Systems for Action
National Coordinating Center
Systems and Services Research to Build a Culture of Health

Strategies to Achieve Alignment, Collaboration, and Synergy Across Delivery and Financing Systems

Strategies for Dissemination of the Comprehensive Care Physician (CCP) and Comprehensive Care, Community and Culture Program (C4P) Models

Research In Progress Webinar
Wednesday, February 5, 2020
12:00-1:00 pm ET/9:00-10:00am PT

colorado school of public health

Agenda

Welcome: Chris Lyttle, Systems for Action Deputy Director

Presenters: David Meltzer, MD PhD, Harold Pollack, PhD, and Emily Perish, MPP

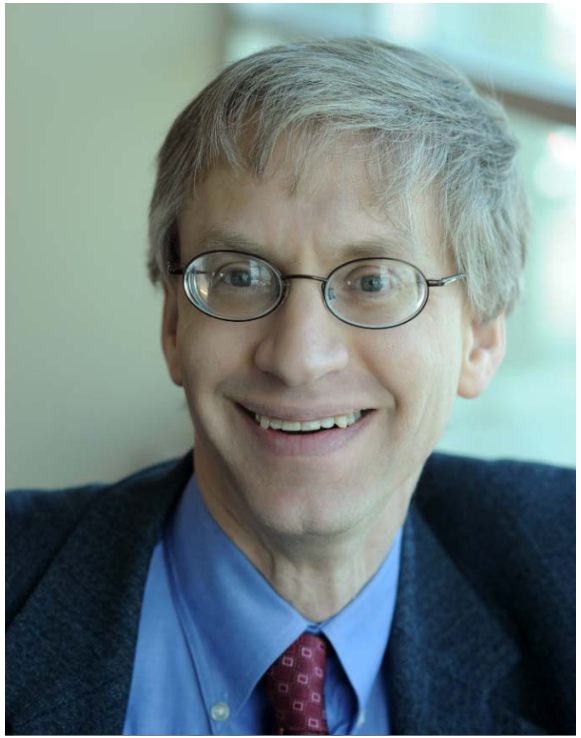
Commentary: Cressa Perish, MD

Q&A: Chris Lyttle, Systems for Action Deputy Director

David Meltzer, MD, PhD

Dr. Meltzer is the Fanny L. Pritzker Professor in the Department of Medicine, Chief, Section of Hospital Medicine - In 2012, Meltzer received a Center for Medicare and Medicaid Innovation (CMMI) award and launched the Comprehensive Care Physician (CCP) Program, in which his team studies the effects of improved continuity in the doctor-patient relationship between the inpatient and outpatient setting on the costs and outcomes of care for frequently hospitalized Medicare patients. Meltzer's research explores problems in health economics and public policy with a focus on the theoretical foundations of medical cost-effectiveness analysis and the cost and quality of hospital care. Since 1997 he has developed the inpatient general medicine services at the University of Chicago as a Learning Health Care System to produce knowledge on how to improve the care of hospitalized patients, mobilizing the clinical care process to generate and learn from diverse data from electronic health records, claims data, patient interviews, and bio-specimens on over 100,000 patients.

Harold Pollack, PhD



Dr. Pollack is Helen Ross Professor at the School of Social Service Administration. He is co-director of the University of Chicago Health Lab and co-founded the University of Chicago Crime Lab.

Past President of the Health Politics and Policy section of the American Political Science Association, his current research concerns services for individuals at the boundaries of the behavioral health and criminal justice systems, disabilities, and two major new efforts to address the opioid epidemic in Illinois and across the nation.

Emily Perish, PhD

Emily is the Director of Operations and Business Development for the University of Chicago Comprehensive Care Program, which houses the Comprehensive Care, Community & Culture Program (C4P). In her role, she is responsible for leading the program's strategic development and expansion locally, nationally, and internationally with Dr. Meltzer in addition to overseeing the program's daily operations. Prior, Emily participated in a competitive 2-year leadership training program at University of Chicago Medicine and worked on a range of key population health initiatives. She has also performed independent research about the use of mobile health interventions to improve maternal health outcomes and has experience in the public sector with the Illinois House of Representatives.

Emily received an MPP from the University of Chicago Harris School of Public Policy where she focused on health policy, inequities, and economics. She is a Chicago native and dedicated to improving the quality and efficiency of health care delivery for and with her community.

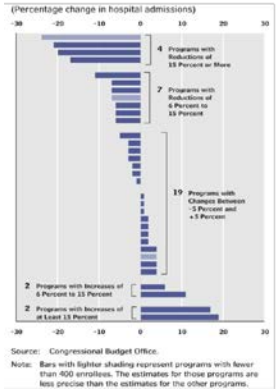
Cressa Perish, MD

Dr. Perish is a family practice physician at UChicago Medicine Ingalls Memorial Hospital. After completing medical school at Ohio State University and residency at Northwestern University, Dr. Perish established a private care practice at Ingalls Hospital, a community hospital in Harvey on Chicago's south side, in 1985. Since then, she has practiced independently caring for her patients in the hospital, clinic, and sometimes in their homes.

Dr. Perish has served as President of Ingalls' Medical Staff (2016-2018) and currently serves as Associate Medical Director, Ingalls Provider Group IPA, Ingalls Care Network ACO. She also helped to establish a Comprehensive Care, Community & Culture Program (C4P) at Ingalls and is participating as a Comprehensive Care Physician (CCP).

