss, etc.).” Woodend, 2013 |
| **Assisting** | Care coordination; collaboration with other clinical teams and community agencies; team-based care; financial assistance; patient education; overcoming patient barriers; changing the flow and feel of the care environment; coping support |  

### Table 4: Study-by-Study Comparison with MDM

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Workload</th>
<th>NPT (normalizing the workload)</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin</td>
<td>2013</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Bissonnette</td>
<td>2013</td>
<td>N</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Bojadzievski</td>
<td>2012</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Britto</td>
<td>2014</td>
<td>N</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Collinsworth</td>
<td>2014</td>
<td>N</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Comín-Colet</td>
<td>2014</td>
<td>N</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Crabtree</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Cramm</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Cramm</td>
<td>2012</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Dickinson</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Dickinson</td>
<td>2014</td>
<td>Unclear</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Farley</td>
<td>2014</td>
<td>Unclear</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Goldwater</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Halladay</td>
<td>2014</td>
<td>Unclear</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Hariharan</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Heinelt</td>
<td>2015</td>
<td>-</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Holm</td>
<td>2014</td>
<td>Unclear</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Holtrop</td>
<td>2015</td>
<td>Unclear</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Ku</td>
<td>2015</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Ku</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Langwell</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Mackey</td>
<td>2012</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Martin</td>
<td>2016</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Massoud</td>
<td>2015</td>
<td>-</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>McGough</td>
<td>2016</td>
<td>N</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Noel</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Parchman</td>
<td>2013</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Philis-Tsimikas</td>
<td>2014</td>
<td>N</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Pilleron</td>
<td>2014</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Roland</td>
<td>2012</td>
<td>-</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Sack</td>
<td>2012</td>
<td>-</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Schauer</td>
<td>2013</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Smidth</td>
<td>2013</td>
<td>N</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Smidth</td>
<td>2013</td>
<td>N</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Tu</td>
<td>2013</td>
<td>+</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
<tr>
<td>Van Durme</td>
<td>2015</td>
<td>Unclear</td>
<td>SEWA</td>
<td>BREWS</td>
</tr>
</tbody>
</table>

**Cumulative Complexity Model (CuCoM)**
+ = transferring work to patients  
- = removing work from patients  
N = both transferring work to patients but providing support

**Normalization Process Theory (NPT)**  
S = sense-making work  
E = enrolling others and planning the work  
W = enacting the work  
A = appraising the work

**Theory of Patient Capacity (BREWS)**  
B = biography support  
R = resource support  
E = supportive healthcare environment  
W = workload support  
S = support of the social network
Conclusion
The work of being a patient
Patient-centered care?
Capacity Support
“Current interventions in line with the CCM may not meet the needs of the growing population with chronic multimorbidity. Opportunities for improving care and developing interventions in line with MDM may overcome these shortcomings.”
Exemplar: Smidth, 2013 - COPD Program

• Biography: “appreciatory approach with dialogue between the patient and the health professional about the patient’s range of choices and opportunities, available treatment options and the patient’s readiness to change habits.”

• Resources: simple action card with information on exacerbations and steps to take

• Environment: encouraging a team-based approach, and by creating manuals for health professionals to ensure no tests were duplicated, which would have caused more work for patients
Exemplar: Smidth, 2013 - COPD Program

- Work: regularly scheduled group self-management sessions that placed emphasis on “participatory activities with dialogue-based knowledge exchange to aid development of competences to act.

- Social: “wanted to inspire and encourage family, friends and patients to talk openly about the disease by providing disease-specific knowledge and therefore developed a webpage with information about the following issues: COPD; the support, help and aid provided by the municipality; local support groups and the general practices.”
More about MDM:

http://minimallydisruptivemedicine.org

Boehmer.kasey@mayo.edu

@krboehmer
MDM in the Wild
The HIV Clinic Case Study

Moain Abu Dabrh, MBBCh, MS
Associate Consultant
Assistant Professor of Family Medicine and Medicine
Department of Family Medicine Florida

AbuDabrh.AbdMoain@mayo.edu
Human Immunodeficiency Virus (HIV)

- HIV is a sexually transmitted infection (STI)
- It can also be spread by contact with infected blood or from mother to child during pregnancy, childbirth or breast-feeding
- Various diagnostic tests (Oral, blood*)
- 2014 ~ 1.1 million persons ≥13 years old living with HIV infection in the United States
- Without medication; HIV → AIDS
Human Immunodeficiency Virus (HIV)

