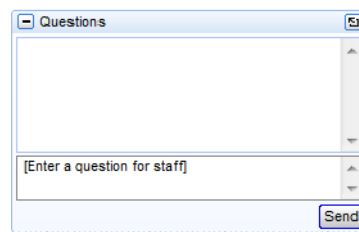


## Highlights from the Medical Care Special Issue on Multiple Chronic Conditions



### 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.





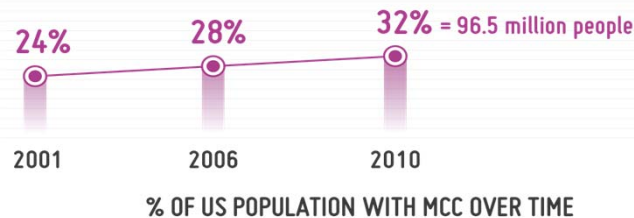
## Multiple Chronic Conditions Research: Where Are We?

Tess Miller, DrPH

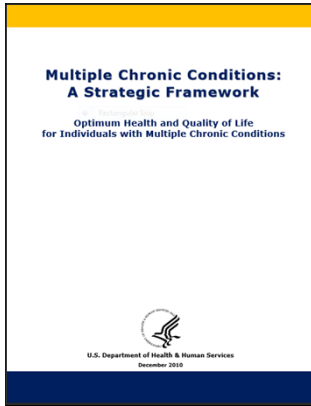


### Research Context

- 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](http://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



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SUPPLEMENT 2


# MEDICAL CARE

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ADVANCING THE FIELD:  
Results from the AHRQ Multiple Chronic  
Conditions Research Network

Wolters Kluwer | Lippincott Williams & Wilkins

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**

Wyatt KD, Stuart LM, Brito JP, Carranza Leon BG, Domecq Garces JP, Prutsky Lopez G, Egginton JE, Calvin AD, Shah ND, Murad MH, Montori VM



# The work of being a chronic patient



Sense-making work



Organizing work and enrolling others



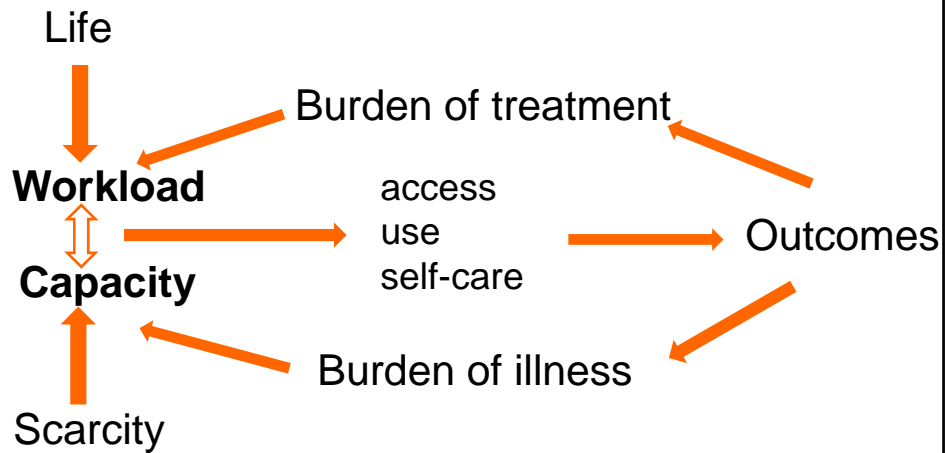
Doing the work



Reflection, monitoring, appraisal



# Cumulative Complexity Model



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

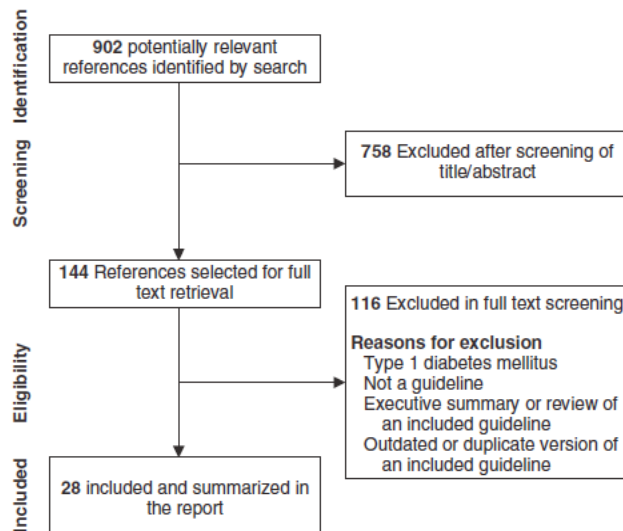




# Methods

## Systematic review of clinical practice guidelines for type 2 diabetes

Recommendations	Blood glucose self-monitoring	Health care visit frequency	Taking aspirin	Blood pressure goal	Glycemic control goal	LDL-cholesterol goal
Patient contexts						
Recommendation made in the guideline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comorbidities taken into account	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Socio-personal context taken into account	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient preferences taken into account	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



