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Using Health IT to Improve Care Coordination and Outcomes in Patients with Complex Health Care Needs

February 20, 2014
2:30 pm – 4:00 pm ET

Moderator and Presenters Disclosures

Moderator:

Vera Rosenthal, M.P.H.*

Agency for Healthcare Research and Quality

Presenters:

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*Have no financial, personal, or professional conflicts of interest to disclose.

Improving Care Transitions for the Medically Complex Patient in Rural Montana

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Billings Clinic

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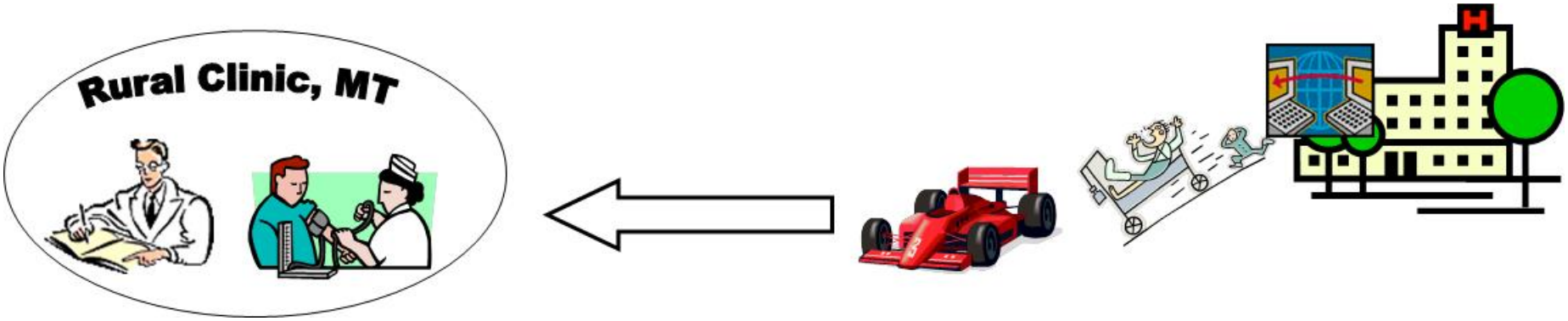
Current State

- 81 million patients with complex health care needs in 2020[1]
- 20% of (Medicare) patients rehospitalized <30 days[2]
- 50% without medical follow-up[2]
- Cost to Medicare in 2010: $17.5 billion[3]
- 19%–23% of discharged patients suffer an adverse event[4]
- 36% of discharged patients do not know names or purpose of new medications[5]
- 75% of outpatient follow-up visits occur before discharge summary arrives[6]

[1]Johns Hopkins 2002; [2]Jencks 2009; [3]Brennan 2012; [4] Kripalani 2007; [5]Maniaci 2008; [6]van Walraven 2002

The PITSTOP Project

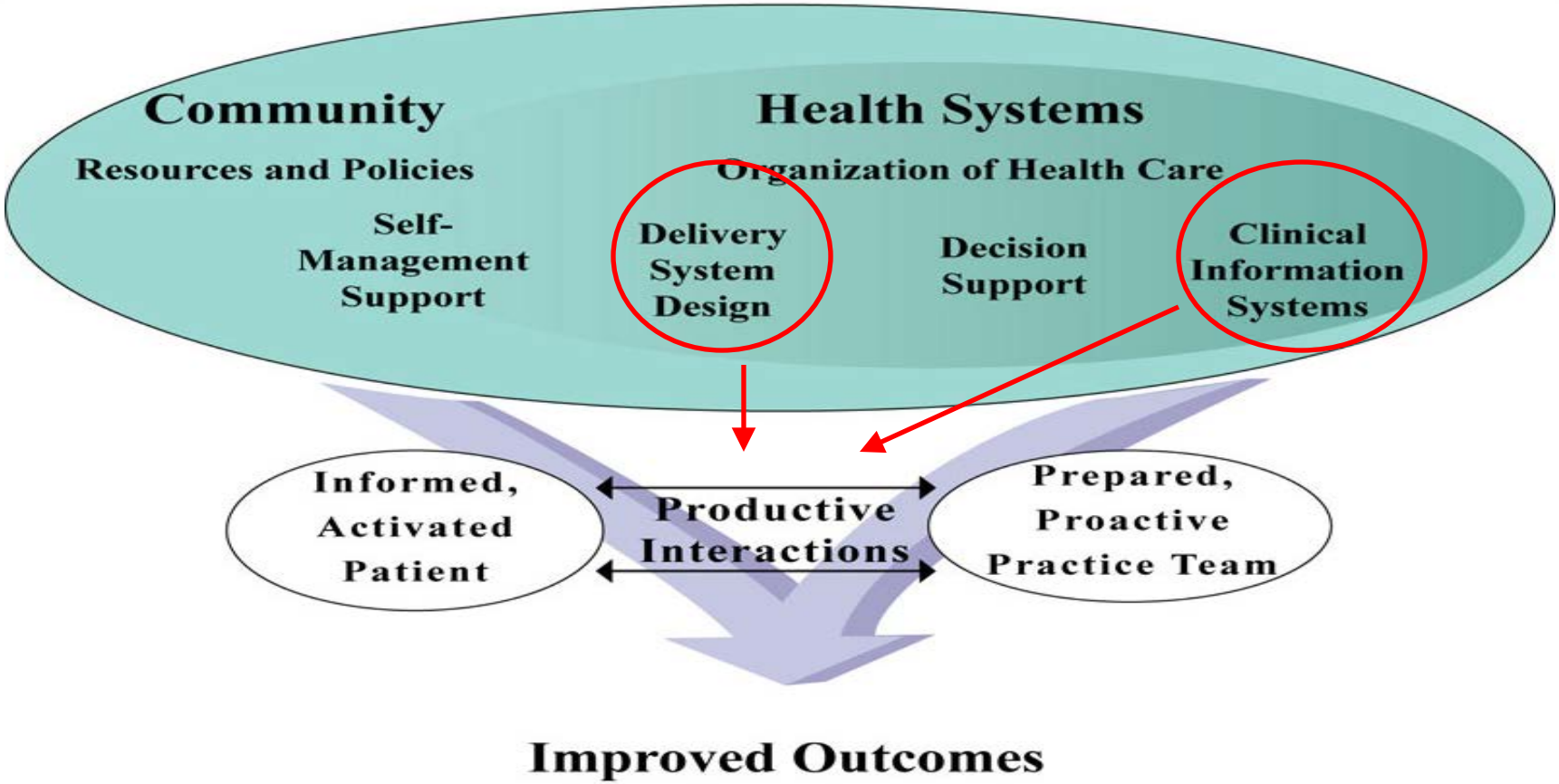
The PITSTOP Project
Patient **I**nformation **T**ransfer **S**ystem to **O**utpatient **P**roviders



