How to Submit a Question

• At any time, type your question into the “Questions” section of your GoToWebinar control panel.
• Select “Send” to submit your question to the moderator.
• Questions will be read aloud by the moderator at the end of the presentation.
Research Context

- How do we optimize care for the growing number of people living with multiple chronic conditions (MCC)?
Policy Context

Strategic Framework on MCC

- Goal 4:
  Facilitate research to fill knowledge gaps about, and interventions and systems to benefit, individuals with multiple chronic conditions.

AHRQ.gov/mcc
Research on Multiple Chronic Conditions: Where We are and Where we Need to Go

Joy Basu, PhD, MBA

Medical Care Special Issue

Advancing the Field: Results from the AHRQ Multiple Chronic Conditions Research Network
What’s Included?

• Overview papers:
  – Conceptual model for MCC care
  – Discussion of methodological challenges

• Major themes in Research:
  – Examination of determinants of health care costs and utilization
  – Treatment guidelines and effects
  – Special considerations for patients with both physical and behavioral/substance abuse conditions

Future Directions for MCC Research

• Methods
  – Including person-centered and person-driven measures and outcomes

• Treatment guidelines
  – Address high-prevalence and high-cost conditions
  – Consider the effect of MCC on treatment complexity or burden

• Health Systems
  – Further develop coordinated care models (ACOs, Patient-Centered Medical Homes etc.)
  – Include MCC patients in coordinated care efforts
Nilay Shah, PhD
*Out of Context: Clinical Practice Guidelines and Patients with Multiple Chronic Conditions. A Systematic Review*

Annette DuBard, MD, MPH
*Use of Medical Homes by Patients with Comorbid Physical and Severe Mental Illness*

Joel Cantor, ScD
*The Fragmentation of Hospital Use Among a Cohort of High Utilizers: Implications for Emerging Care Coordination Strategies for Patients with Multiple Chronic Conditions*

**Out of Context: Clinical Practice Guidelines and Patients With Multiple Chronic Conditions**

AHRQ MCC Research Network
The work of being a chronic patient

- Sense-making work
- Organizing work and enrolling others
- Doing the work
- Reflection, monitoring, appraisal

Cumulative Complexity Model

Life

Workload

Capacity

Scarcity

Burden of treatment

Outcomes

Burden of illness

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

People with more chronic conditions attend more visits, get more tests, and more medicines
Shippee D, In press

2 hours/day spent on health-related activities
Jowsey and Yem. BMC Public Health 2012

Of 83 workload discussions in 46 primary care visits (24 min): 70% left unaddressed
Bohlen et al. Diabetes Care 2011

Goals

• To conduct a systematic review of type 2 diabetes guidelines to assess the extent to which these guidelines take into account comorbidities, socio-personal context and personal preferences in formulating recommendations
Methods

Systematic review of clinical practice guidelines for type 2 diabetes

![Diagram showing the process of identifying and selecting references for the systematic review. The diagram indicates the following steps: 902 potentially relevant references identified by search, 758 excluded after screening of title/abstract, 144 references selected for full text retrieval, 116 excluded in full text screening, 28 included and summarized in the report. Reasons for exclusion include: Type 1 diabetes mellitus, not a guideline, executive summary or review of an included guideline, outdated or duplicate version of an included guideline.]
## Results

<table>
<thead>
<tr>
<th>Clinical Recommendation</th>
<th>Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SP</td>
</tr>
<tr>
<td>Workload</td>
<td></td>
</tr>
<tr>
<td>BG self-monitoring</td>
<td>6/22</td>
</tr>
<tr>
<td>Health care visit frequency</td>
<td>1/12</td>
</tr>
<tr>
<td>Aspirin use</td>
<td>2/18</td>
</tr>
<tr>
<td>Goals</td>
<td></td>
</tr>
<tr>
<td>LDL goal</td>
<td>3/24</td>
</tr>
<tr>
<td>Blood pressure goal</td>
<td>1/22</td>
</tr>
<tr>
<td>Glucose goal</td>
<td>10/18</td>
</tr>
</tbody>
</table>

Co indicates comorbidities; PP, personal preference; SP, socio-personal context.