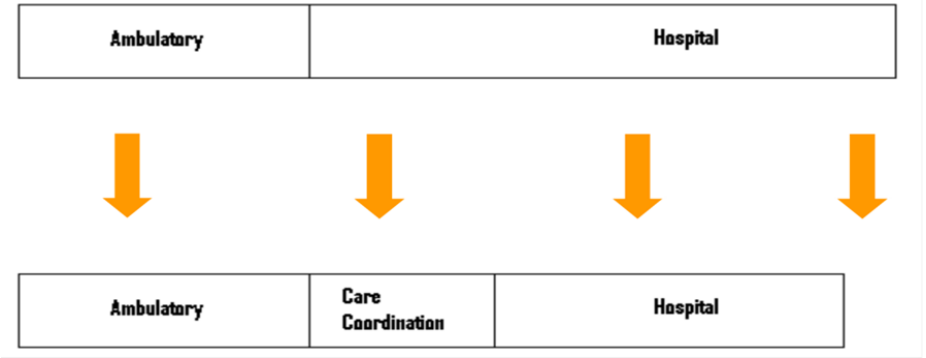
Challenge of Complexity, Care Fragmentation and Care Coordination

- Small fraction of patients account for large fraction health spending and adverse outcomes
  - Often multiple, interacting health conditions involving multiple specialists/treatment sites
  - Large fraction of these costs and adverse outcomes tied to hospitalization
- With new payment models (ACOs, readmission penalties, capitation), improving inpatient/outpatient care coordination key opportunity but challenging



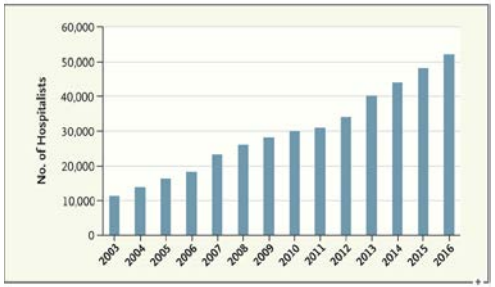
Design Feature	Number of Programs	Average Effects (Percent)		Change in Regular Medicare Spending Needed to Offset Programs' Fees[b] (Percent)
		Hospital Admissions	Regular Medicare Spending[a]	
Program Fees Put at Risk				
Yes	18	0	-1	-11
No	16	-2	1	-13
Substantial Direct Interaction Between Care Managers and Physicians				
Yes	7	-7	-5	-13
No	27	0	0	-11
Interaction Between Care Managers and Patients[c]				
By telephone and in person	8	-7	-3	-13
Primarily by telephone	23	1	0	-11
All Programs	34	-1	0	-11

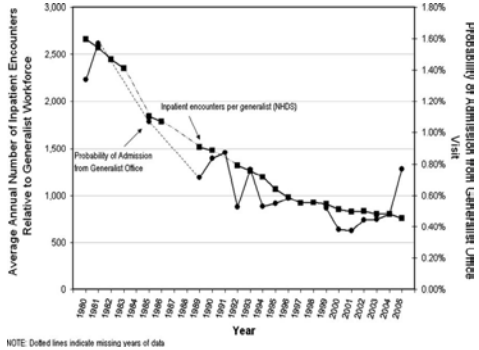
CBO, 2010



Hospitalists

- Change from traditional model of primary care physicians (PCPs) who care for patients in and out of the hospital
  - Hoped to improve care, lower costs
  - Advantages: Inpatient expertise, presence
  - Disadvantages: Discontinuities, loss of Dr-Pt Relationship
  - Net Effect: Modest
- Why did hospitalists grow?
  - Belief improve hospital care
  - Needs of primary care
    - Declining hospital vs. ambulatory volumes discourage traditional PCP
    - Declining hospital use with shift from hospitalization to ambulatory care
    - Increased ambulatory use with growth of preventive care
    - Organization of physicians into groups facilitated specialization





Ambulatory Economics Theory of Hospitalist Growth

(Meltzer, Chung, NBER Working Paper, 2010)

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- Compare time costs of two models:
  - Traditional model:
    - Internist time to see patients in hospital, clinic, transport
  - Hospitalist/PCP model
    - Hospitalist time to see patient in hospital, communicate with PCP
    - PCP time to see patient in clinic, communicate with hospitalist
  - Cost of PCP/Hospitalist vs. traditional model driven by per capita communication costs relative to transport costs for a traditional internist

$$\Delta Cost_{PCP/Hospitalist\ vs.\ Traditional} = 2\pi t_C - t_T \frac{(t_A + \pi t_H)}{(T_1 - t_T)} = 2\pi t_C - \frac{t_T}{N_{IA}}$$

- Cost of PCP/Hospitalist Model vs. Traditional Model falls when:
  - Admissions (π) fall relative to ambulatory visits
  - Communication costs (t_c) decline
  - Transport costs (t_T) rise
  - Physician work hours (T_I) decline
- Confirm with data on PCP use of hospitalists from Community Tracking Study




What is the Value of the Doctor-Patient Relationship for the Hospital Setting? And for Whom does it Matter?

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- Rich literature on the value of the doctor-patient relationship
  - Trust, interpersonal relationship, communication btw. doctor/patient, knowledge of the patient
- Patients value seeing their own doctor in the hospital
- Observational studies show lower costs, better outcomes with continuity of care
  - Care by PCP for > 10 years: 15% lower Medicare costs (Weiss et al AJPH 1996)
  - Lung CA patients cared for by own doctor in terminal hospitalization have 25% lower odds ICU use (Sharma et al, Annals, 2009)
- One experimental study
  - Wasson et al (JAMA, 1984) randomized 776 complex VA patients to see same physician vs. different physician in each primary care visit. Continuous care group:
    - 49% lower emergent hospitalizations (20% vs. 39%, $p<0.002$)
    - 38% lower hospital days (6.6 vs. 9.1, $p<0.02$)
    - 74% lower ICU days (0.4 vs. 1.4, $p<0.01$)

→ Discontinuity harmful/costly, esp. for complex, frequently hospitalized patients

→ Is there a practical way to restore continuity in the doctor patient relationship?