Project Objectives

- To achieve, especially at care transitions:
  - Improved quality of care
  - Improved patient safety
  - Efficient use of health care service

The Chronic Care Model



Developed by The MacColl Institute
® ACP-ASIM Journals and Books

Study Design

- 18-month prospective controlled intervention study
- 4-year project period
  - September 30, 2008 – September 29, 2012
- ~1,200 study participants
- Billings Clinic Hospital
- Regional rural primary care clinics

Study Design: Inclusion Criteria

- Medically complex patients:
  - Discharge Dx (>1): Diabetes mellitus, heart failure, cardiovascular accident, transient ischemic attack, chronic obstructive pulmonary disease, coronary artery disease, hypertension, depression
- 21 years +
- Discharged from Billings Clinic Hospital
- Live in a rural Montana community

Intervention

- Provider-to-provider communication: PCP discharge notification
  - Who, what, where, why
  - For more information….
  - Faxed, e-mailed
- Nursing: Housewide discharge process (Lean Six Sigma)
  - EHR tool
  - Discharge checklist
  - Standardized patient education/information
- Nurses: Patient callbacks
  - High-risk patients

Primary Care Provider Notification

Billings Clinic Hospital
PCP Discharge Notification

Date/Time 04/29/11 14:04:42

Dear Husby, Lucinda M MD

Thank you for the opportunity to care for CISTEST, PARKER J during their recent hospitalization at Billings Clinic. To support continuity of care, Billings Clinic is providing the following information regarding this patient's hospital stay. For further information, please go to www.billingsclinicdoc.org.

Name: CISTEST, PARKER J
FIN: 71841936
DOB: 08/12/1970

Scheduled Follow-up Appointments (if none listed, please schedule as appropriate):

Physician	Appointment Date/Time	Address	Phone
Cabell, Karen DO	07/18/2011 09:30:00 am	2813 9th Ave North,Billings,MT 59101	(406)238-2500

COMPLETE MEDICATION LIST:

Current Home Medications

Primary Care Provider Notification (continued)

DOB: 08/12/1970

Scheduled Follow-up Appointments (if none listed, please schedule as appropriate):

Physician	Appointment Date/Time	Address	Phone
Cabell, Karen DO	07/18/2011 09:30:00 am	2813 9th Ave North,Billings,MT 59101	(406)238-2500

COMPLETE MEDICATION LIST:

Current Home Medications

Percocet-5/325 (acetaminophen-oxycodone) 1 tab(s) By Mouth every 6 hours Prescribed by: Regan, Dennis W MD

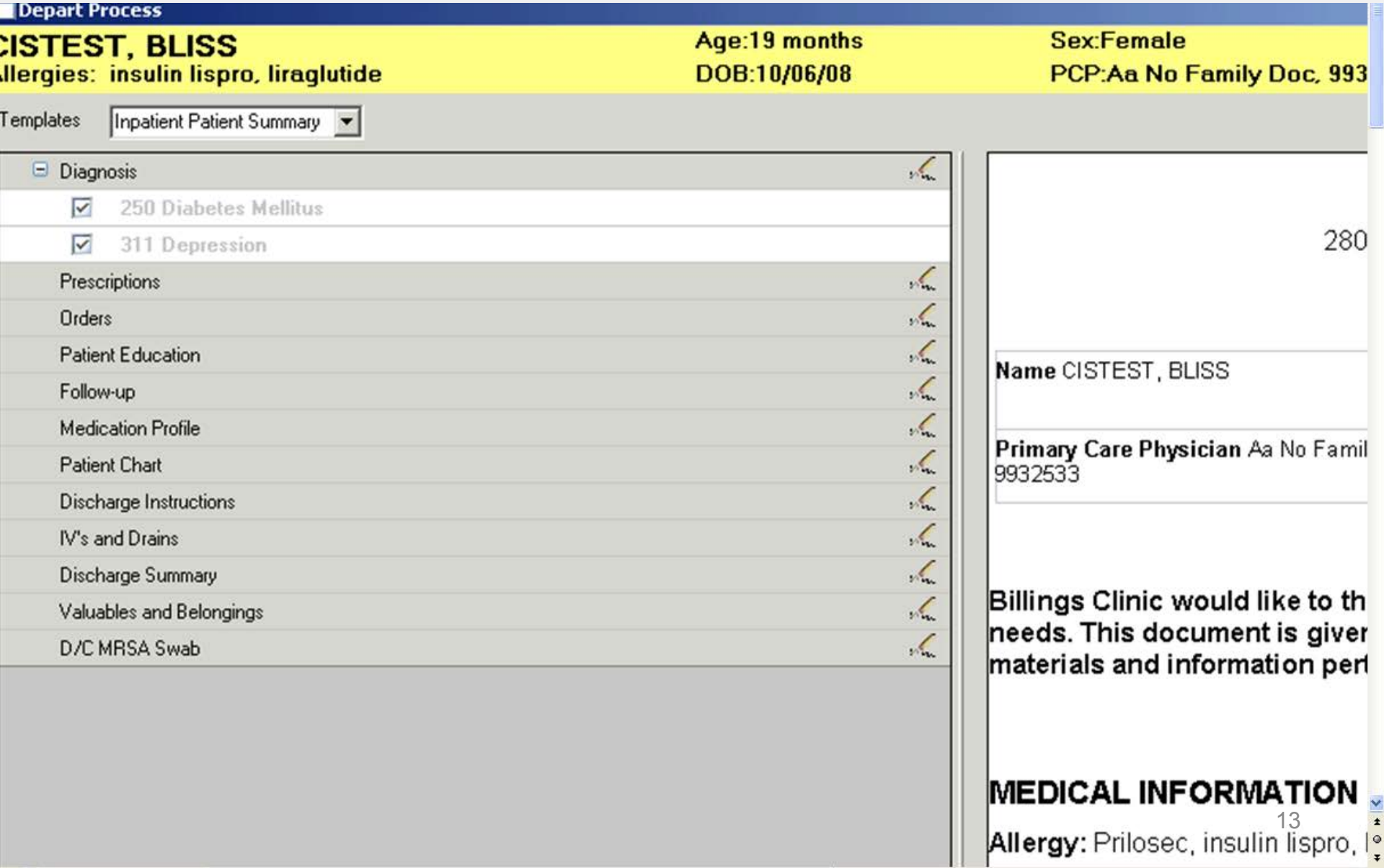
lisinopril 10 mg oral tablet (lisinopril) 1 tab(s) By Mouth Every Day Prescribed by: Cabell, Karen DO

Pending Medications (need clarification)

04/29/2011 Ambien 10 mg oral tablet (zolpidem) 1 tab(s) By Mouth At bedtime For: for sleep Prescribed by: Wiest, David L MD

Feel free to contact Billings Clinic at (406) 238-2500 with any questions or concerns.