- Disease trajectory has changed dramatically over the past decade
- There's no cure for HIV/AIDS
- There are medications that can significantly slow the progression of the disease (~ chronic condition)
- Different R classes and regimens
- PIs, NRTIs, NNRTIs, IIs
Human Immunodeficiency Virus (HIV)

- Close monitoring and follow-ups
- Medication adherence
- CD4 cells (important disease marker)
- Counseling, coping and support
- Lifestyle
- Burden of treatment and illness are well recognized
The HIV Clinic at Mayo Clinic

• The HIV clinic has longstanding commitment to delivering high-quality, compassionate patient care
• Creating an integrated, multidisciplinary care model
• Optimizing treatment adherence
• Facilitating patient appointments
• Understanding challenges inside and outside the clinic (e.g. physical, financial, social)
The HIV Clinic structure

• Structure
  – 6 ID staff consultants
  – 8 ID fellows
  – 2 HIV-certified nurse coordinator to assist in care and arrange referrals and appointments to other specialty areas
  – On-site HIV-care expert psychiatrist
  – 3 case manager who works intensively to overcome barriers to appropriate medical and psychosocial services
The HIV Clinic structure

- On-site specialty consultation
- 1 medical social worker with extensive experience working with HIV-infected persons
- 1 on-site pharmacist to provide patients with insight into medications and treatment programs
- Dietitians to assist and consult regarding nutrition
- 3 front-desk schedulers
Hypothesis

• The HIV clinic, with its longstanding commitment to optimizing healthcare, in this complex patient cohort may exhibit elements of MDM
  – Excellent care continuum outcomes
Study design

- A qualitative “case study” design
- Observe and collect information from Mayo HIV Clinic:
  - Direct observation of care operations and clinic visits
  - Semi-structured individual interviews with key clinical and clerical staff
  - Semi-structured interviews with patients (and caregivers)
  - Survey to a sample of patients attending the HIV clinic
Question

• What elements about the HIV clinic care model are concordant or discordant with MDM?
  – From the patient’s view
  – From the clinician’s view
  – Researcher observations
From the patient's view

**Fit**

Coordinated team

HIV stigma

Goals

Life space

Scheduling

Adherence

Medication

CD4

Supportive

Flexible

Available

Resources

Decision making

Daily activities

Enacting control

**(Un)Continuity**

Competing priorities

Resources

From the previous experiences

Coping

**Daily activities**

From the patient's view

Decision making

**Fit**

Coordinated team

HIV stigma

Goals

Life space

Scheduling

Adherence

Medication

CD4

Supportive

Flexible

Available

Resources

From the previous experiences

Coping

**Daily activities**

From the patient's view

Decision making

**Fit**

Coordinated team

HIV stigma

Goals

Life space

Scheduling

Adherence

Medication

CD4

Supportive

Flexible

Available

Resources

From the previous experiences

Coping

**Daily activities**
Biography

Coping and living with HIV
Dealing with the stigma
Living roles

Social

Adherence, follow-up, education, enacting control

Resources

Pharmacist, case manager, transportation, flexible scheduling, financial support

Realization

Empathetic, shared decision making, respectful, flexible

Environment

Concordant
Multiple clinicians = long appointments (unneeded)

Living with HIV and social or peer support

Adherence, follow-up, education, enacting control

(Un)Continuity of care

Biography

Environment

resources

social

realization

Discordant
From the clinician's view

- Asking about patients’ daily lives and activities
- Patient adherence to medication
- Impact of work of personal life (clinician)
- Giving work to patients (empowering self-enactment)
- Coping and counseling (patients)
Clinician take

- Long days for patients
- Overcoming barriers and identifying facilitators
- Education + practice + research
- Perceived value of care through patients feedback
- Dedicated pharmacist + social worker + case managers
- Integrated team presentations + responsibilities
- Team members roles and scheduling
So, is the HIV clinic a MDM clinic?

- **Concordant:**
  - Patients capacity (barriers and facilitators)
  - Integrated, coordinated team care
  - Long-term goals (adherence, wellness, follow-ups)
  - Life space and biography (stigma, living with HIV healthcare)
  - Available expertise + best evidence (practice/education/research)
  - Resources to minimize disruption (scheduling, transportation)
  - Shared decision making
So, is the HIV clinic a MDM clinic?