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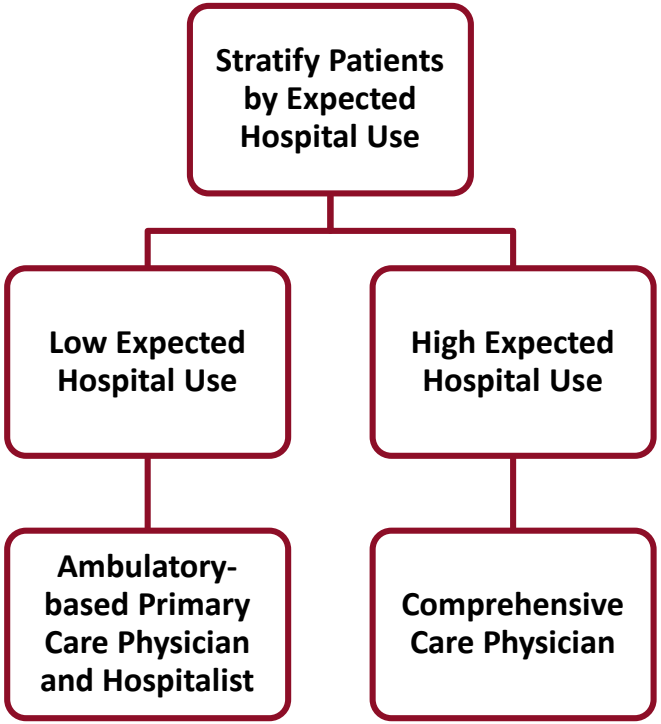
CCP Approach to General Medical Care



- **Advantages?**
  - Most frequently hospitalized patients get own doctor in both settings. Continuity:
    - Is valued by patients
    - Decreases unneeded testing/treatment, errors
    - Lowers doctor costs (travel, history taking)
  - All hospitalized patients get doctors with significant hospital experience and presence
    - Physicians can be specialists
  - Patient choice restored
  - CCP model can work for physician
  - Patient-centered medical home / bundling / readmission penalties
  - Smaller primary care base can fill hospital
- **Challenges?**
  - Can it be implemented?
    - Will patients switch? Will doctors let patients switch? Will doctors do job?
  - Will it work (improve outcomes and reduce costs?)
    - CMMI-funded 2,000-person RCT of CCP at UCM (2012-)
  - Can it be adapted to different clinical and economic contexts?
    - RWJF Comprehensive Care, Community and Culture Program (C4P)
    - Implementation studies

Key CMMI Design Elements

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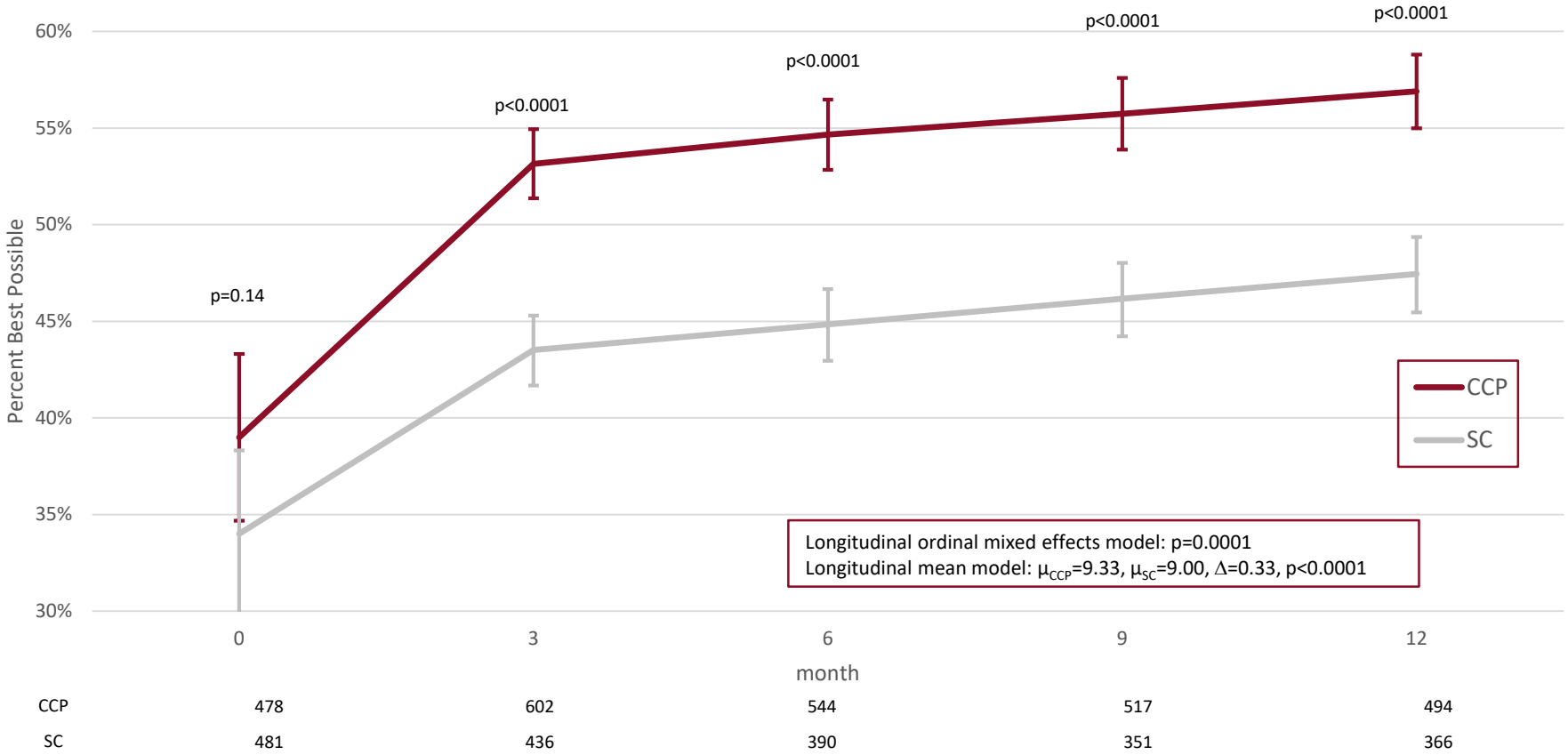
Lessons from Literature/Theory	Program Element
Focus on patients at increased risk of hospitalization	Patients expected to spend >10 days in hospital in next year; up to 40% of general medicine days, Medicare costs $50,000- $100,000 per year; diverse recruitment sources, including resident clinics
Maximize Direct Interaction with CCP/PCH	Panel size: 200. AM on wards. Midday buffer. PM in clinic.
Build Interdisciplinary Team	5 CCPs = 1000 patients. Organize CCP, RN, LPN, LCSW, clinic coordinator around common patient medical and psychosocial needs
Minimize costs (esp. coordination costs)	Small, well-connected teams, provider continuity, daily multidisciplinary rounds
Focus on care transitions	Post-discharge calls, Health IT
Financial incentives	Prepare for shared savings (randomized internal controls)
Sustainable roles and training for care team	Support the team members (group to spread weekend coverage, night coverage, psychosocial support, relevant clinical training (e.g., palliative care), academic development, recognition).
Rapid cycle innovation	Frequent, data-driven meetings that seek to engage relevant leaders
Rigorous evaluation	2,000 person RCT, Triple Aim (Better Care Better Health, Lower Costs), quarterly surveys and Medicare claims, external and internal evaluators