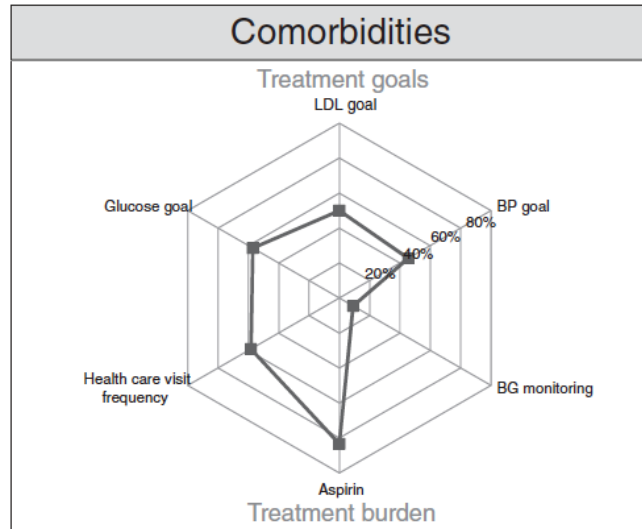
# Results

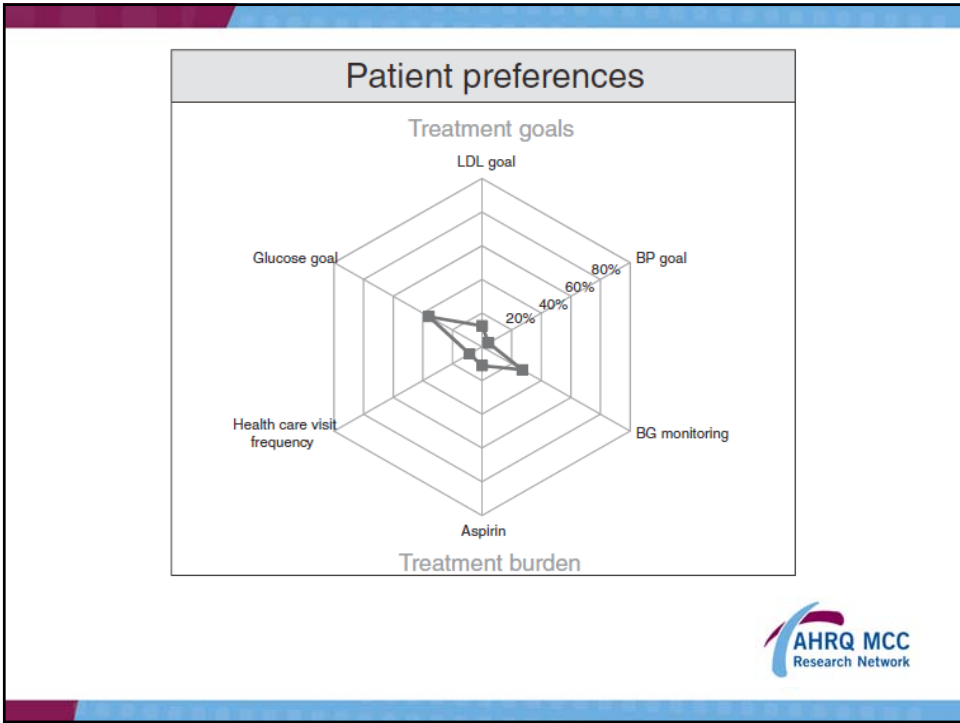
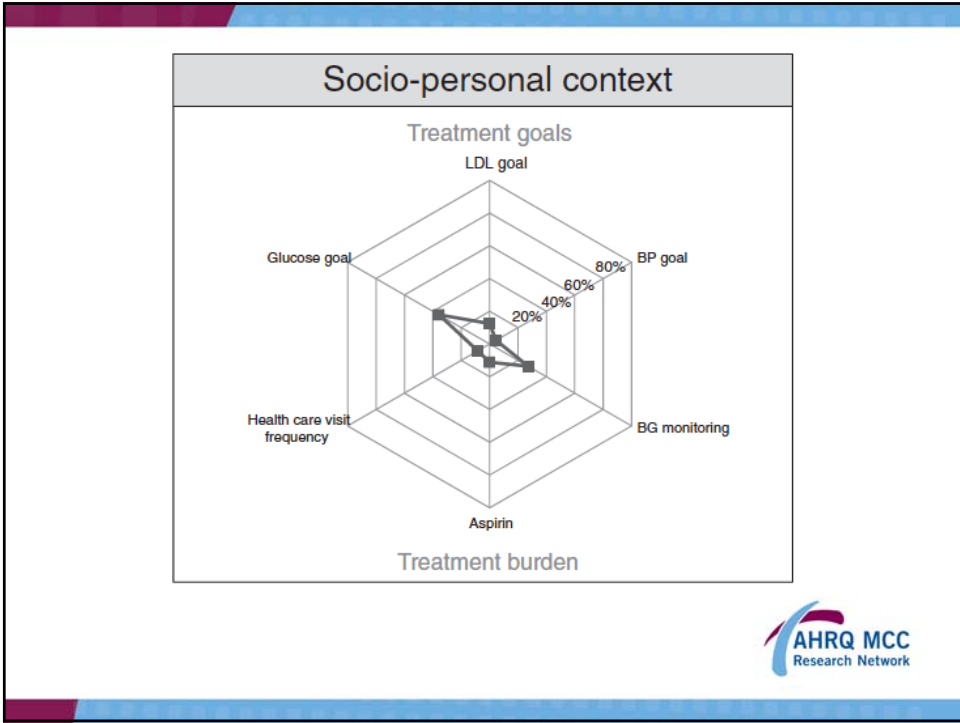
Clinical Recommendation	Domains		
	SP	PP	Co
<b>Workload</b>			
BG self-monitoring	6/22	7/22	2/22
Health care visit frequency	1/12	4/12	7/12
Aspirin use	2/18	1/18	15/18
<b>Goals</b>			
LDL goal	3/24	1/24	12/24
Blood pressure goal	1/22	2/22	10/22
Glucose goal	10/18	11/28	16/28