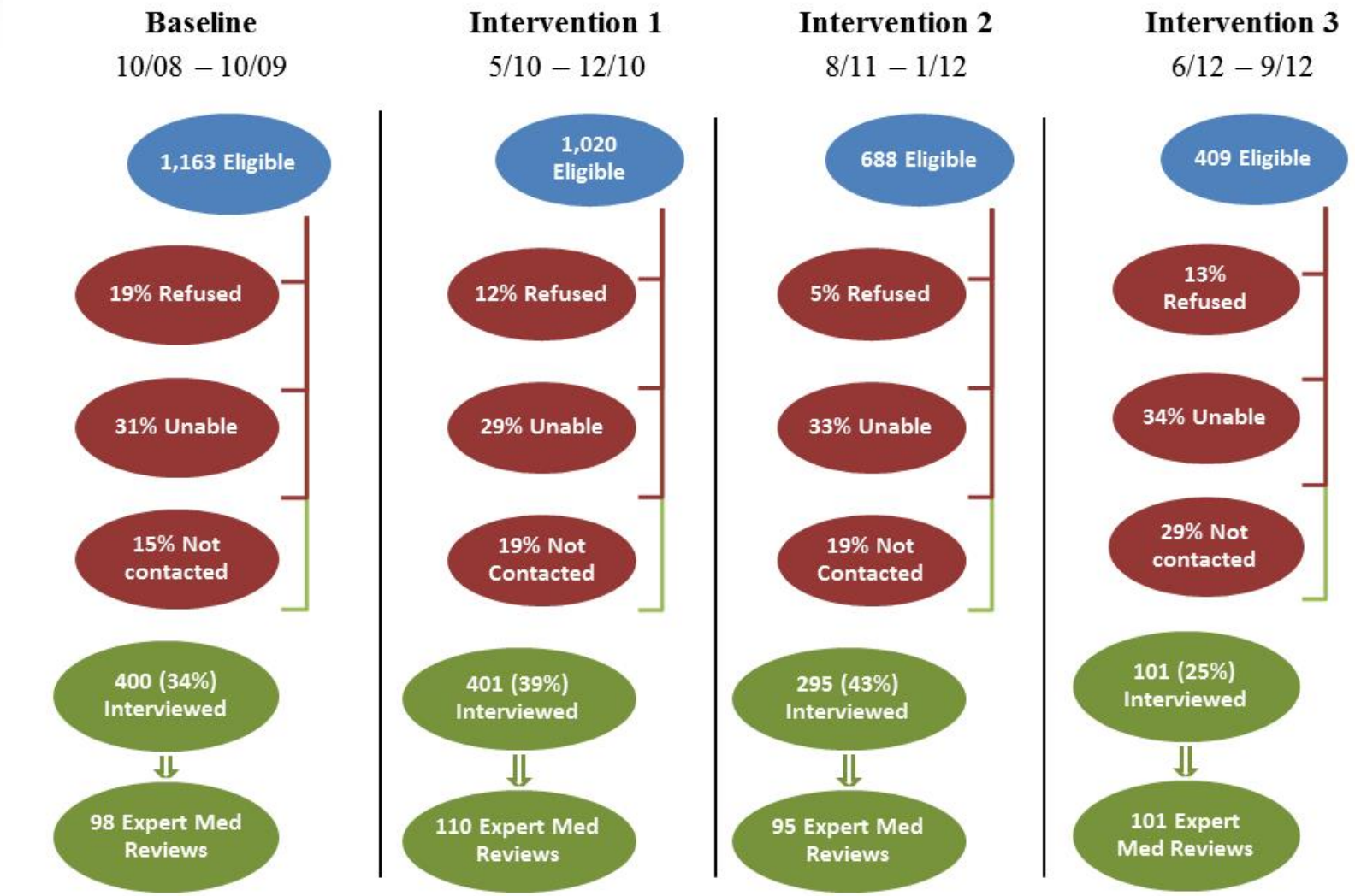
Electronic Health Record Linkage



Outcomes

- Clinical and HCU
  - Improve accuracy of reconciled patient-friendly medication lists
  - Improve patients' accuracy in taking medications
  - Decrease 30-day hospital readmissions
  - Decrease 30-day emergent care visits
- System
  - Increase post-discharge follow-up appointments within 30 days
  - Improve communication with PCPs
  - Improve workflow processes
- Satisfaction
  - IP and rural OP provider
  - Rural patient