## Comorbidities

- **Treatment goals**
  - LDL goal
  - BP goal
  - Glucose goal
  - BG goal
  - Health care visit frequency
  - Aspirin

- **Treatment burden**
**Socio-personal context**

- Treatment goals
  - LDL goal
  - Glucose goal
  - BP goal
  - BG monitoring
  - Health care visit frequency
  - Aspirin

**Patient preferences**

- Treatment goals
  - LDL goal
  - Glucose goal
  - BP goal
  - BG monitoring
  - Health care visit frequency
  - Aspirin

AHRQ MCC Research Network
Summary

• Lack of explicit consideration of context for patients with MCCs
• Use of “blanket statements”
• Comorbidities considered biologically rather than complexity

Implications for Guidelines Development

• Challenges with evidence (indirectness re: MCC)
• Impact of unclear trade-offs
• Use of the GRADE approach in developing guidelines
• Consideration of patient context and individualization of care (SDM)
Use of Medical Homes by Patients with Comorbid Physical and Mental Illness

Jesse C. Lichstein, MSPH; Marisa E. Domino, PhD; Christopher A. Beadles, MD, PhD; Alan R. Ellis, PhD, MSW; Joel F. Farley, PhD; Joseph P. Morrissey, PhD; Gordon W. Gauchat, PhD; C. Annette DuBard, MD, MPH; Carlos T. Jackson, PhD

Key Research Objective

Compare medical home use among patients with comorbid severe mental illness (SMI) to use among those with only chronic physical comorbidities
Context

- Medical comorbidities are common among patients with SMI
- People with SMI have higher risk of poor health outcomes and avoidable complications
  – And relatively low use of primary and preventive care
- Medical Home enrollment has been associated with lower hospitalization rates and better chronic disease care in numerous settings, including North Carolina Medicaid

Research Methods

- Data: North Carolina Integrated Data for Researchers (FY2008-2010)
- Subjects: Medicaid & medical home enrolled children & adults in NC with ≥2 of 8 chronic conditions
- Analyses:

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Main Independent</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 Medical home participation (≥1 visit)</td>
<td>Diagnosis of SMI (depression w/out psychosis, psychosis, and neither)</td>
<td>GEE, binomial distribution, logit link, exchangeable correlation</td>
</tr>
<tr>
<td>Model 2 Medical home utilization (# visits)</td>
<td>Diagnosis of SMI (depression w/out psychosis, psychosis, and neither)</td>
<td>GEE, negative binomial distribution, log link, exchangeable correlation</td>
</tr>
</tbody>
</table>
Key Findings

<table>
<thead>
<tr>
<th></th>
<th>Children (age 6-17)</th>
<th>Adults (age 18-64)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Participation, of</td>
<td>Participation, of</td>
</tr>
<tr>
<td></td>
<td>those Enrolled</td>
<td>those Participating</td>
</tr>
<tr>
<td></td>
<td>(N=8,759)</td>
<td>(N=7,452)</td>
</tr>
<tr>
<td></td>
<td>(N*t=20,403)</td>
<td>(N*t=15,468)</td>
</tr>
<tr>
<td></td>
<td>Utilization, of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>those Participating</td>
<td></td>
</tr>
<tr>
<td>Unadjusted Rates,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total study population</td>
<td>75.8%</td>
<td>4.55</td>
</tr>
<tr>
<td></td>
<td>73.3%</td>
<td>4.71</td>
</tr>
<tr>
<td>Marginal Effects of SMI¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major depression only</td>
<td>-0.050*</td>
<td>-0.22</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(0.18)</td>
</tr>
<tr>
<td></td>
<td>0.0110</td>
<td>0.101</td>
</tr>
<tr>
<td></td>
<td>(0.0068)</td>
<td>(0.085)</td>
</tr>
<tr>
<td>Psychosis</td>
<td>-0.122**</td>
<td>-0.92**</td>
</tr>
<tr>
<td></td>
<td>(0.044)</td>
<td>(0.26)</td>
</tr>
<tr>
<td></td>
<td>-0.082**</td>
<td>-1.02**</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
<td>(0.10)</td>
</tr>
</tbody>
</table>