CCP Subjects

Characteristic	CCP N=996	SC N=996	P-value
Female, %	62	62	0.58
Dual, %	46	43	0.14
Black, %	88	86	0.14
White, %	6.9	7.6	0.55
Hispanic, %	3.7	3.8	0.91
Age in years, mean (SD)	63 (16)	64 (16)	0.33
Age groups %			
<50	22	21	0.55
50-64	25	24	0.64
65-74	30	30	0.71
75-84	17	17	1.00
85+	7.2	8.6	0.25

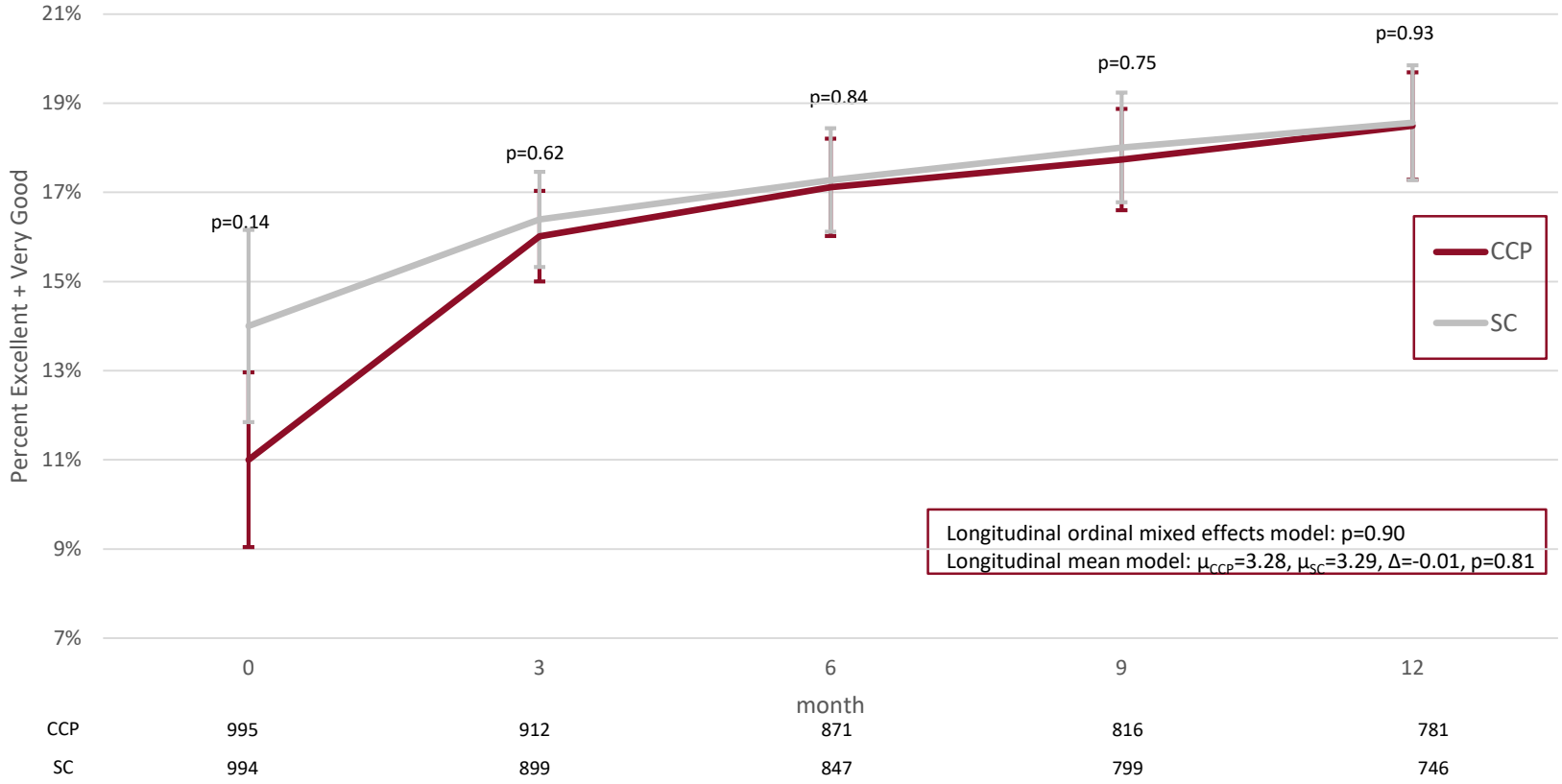
Characteristic	CCP N=996	SC N=996	P-value
Health Outcomes			
Provider rank, best possible, %	39	34	0.14
General health, excellent + very good, %	11	14	0.14
Mental health, excellent + very good, %	39	36	0.12
Hospitalizations in previous 12 months, %:			0.51
0	0.4	0.3	
1	33	33	
2 or 3	27	28	
4 or 5	6.7	7	
5<times<=10	4.4	3.5	
10< times	28	27	
Missing	0.7	1.6	
` Average per quarter (minimum est.)	1.13	1.10	