Study Recruitment and Intervention Timeline

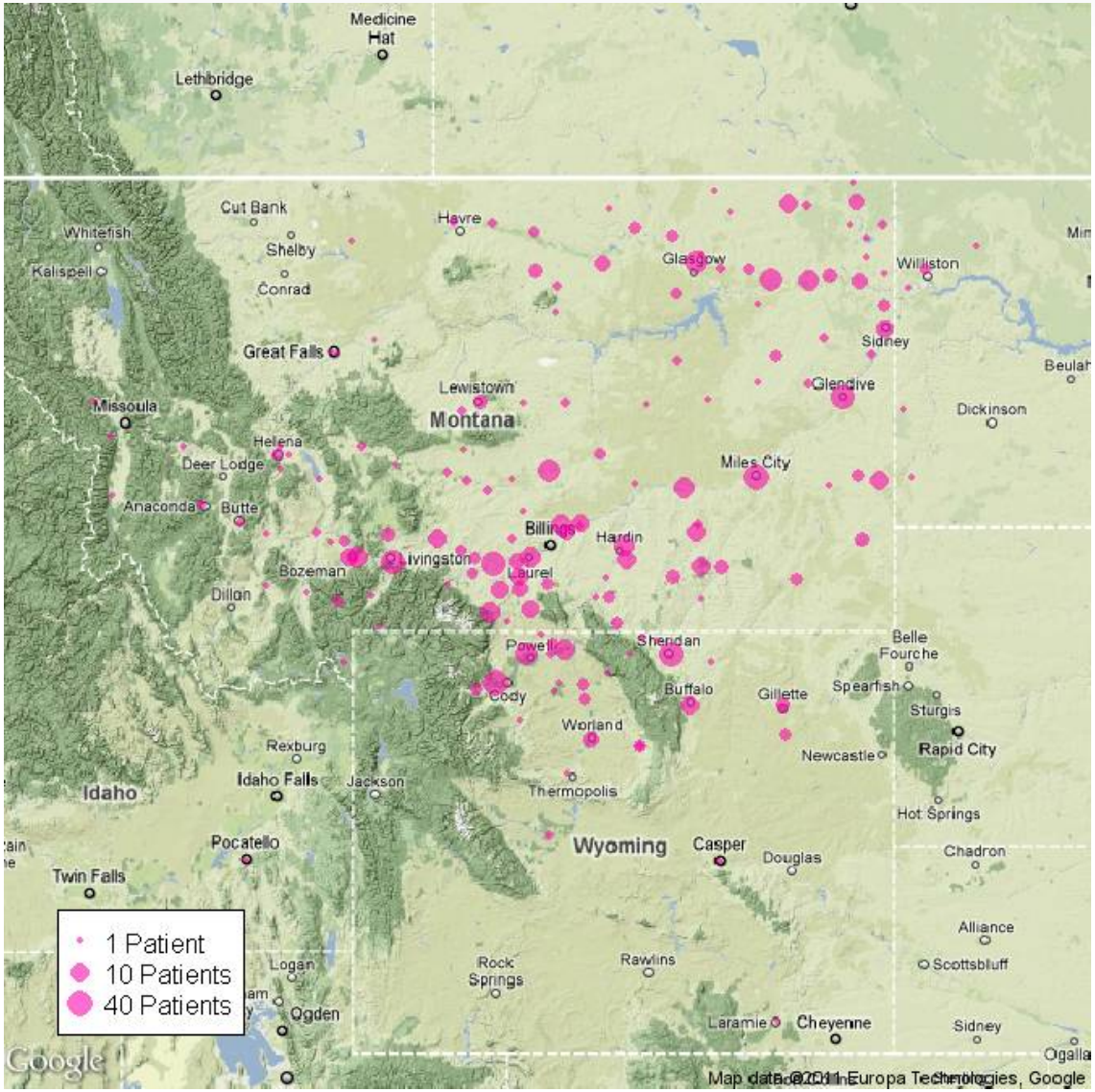


Results: Patient Characteristics by Study Group

	Baseline (N = 400)		Intervention (N = 401)		*p*-value*
	n	%	n	%	
Rural Clinics	109	NA	103	NA	NA
Females	173	43%	185	46%	0.51
Diagnoses					
Hypertension	256	64%	335	84%	<0.01
Diabetes	177	44%	182	45%	0.80
Depression	50	13%	74	18%	0.03
Heart Failure	75	19%	84	21%	0.49
	Mean	SD	Mean	SD	*p*-value**
Age	66.5	11	67.2	11	0.36
#Chronic Conditions	4.0	1.85	4.01	1.47	0.93
#Medications	7.8	3.7	9.8	5.4	0.01

* Calculated using a chi-squared goodness-of-fit statistic; ** Calculated using a two-sample *t* test.

Geographic Distribution of Study Population

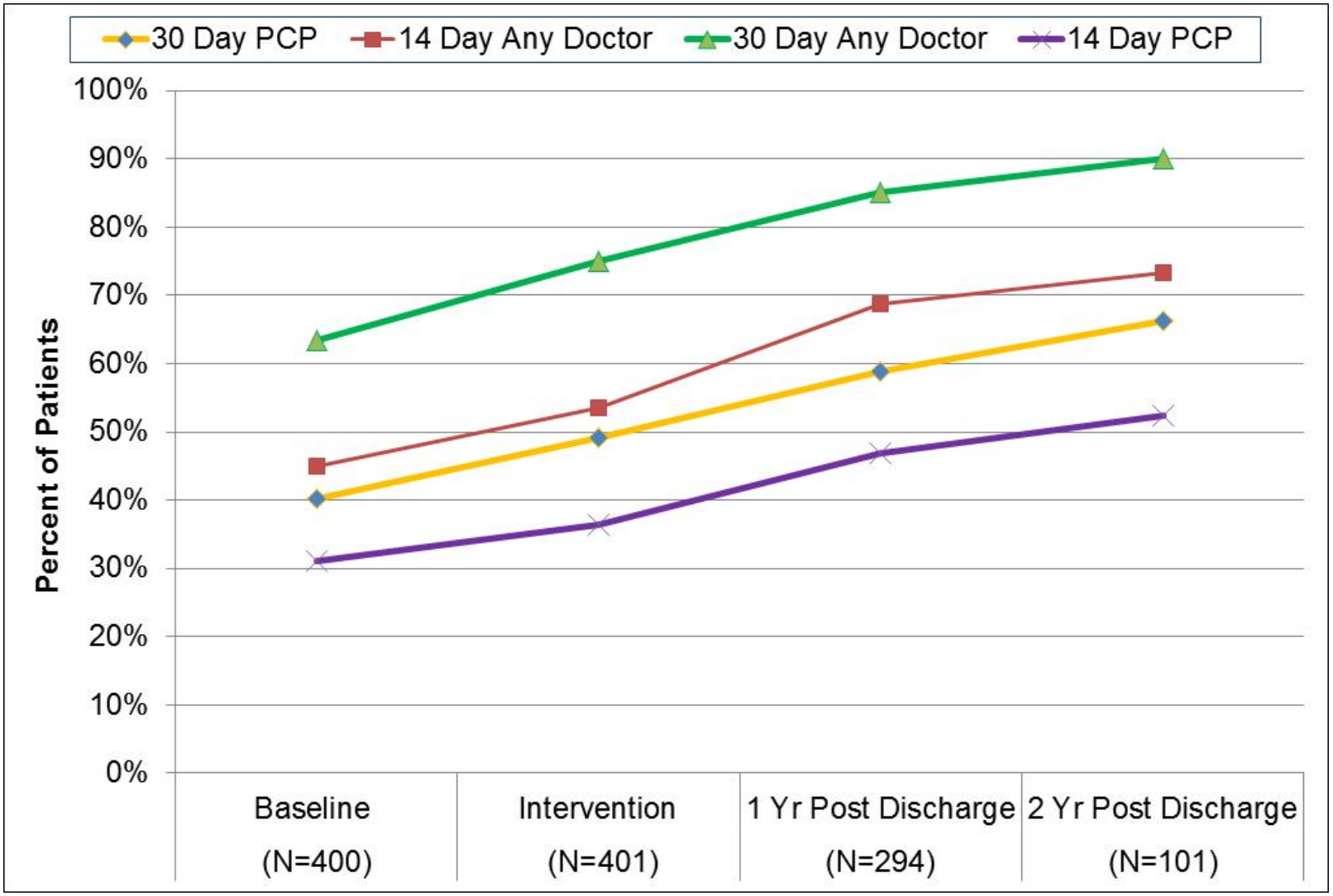


Results: Post-Hospital Discharge Follow-Up Visits

	Baseline (n = 400)		Intervention (n = 401)		*p*-value*
30-Day Primary Care Provider (PCP)	161	40%	197	49%	0.01
14-Day PCP	124	31%	146	36%	0.12
14-Day Any Health Care (HC) Provider	180	45%	215	54%	0.01
30-Day Any HC Provider	254	64%	301	75%	<0.01

* Calculated using a chi-squared goodness-of-fit statistic.