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



## Comorbidities





## 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  $\geq 2$  of 8 chronic conditions
- Analyses:

	Outcome	Main Independent	Model
Model 1	Medical home <b>participation</b> ( $\geq 1$ visit)	Diagnosis of SMI (depression w/out psychosis, psychosis, and neither)	GEE, binomial distribution, logit link, exchangeable correlation
Model 2	Medical home <b>utilization</b> (# visits)	Diagnosis of SMI (depression w/out psychosis, psychosis, and neither)	GEE, negative binomial distribution, log link, exchangeable correlation



## Key Findings

	Children (age 6-17)		Adults (age 18-64)	
	Participation, of those Enrolled (N=8,759) (N*t=20,403)	Utilization, of those Participating (N=7,452) (N*t=15,468)	Participation, of those Enrolled (N=105,542) (N*t=223,720)	Utilization, of those Participating (N=84,256) (N*t=163,868)
Unadjusted Rates, total study population	75.8%	4.55	73.3%	4.71
Marginal Effects of SMI <sup>1</sup>				
Major depression only	-0.050* (0.019)	-0.22 (0.18)	0.0110 (0.0068)	0.101 (0.085)
Psychosis	-0.122** (0.044)	-0.92** (0.26)	-0.082** (0.012)	-1.02** (0.10)

<sup>1</sup>Omitted=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



The slide features a blue and maroon background with a white curved line. The title is in bold black text. Below the title, the authors' names are listed. The AHRQ MCC Research Network logo is at the bottom left of the slide area.

## 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)?



The slide has a white background with a blue and maroon header and footer. The title 'Key Questions' is centered. Below it are two bullet points. The AHRQ MCC Research Network logo is in the bottom right corner.

## 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



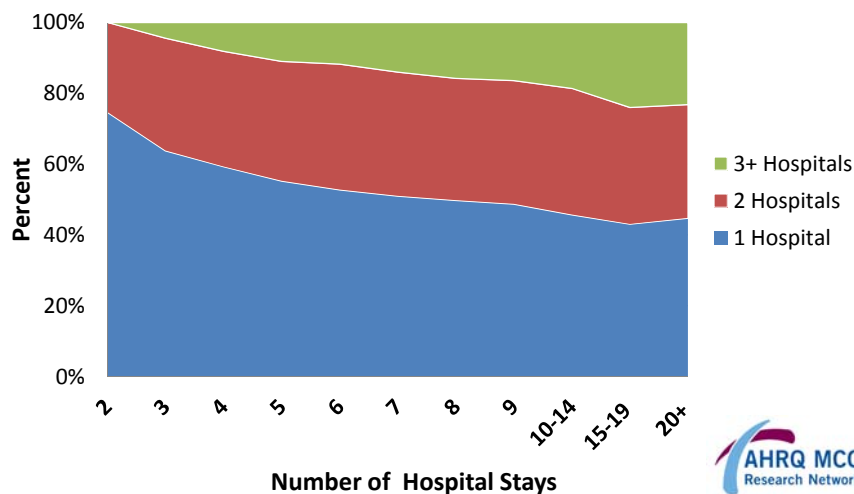
## The Research

- 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 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.

A screenshot of the GoToWebinar control panel's "Questions" section. It shows a text input field with the placeholder text "[Enter a question for staff]" and a "Send" button to the right. The window title is "Questions".

## Thank you for attending today's webinar

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- The special supplement is now publicly available online:  
<http://journals.lww.com/lww-medicalcare/toc/2014/03001>
- Contact [Emma\\_Oppenheim@abtassoc.com](mailto:Emma_Oppenheim@abtassoc.com) with questions or comments.