Physician Rating
(0 worst possible - 10 best possible)



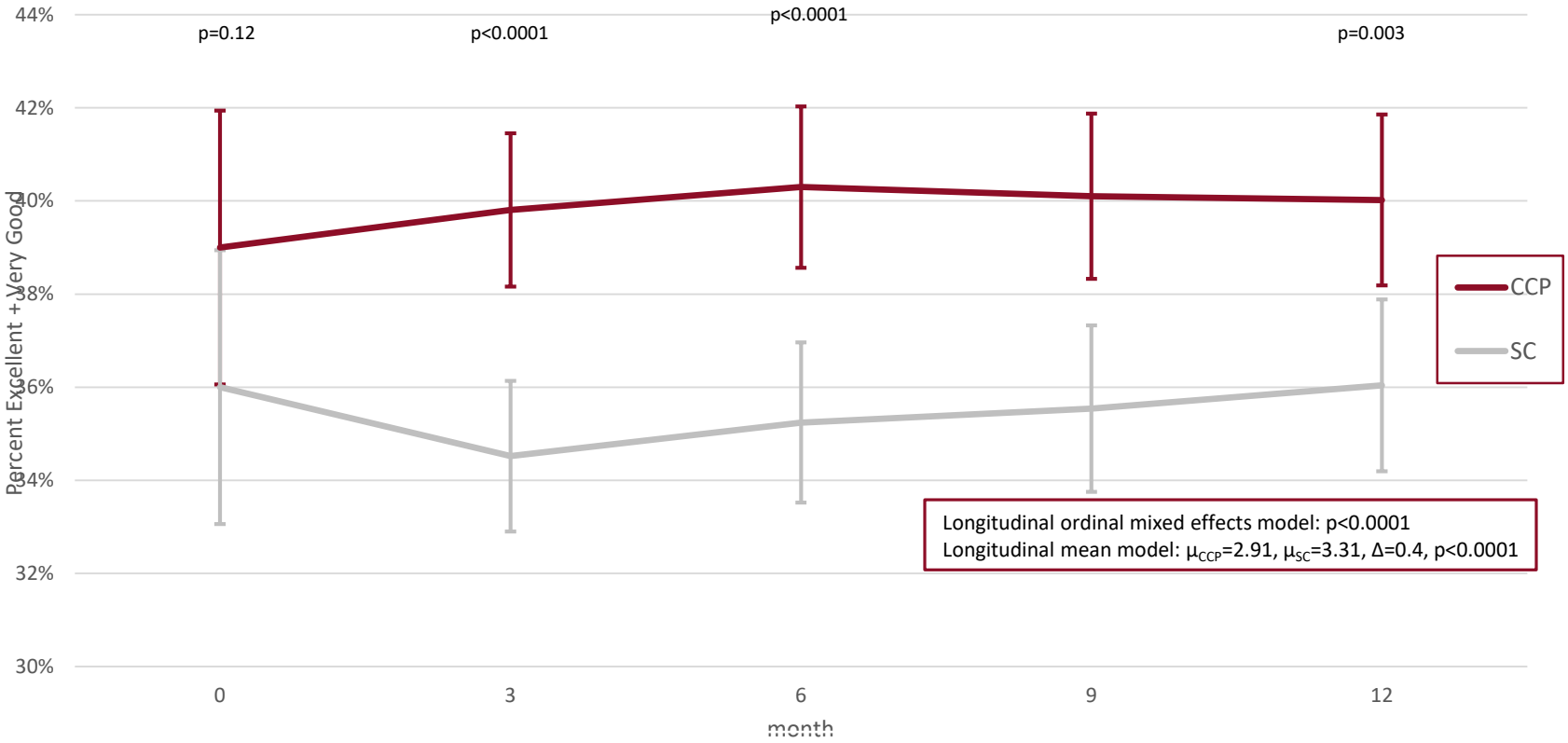
CCP	478	602	544	517	494
SC	481	436	390	351	366