Results: Post-Hospital Discharge Follow-Up Visits Over Time

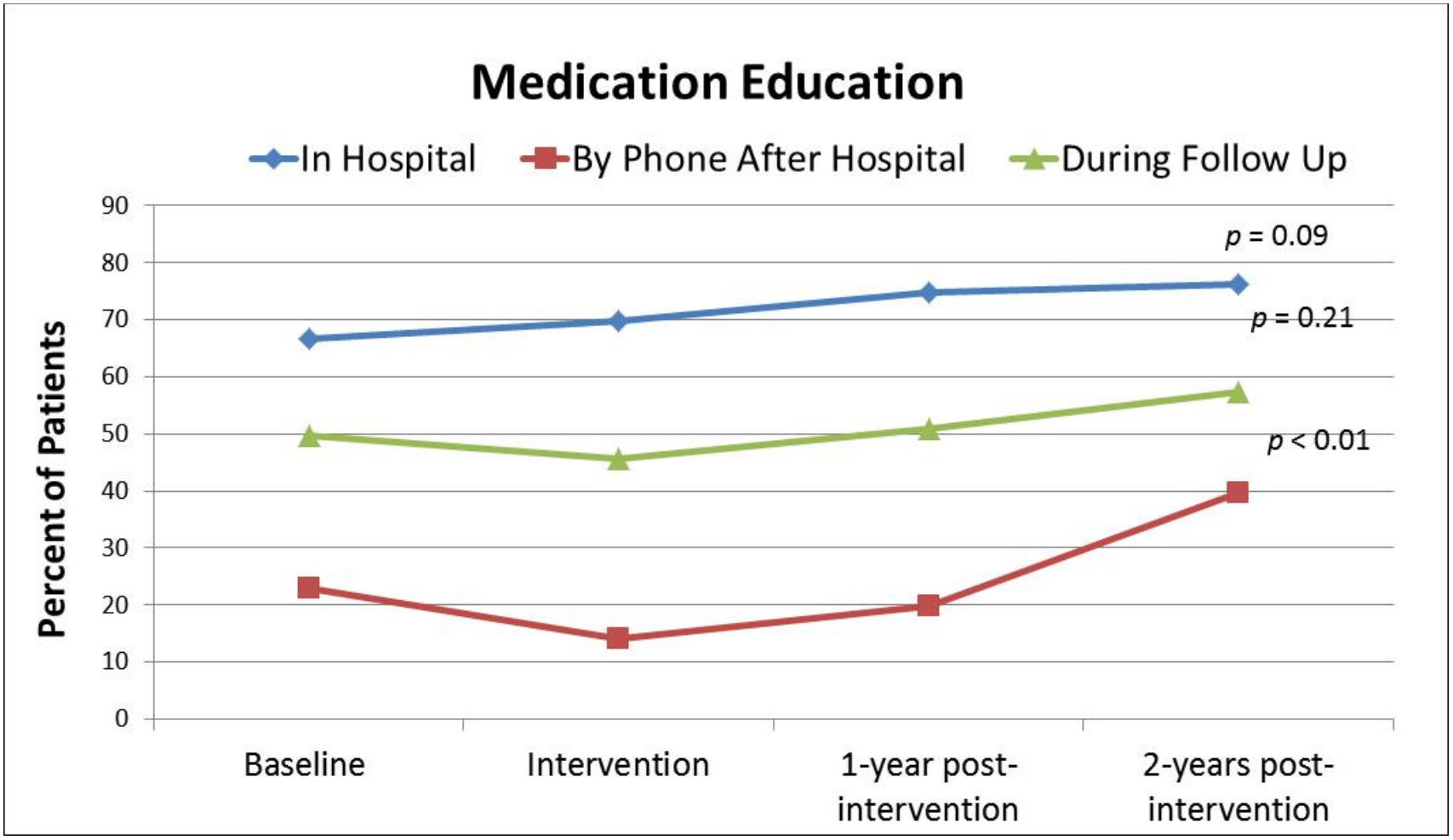


30-Day Readmissions by Post-Hospital Discharge Follow-Up Visits

	30-Day Medical Visit (n=545)		No Visit within 30 Days of Discharge (n=256)		Odds Ratio*	95% CI
30-Day Readmission	16	2.9%	18	7.0%	.40	0.20–0.80

*Calculated via logistic regression analysis including terms for study group and follow-up visit.

Patient Reported Medication Education by Study Time Period



Details of Medication Education

	Baseline (n = 400)		Intervention 1 (n = 401)		Intervention 2 (n = 295)		*p*-value*
	n	%	n	%	n	%	
Reason for Taking Medication	190	62%	239	74%	222	87%	<0.01
Possible Side Effects	172	56%	189	59%	181	71%	<0.01
Special Instructions	171	56%	217	68%	185	73%	<0.01

Provider Satisfaction with Discharge Process

Provider Satisfaction with Discharge Process: Response Always or Usually (n = 150)			
	Baseline	**Intervention**	***p*-value**
The care transition process for patients discharged from the hospital to the rural outpatient setting is efficient and reliable and results in quality patient care.	38%	63%	0.015
Outpatient providers receive sufficient or information from the hospital regarding their patients after discharge.	29%	47%	0.064
Outpatient providers receive timely information from the hospital regarding their patients after discharge.	30%	49%	0.061
I believe my patients are getting adequate information regarding their medications, including a patient-friendly reconciled medication list, at time of hospital discharge.	60%	80%	0.040
Outpatient providers usually receive a reconciled patient medication list for their patients discharged from the hospital before patients attend a follow-up visit.	31%	59%	0.004

Patient Self-Report by Intervention

Patient Self-Report	Baseline n = 172	Intervention 1 n = 154	Intervention 2 n = 102	Intervention 3 n = 54	Δ
Before I left the hospital, the staff and I agreed about clear health goals for me and how these would be reached. When I left the hospital…	92.8%	90.3%	91.2%	94.3%	+
I had all the information I needed to be able to take care of myself.	92.9%	92.2%	92.1%	90.5%	-
I clearly understood how to manage my health.	88.0%	90.1%	89.1%	90.6%	+
I clearly understood the warning signs and symptoms I should watch for to monitor my health condition.	87.0%	87.4%	92.0%	88.6%	+
I clearly understood the purpose for taking each of my medications.	92.8%	89.9%	88.2%	96.1%	+
I clearly understood how to take each of my medications, including how much I should take and when.	94.1%	89.5%	92.1%	96.2%	+
I clearly understood the possible side effects of each of my medications.	75.9%	73.3%	79.2%	79.2%	+
I had a readable and easily understood written list of the appointments or tests I needed to complete within the next several weeks.	93.4%	86.6%	90.9%	94.3%	+
I had a readable and easily understood written plan that described how all of my health care needs were going to be met.	80.2%	78.6%	83.7%	84.9%	+
I had a good understanding of my health condition and what makes it better or worse.	88.7%	86.4%	87.0%	86.8%	-
I had a good understanding of the things I was responsible for in managing my health.	89.9%	91.9%	90.1%	94.4%	+
I was confident that I knew what to do to manage my health.	87.5%	88.7%	87.3%	90.6%	+

Conclusions and Implications

- Health information technology intervention focused on discharge standardization and improved provider communication improves follow-up for medically complex patients, leading to reduced readmissions
- Clinical and financial implications given CMS reimbursement adjustments for avoidable readmissions
- Model for patient-centered medical homes, accountable care organizations
- Low-risk interventions; encourage dissemination

Value to the Customer

Customer: Regional PCPs

- Value: Receive information regarding patients discharged from hospital
  - Example: PCPs of patients discharged by hospitalists receive a faxed/e-mailed clinical note on their patients.