¹Omitted=No Depression or Psychosis. All models controlled for: chronic physical illness, total # illnesses, age, race, Hispanic ethnicity, gender, months in the medical home, and time trends

*p<0.05, **p<0.01

Implications

- Generally high use of medical homes among patients with MCC → Lower use for patients with comorbid SMI
  - Particularly for adults and children with psychosis, and children with depression
- Need for targeted strategies to increase engagement in medical home among patients with SMI
  - Providing access to primary care medical home is not sufficient to assure engagement
  - Opportunity for both patient-level and provider-level strategies
- Heterogeneity in the SMI population, and in local healthcare environment, may require variety of innovative approaches
The Fragmentation of Hospital Use Among a Cohort of High Utilizers: Implications for Emerging Care Coordination Strategies for Patients with MCC

Katherine Hempstead, PhD; Derek DeLia, PhD; Joel C. Cantor, ScD; Tuan Nguyen, PhD; and Jeffrey Brenner, MD

Key Questions

• To what extent is the care of high users of hospital care “fragmented” among multiple facilities?
• What are the implications of hospital care fragmentation for patients with multiple chronic conditions (MCC)?
Context

• Excessive hospital use and the fragmented nature of US healthcare are major contributors to high health care costs
• Patients with MCC who are high users of hospital care are the focus of Patient-Centered Medical Homes (PCMH), Accountable Care Organizations (ACO), and other system reforms
• Fragmentation of hospital use among MCC patients may raise significant challenges for these reforms

The Research

• **Population**: Adult patients hospitalized in 2007 or 2008 with at least one additional stay within two years (n=291,147)
• **Data Source**: Longitudinal New Jersey statewide uniform hospital billing data linked to charity care and mortality records, 2007-2010*
• Analyze predictors of “fragmentation” defined as the **number of different hospitals visited**, by patient demographics, payer, chronic conditions, hospital market concentration, and total number of hospital stays
• Poisson regression models

*Data linkage performed with the assistance of Ping Shi of the NJ Dept. of Health and Daisuke Goto of Rutgers CSHP
Risk of visiting multiple hospitals rises with number of hospital stays

Higher Risk of Fragmentation

- Multiple chronic conditions
  - ARR* = 1.14 for patients with 2-4 chronic conditions & 0.98 for patients with 5+ conditions (versus none)
- Mental health and substance use disorders
  - ARR = 3.59
- Middle aged and privately insured
  - ARR = 3.42 for patients aged 35-49 vs. 80+
  - ARR = -1.46 for Medicare vs. privately insured
- Less concentrated hospital markets
  - ARR = -15.4 for each point of the Herfindahl-Hirschman Index

*ARR is Adjusted Relative Risk, based on multivariate Poisson regression models. All ARRs shown are significant at the p<0.0001 level.
Implications

• While not necessarily inappropriate, fragmentation is common (25% of our cohort) and may imperil patient care coordination
• Raises challenges for PCMH, ACO, readmission reduction programs and other care improvement models
• Regional health information exchange critical
• Important to educate providers & patients about potential adverse consequences of fragmented care
• Further research needed on the link of fragmentation to quality and outcomes of care

Questions?

• Please type your question into the “Questions” section of your GoToWebinar control panel.
• Select “Send” to submit your question to the moderator.
• Questions will be read aloud by the moderator.
Thank you for attending today’s webinar

- Please remember to visit: AHRQ.gov/mcc
- The special supplement is now publicly available online:
  http://journals.lww.com/lww-medicalcare/toc/2014/03001
- Contact Emma_Oppenheim@abtassoc.com with questions or comments.