- Discordant:
  - (Un)Continuity of care (challenges/changes/patient-clinician)
  - Long visits + multiple clinicians = long days (time off, travel)
  - Living with HIV beyond healthcare (e.g. lack of support group resources)
MDM Clinic PILLARS: The HIV Clinic Case

- Patient capacity
  - Barriers & Facilitators
- Integrated care
- Long-term goals
- Life space & biography
- Available expertise and best evidence
- Resources to minimize disruption
- Shared decision making
Questions or thoughts?
THANK YOU
Minimally Disruptive Medicine in the Safety Net

MDM Workshop
October 23, 2017
Introduction

Clinician-researcher at the U of MN

• Clinical:
  – Internist and pediatrician in primary care

• Research:
  – How to improve primary care for patients with chronic disease + social vulnerabilities
  – Part of HCMC’s Center for Patient and Provider Experience
Patients with Social Vulnerability

Adapted from the Cumulative Complexity Model, Shippee 2012

Life Demands

Patient Workload

Patient Capacity

Engagement (access, utilization, self-care)

Burden of Treatment

Burden of Illness

Patient Outcomes

Resources

- Minimum wage part-time job
- Limited English
- Living in food desert
- No insurance
- Low health literacy
- Bus transportation
- Unsafe neighborhood
- Caring for aging parents
Community Health Centers

Mission:

• Improve access to care for low-income, underserved, and vulnerable populations

• Provide fully comprehensive range of primary care services
  – Health services
  – Diagnostic laboratory and radiologic services
  – Preventive health services
  – Emergency medical services
  – Pharmaceutical services

• Involve the community in both management and governance
  – Roots in community activism of the 1960s
    (Drs. Sidney and Emily Kark, Dr. Jack Geiger)
Community-University Health Care Center

• FQHC affiliated with U of MN Academic Health Center
• Provides:
  – Medical, psychiatric, prenatal, dental and mental health care
  – Care coordination and pharmacy services
  – Legal services
  – Social work and financial services
  – Advocacy for domestic abuse and sexual assault
  – Interpretation (Spanish, Somali, Vietnamese, Hmong, Lao)
Community-University Health Care Center

- Serves 11,000 patients through >55,000 visits

- Top non-English languages:
  - Spanish 15%
  - Somali 12%
  - Vietnamese 4%
CUHCC

- Certified Health Care Home
- Certified Behavioral Health Home

→ Multidisciplinary Team-Based Care
MDM in Action at CUHCC

• **MDM**: Seek to decrease the work of care while increasing the capacity of the patient to do the work.
  – Consider the patient’s burden of care
  – Think about capacity to do all that we prescribe
Team-based Care

• Medical:
  – Family medicine, internal medicine, pediatrics, nurse midwife
  – Care coordination services
  – Integrated behavioral health

• Dental

• Behavioral Health

• Psychiatry:
  – Case management services
  – Mindfulness and other group visits
  – Adult rehabilitative mental health services (ARHMS)
Pharmacy Services

• Clinical pharmacists and residency program
  – Medication counseling & education
  – Comprehensive medication management

• 340B Drug Discount Program
  – Medication access
Legal Services

• Stinson Leonard Street Legal Clinic
  – Free legal services for CUHCC patients
    • Family law (divorce, child support)
    • Guardianship and estate planning
    • Immigration
    • Housing
    • Government benefits
  – Partner since 1993
Community Health Worker

• Trusted, knowledgeable frontline health personnel who typically come from the communities they serve

• Bridge cultural and linguistic barriers, expand access to care
  – Health education, goal setting
  – Home visits
  – Particular focus on HTN & DM
Substance Abuse Services

• Tobacco cessation supports
  – Medical, pharmacy, community-based

• Screening and referrals for chemical dependency / substance abuse
  – Screening, Brief Intervention, and Referral to Treatment – integrated behavioral health

• Suboxone providers and nurse management
  – Treatment of opioid addiction
  – Team-based approach: clinician, nurse, behavioral health
Professional Education

Mission: to engage students in developing the knowledge, skills, and attitudes to provide excellent urban health care

– 250 health professional students & residents
– Learn to provide care to those who:
  • face socio-economic barriers to health
  • have limited English proficiency
  • Varied cultural backgrounds
Questions?

earogers@umn.edu