Customer: Patients from rural Montana communities

- Value: Improved discharge process
  - Example: Receive standardized patient information; high-risk patients receive follow-up phone call.

Contact Information

For further information please contact:

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Nurse Use of an Electronic Clinical Decision Support Tool to Improve Medication Management for Complex Patients in Home Health Care

Penny H. Feldman, Ph.D.

February 20, 2014

Background

- Managing medications during the transition to home health care is challenging and resource intensive.
- Patients have:
  - Multiple comorbid conditions
  - High number of medications, prescribed by multiple MDs
  - Complex medication regimens
  - Medication adherence issues
  - Medication side effects
- Medication complexity has been identified as an independent contributor to unplanned hospitalizations and ED visits.

The IMPACT Study

- Cluster randomized study to examine the relative effectiveness of a clinical decision support (CDS) intervention to improve the management and outcomes of patients with complex medication regimens who were just admitted to home health care
- Aims – to assess:
  1. Nurses' use of the CDS
  2. Patient outcomes

Study Design

Nurse-level randomization

- Control group: Usual home care
  - No contact by study group
- Intervention group
  - Nurses received the following for all patients who had high medication complexity:
    - Clinical alert
    - Access to an electronic decision support tool that was integrated into the electronic health record
    - Patient educational material
- Nurses kept their randomized assignment throughout.
- Patient group assignment was based on the nurse who was designated as their coordinator of care.

Clinical E-mail Alert

Subject line: New Complex Medication Management Problem
From: Medication Management Improvement Group

This e-mail is part of a VNSNY initiative to provide you and your patient with additional support for complex care management.

Your patient, ***Jane Doe (case #: xxxxxx)***, has a **complex medication regimen**. In addition to many medications, complexity may come from:

- High number of doses per day
- High number of routes for medication administration
  AND/OR
- Special instructions the patient needs to remember (e.g., take with meals, cut in half, take every other day)

A new Complex Medication Management Problem module is now available on your tablet to help guide assessment and interventions in this area. Please review this module for support on strategies to improve your patient's adherence and self-management practices, while potentially lowering their risk for adverse events. Educational material to share with your patient is also being sent to you via interoffice mail. Thank you for your participation in this important initiative.

New Complex Medication Management Care Problem (CDS Tool)

- Only triggered if patient on caseload has high medication complexity
- Was accessible between the second and third visits
- Structured like all other care management problems already existing in the electronic health record

Methods

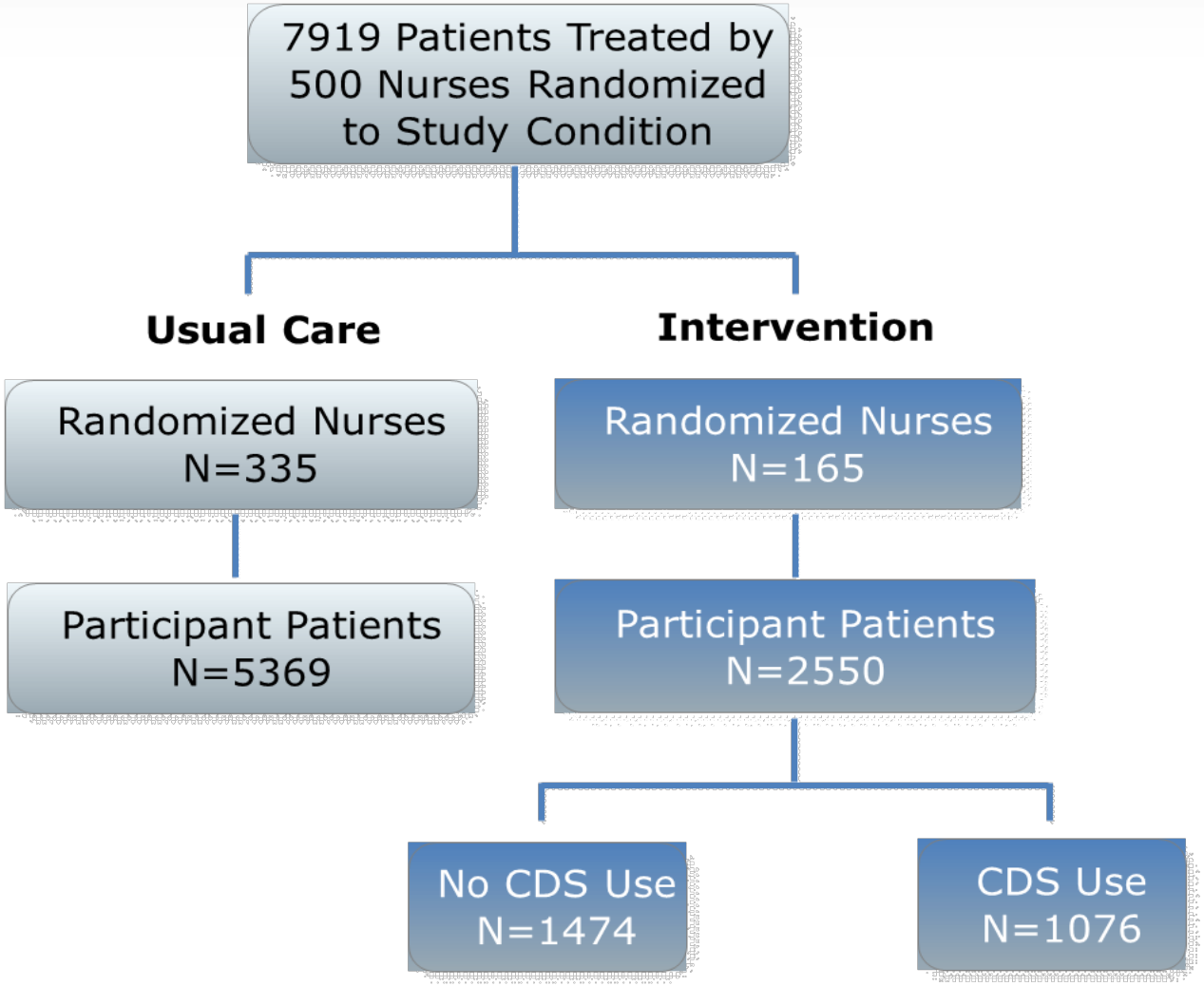
- Patient eligibility: Newly entered home care with a Medication Regimen Complexity Index (MRCI*) score that was considered high risk (≥24.5) based on:
  - Dosing frequency
  - Routes of administration
  - Special instructions
- Data sources:
  - Medication and assessment data collected as part of usual care
  - Documentation in the electronic health record

*George et al., *Ann Pharmacother* 2004; 38:1369-76 and McDonald et al., *JAMIA* 2013; 20:499-505.