General Health Rating



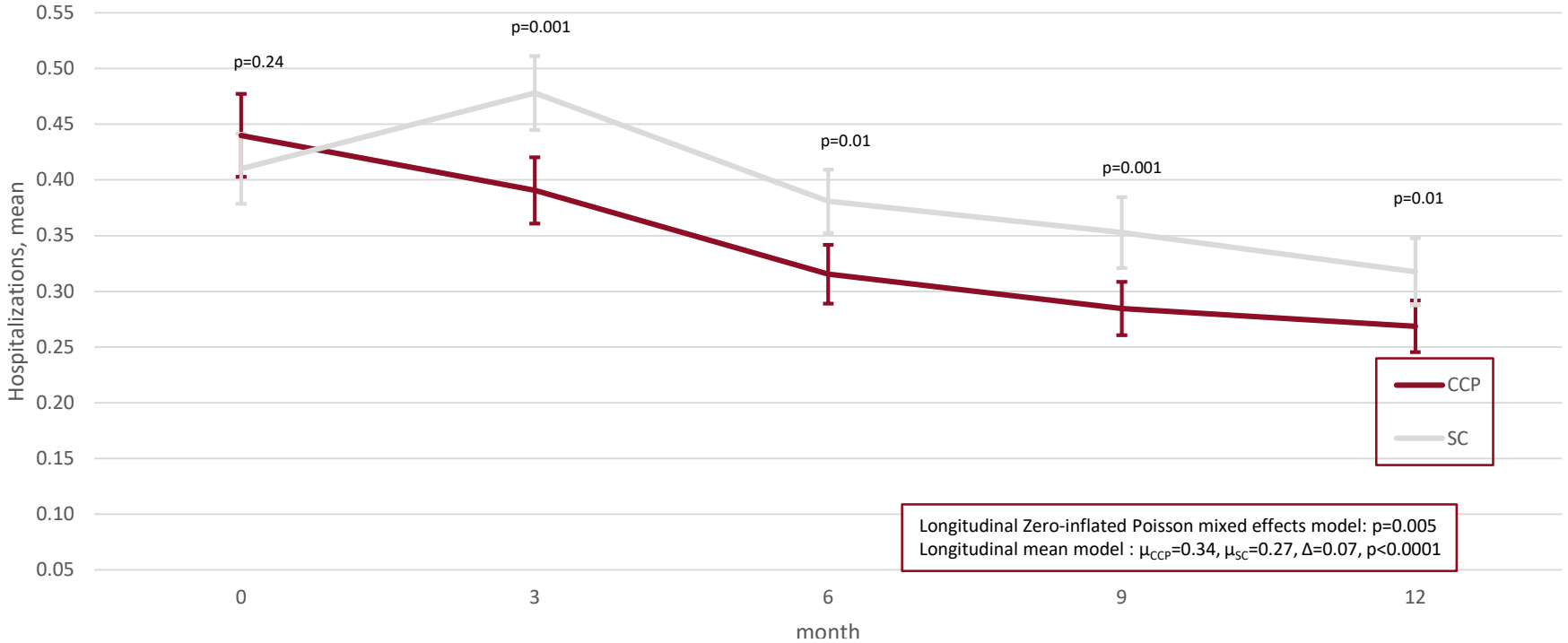
CCP	995	912	871	816	781
SC	994	899	847	799	746

Mental Health Rating



CCP	991	889	848	799	758
SC	991	867	831	778	727

Follow-up Hospitalizations



CCP	996	911	867	815	771
SC	996	900	842	793	734

CMMI Study Conclusions/Limitations

- It was possible to implement a CCP program at UCM
  - Positive patient outcomes, acceptable volumes for clinicians, acceptable ROI for hospital
- CCP care improved patient experience and at least maintained patient outcomes while reducing hospitalization by ~20% up to 1 year
  - Number needed to treat = enroll 4 patients to prevent 1 hospitalization over 1 year
  - Implies ~$4,000 lower hospital cost/patient/year if avg. cost of hospitalization ~$15,000
  - Program prevented ~250 hospitalizations and saved ~$4 million in 1000 patients over 1 year
- Limitations
  - Self-reported outcomes may be biased by patients and less than complete follow-up
  - Awaiting complete Medicare claims data to assess hospitalization and costs
  - Dual eligibles more likely to drop out due to Illinois Medicare-Medicaid Alignment initiative, especially healthier ones
  - New CCP program, one hospital, limited set of doctors, socioeconomically disadvantaged population

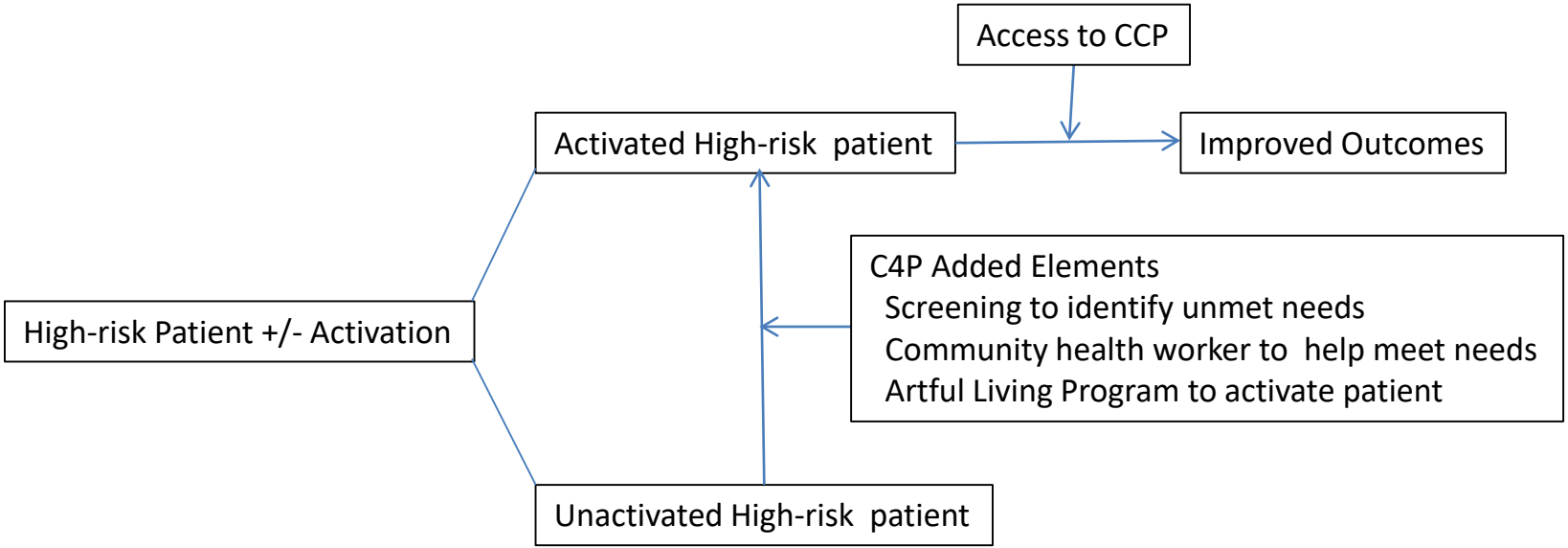
Comprehensive Care, Community & Culture Program (C4P)