Analysis

- Intent-to-treat analysis from cluster randomized trial
  - Comparison of patient outcomes between usual care and intervention groups
- Intervention group sub-analysis
  - Nurse and patient characteristics associated with CDS use
  - Association between CDS use and patient outcomes

IMPACT Study: Nurse/Patient Flow



INTENT-TO-TREAT ANALYSIS

Intent-to-Treat Analysis

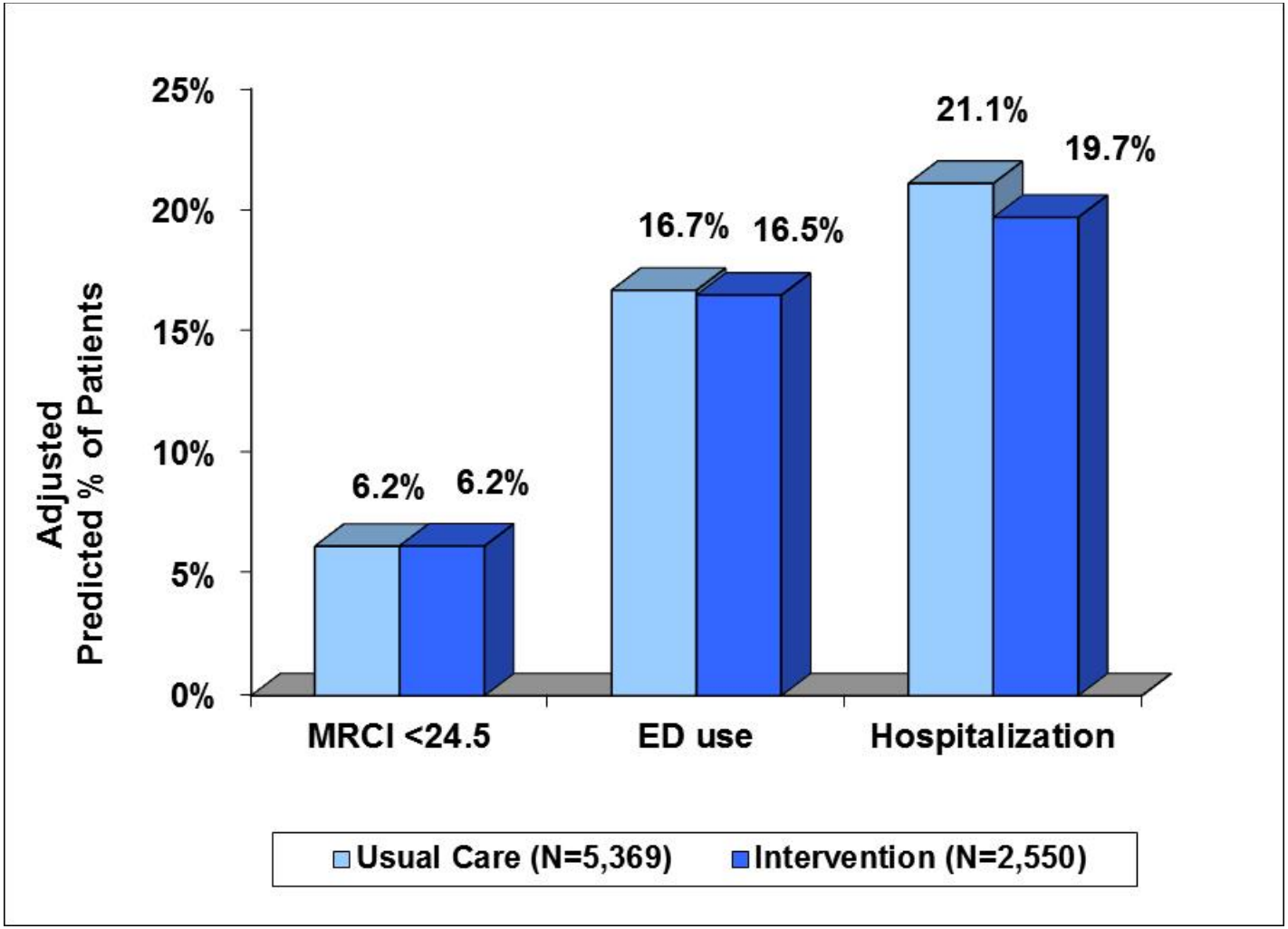
Outcome measures

- Reduction in medication complexity (MRCI <24.5)
- ED use
- Hospitalization

Models

- Logistic regression models predicting the three patient outcomes, adjusted by patient and nurse characteristics
  - Generalized Estimating Equations (GEE) to adjust for clustering at the nurse level
  - Adjustment for patient characteristics that differed significantly across study groups

Patient Outcomes by Study Group: Intent-to-Treat Analysis



CDS USE ANALYSIS

CDS Use Analysis

- CDS use was not randomized.
  - Certain nurses chose to use CDS while others did not.
  - Nurses chose to use CDS with certain patients but not with others.
- Propensity scores, defined as the conditional probability of CDS use given nurse and patient characteristics, were used to balance patient and nurse characteristics in the two groups and reduce potential bias through regression adjustment .
- Propensity scores were used as covariates in logistic regression models when estimating the effect of CDS use on outcome measures.

CDS Use in Intervention Group

- 82% of the 165 intervention nurses used CDS at least once.
- Nurses used CDS with 42% of the 2,550 patients in the intervention.