+

- Systematic screening for unmet social needs with HealthLeads instrument covering 17 domains
- Access to community health worker to engage patient and connect to resources
- Access to community based arts and social programming to activate patient

Align resources across sectors by identifying and meeting patient needs to activate them to engage in their care

C4P Conceptual Model



C4P Pilot Study Primary Aims

1) Gain experience operating C4P
   - Recruit, organize and train team
   - Partner with patients to iteratively improve CHW and Artful Living programs
   - Insight into patterns of unmet social needs and implications for program design
     - Unmet needs in 17 domains highly concentrated; 67% of needs in 24% of population with 5+ needs
     - Latent class analysis of clusters of needs
2) 1-year pilot study of C4P/CCP/SC on:
   - Patient experience with provider
   - Self-rated general health and mental health status
   - Hospitalization rate
   - Patient activation (PAM)

Class and % Participants in Class (n=456)	1 (8%)	2 (14%)	3 (21%)	4 (3%)	5 (53%)
Food	68%	21%	34%	20%	0%
Housing	65%	14%	23%	27%	5%
Money	92%	26%	57%	60%	1%
Employment or Training	41%	15%	16%	40%	5%
Health Insurance	68%	39%	64%	53%	13%
Applying for Public Benefits	68%	21%	41%	40%	2%
Child Care or Activities	11%	0%	1%	80%	0%
Children School Issues	5%	0%	0%	93%	0%
Legal	57%	23%	24%	73%	1%
Transportation	92%	30%	50%	60%	5%
Personal Safety	62%	12%	10%	27%	2%
Treatment for Mental Health or Substance Abuse	35%	15%	5%	0%	2%
Budgeting	68%	20%	6%	7%	2%
Companionship	84%	45%	7%	13%	1%
Engaging in Enjoyable Activities	92%	100%	8%	20%	4%
Healthy Eating / Physical Activities	100%	85%	25%	40%	8%
Average # Unmet Needs	10.1	4.7	3.7	6.5	0.5
% of All Unmet Needs	30%	24%	29%	7%	10%

C4P RCT Pilot Study

Characteristic	SC N=172	CCP N=180	C4P N=182	P-value
Female, %	60	64	58	0.56
Dual, %	42	54	44	0.05
Black, %	87	88	86	0.65
White, %	11	9	9	0.65
Hispanic, %	2	3	4	0.48
Age in years, mean (SD)	62 (15)	62 (14)	60 (15)	0.29
Age groups %				0.79
<50	22	19	27	
50-64	30	31	28	
65-74	29	31	28	
75-84	14	16	13	
85+	6	3	5	

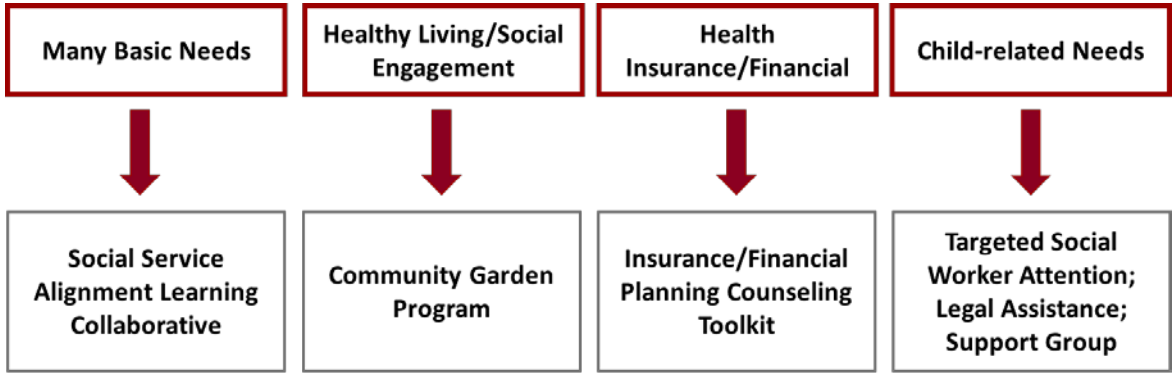
Characteristic	SC N=172	CCP N=180	C4P N=182	P-value
Health Outcomes				
PAM, highest, %	41	42	43	0.78
PAM, continuous, mean (SD)	71 (17)	72 (19)	71 (18)	0.05
Hospitalizations in previous 12 months, %:				0.56
0	25	18	22	
1	36	36	34	
2 or 3	22	24	27	
4 or 5	9	12	11	
5 < times <= 10	5	6	1	
10 < times	1	1	2	
Missing	2	3	3	
Average	1.78	2.13	1.80	

Preliminary Results by Study Arm

Outcome	Measure	Comparison to SC				C4P versus CCP		Favors C4P?
		CCP	p-value	C4P	p-value	difference	p-value	
Hospitalization rate	event rate ratio	1.022	0.92	0.730	0.15	0.714	0.11	yes
High baseline PAM	event rate ratio	0.833	0.59	0.893	0.73	1.072	0.83	no
Low baseline PAM	event rate ratio	0.972	0.93	0.730	0.32	0.750	0.37	yes
PAM continuous	mean	4.766	0.06	5.545	0.02	0.779	0.74	yes

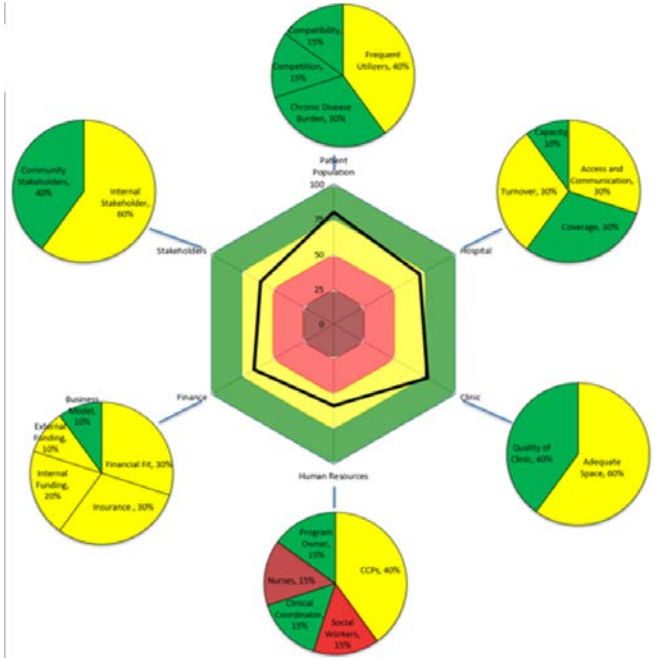
C4P Next Steps

- Complete analysis of CCP/C4P at UCM
  - CCP: Longer follow-up, costs, Duals/Non-Duals, hospitalization risk, Dr.-Pt relationship, EOL
  - C4P: Complete analysis of unmet social needs, including over time, and outcomes/claims
- Phase 2 Study (RWJ, additional funders?)
  - C4P vs. CCP vs. CC RCT (1000/arm)
  - C4P tailored to clusters of unmet needs



CCP/C4P Implementation Readiness Tool

Domain	Description
Patient Population	Does the site serve a sufficiently large patient population at increased risk of hospitalization?
Hospital	Does hospital have capacity to accommodate a CCP team and functions the CCP team would undertake?
Clinic	Is it possible for CCPs to care for patients in an outpatient clinic space? Co-location?
Human Resources	Access to physicians willing to be CCPs, nurses, social work, etc.?
Stakeholder Buy-in	Does health system leadership buy-into adoption?
Social Needs	Do social barriers play a significant role for patients in the site's population?
Finances	Value-based vs. fee-for-service? Acceptable risk adjustment/selection if value-based?



	The site is ready for expansion in this area with only small changes needed
	Some changes are necessary, but the site can achieve readiness in the near future
	Significant changes must be made, requiring long term planning to achieve readiness
	Site may not be optimal for expansion

The Comprehensive Care Institute (CCI)

- Launched 501c3 to spread CCP/C4P models of care to meet demand
  - National Science Foundation I-Corps Program
  - Media attention: NYT Magazine, conferences, etc.
- Mission:
  - To promote the adoption and continual improvement of comprehensive care models that take an integrated approach to addressing the medical and psychosocial needs of patients over time
- CCI Activities:
  1. Partner with health systems nationally and internationally to implement CCP/C4P
  2. Convene individuals and organizations interested in comprehensiveness in health care delivery to share and promote best practices
     - Build on experience of CMS-funded Comprehensive Care Collaborative
  3. Study the CCP model and deepen knowledge of models that increase care continuity

Local Dissemination

Academic/Large System

- University of Chicago Medicine
  - Rounder Model
  - Destination Medicine
- Rush Health
- NorthShore University HealthSystem

Community

- FQHCs
  - Friend Family Health Center
- Ingalls Memorial Hospital
- Other Chicago-area community hospitals

National Dissemination

Academic/Large System

- Vanderbilt Health
- Kaiser Permanente Mid-Atlantic Region
- UC Denver Health
- Early stages with several other systems

Payers

- Employers
  - City of Chicago
- CMS
  - Physician-Focused Payment Technical Advisory Committee (PTAC)
- Blue Cross Blue Shield
- Improved risk-adjustment methods or risk-selection approaches

International Dissemination

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Academic/Large System

- National University Singapore Health System
- UK National Health Service
  - Frimley Health Trust
- Manipal University, India

NUS National University of Singapore

NHS

MANIPAL ACADEMY of HIGHER EDUCATION
(Deemed to be University under Section 3 of the UGC Act, 1956)

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C4P Adaptation at Ingalls Hospital

Cressa Perish, MD

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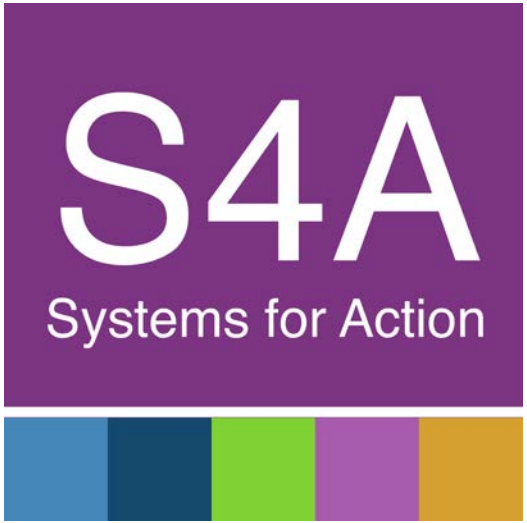
Thank you!

Questions?



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Acknowledgements

Systems for Action is a National Program Office of the Robert Wood Johnson Foundation and a collaborative effort of the Colorado School of Public Health, Health Systems, Management & Policy Department in Aurora, Colorado.

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