Nurse Characteristics and Likelihood of CDS Use

More likely

- Older age
- Higher number of years of employment
- Higher number of patients in the study

Less likely

- Working as a per diem nurse

Patient Characteristics and Likelihood of Nurses' CDS use

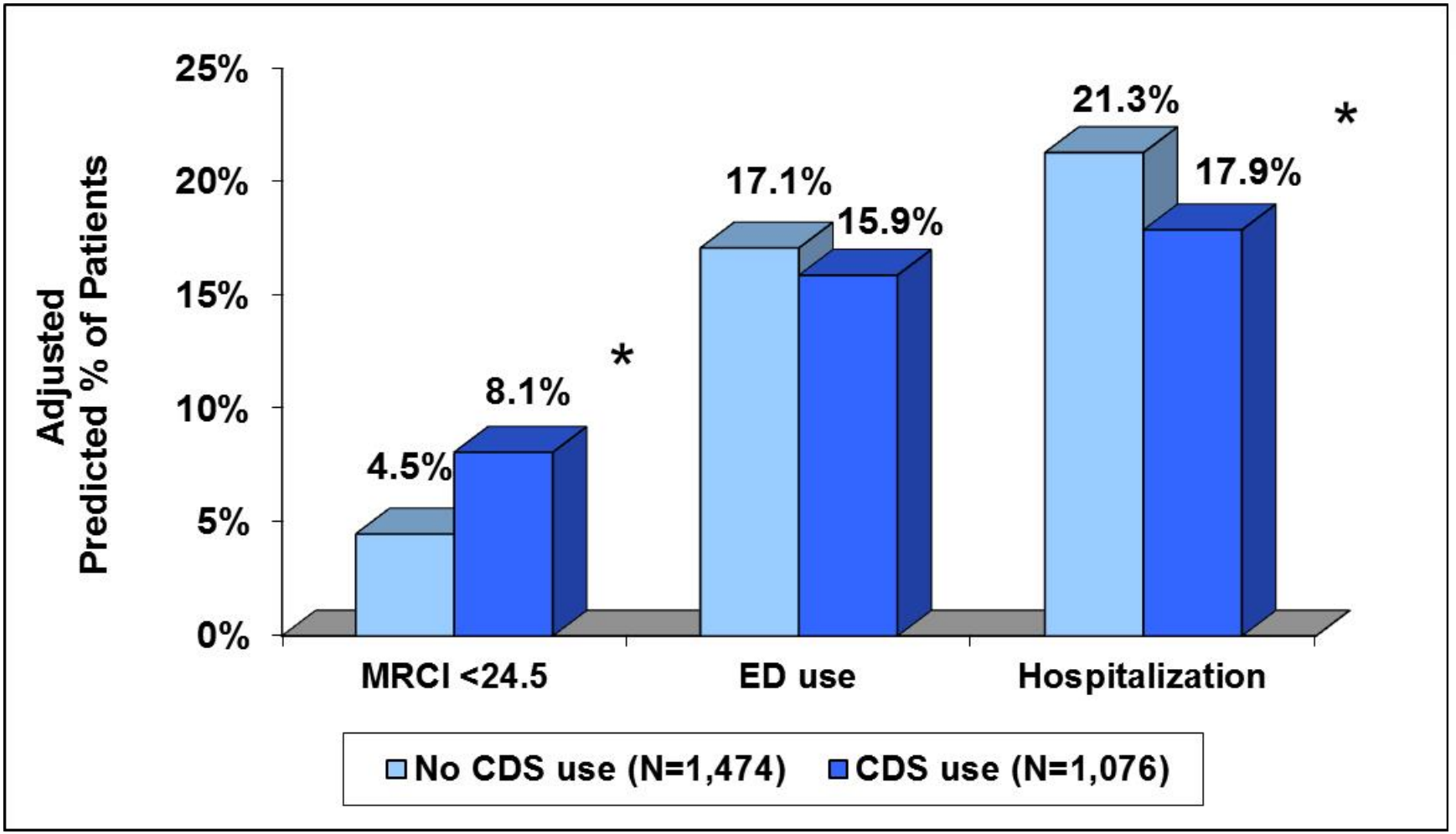
More likely

- Higher number of medications
- Discharge from inpatient rehabilitation hospital within 14 days of home care admission
- Hypertension Dx
- Cardiac condition Dx
- Stroke Dx
- Shortness of breath
- Longer length of stay in home care
- Higher number of RN visits

Less likely

- African-American race
- Medicaid beneficiary
- Private insurance
- Cancer Dx
- Higher number of chronic conditions
- Change in coordinator of care nurse

Patient Outcomes by CDS Use



* $p < 0.01$

Conclusions

- Intent-to-treat analysis found no intervention effect.
- CDS use, adjusted for propensity scores, was associated with lower hospitalization rates.
- Use was limited
  - Affected by both nurse and patient characteristics—some remediable and some not
  - Potentially remediable:
    - Use of per diem versus staff nurses
    - Changes in nurse coordinator of care
    - Patient length of stay

Implications for Policy, Delivery, and Practice

- Limited empirical research is available to understand factors affecting:
  - Nurses' CDS use
  - Impact of CDS use on patient outcomes
- Our findings suggest that CDS use and patient outcomes when transitioning to home care could potentially be improved by:
  - Improving continuity of care
  - Better managing very short lengths of stay
  - Increasing nurses' knowledge, comfort with, and motivation to use IT—especially per diem nurses

Lessons Learned

More nurse engagement pre-intervention development and during implementation to learn about:

- How nurses use CDS in general and patient factors that influence use—e.g., condition, symptoms, comorbidities
- How nurses view their role in medication management
  - Attitudes and beliefs about medication complexity
- Circumstances most likely to prompt outreach to prescribing provider(s) to facilitate a change
- How nurses' daily work routine and visit schedule influence CDS use

Purpose: better tailor training and CDS algorithms pre-implementation; better interpret study results and inform subsequent interventions/research

Acknowledgments

Research Team

- Penny H. Feldman, Ph.D.
- Margaret V. McDonald, M.S.W.
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- Timothy Peng, Ph.D.
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Grant R18 HS017837

Improving Medication Practices and Care Transitions Through Technology

P.H. Feldman, P.I.

Improving Care Transitions for Complex Patients Through Decision Support

Eric Eisenstein, D.B.A.

February 20, 2014

Project Team Members

- Duke University
  - David Lobach, M.D., Ph.D., M.S. (PI Years 1–3);
  - Eric Eisenstein, D.B.A. (PI Year 4)
  - Janese Willis, M.S., M.B.A. (Project Leader)
  - Kevin Anstrom, Ph.D. (Co-Investigator)
  - Guilherme Del Fiol (Co-Investigator)
- Agency for Healthcare Research and Quality
  - Rebecca Roper, M.S., M.P.H. (Federal Project Officer)
  - Grant Award Number: R18 HS017795

Goal and Objectives

- To determine whether CDS messaging can facilitate care transitions for patients with complex health care conditions.
  - Increase knowledge regarding CDS use in vulnerable chronic disease populations.
  - Assess CDS impact on coordination of care, health resource use, and medical costs.
  - Demonstrate a generalizable approach that can be replicated in other communities.

Study Setting Overview

- Setting
  - Northern Piedmont Community Care Network (NPCCN) provides care management services for 35,000 Medicaid beneficiaries in a six-county area.
- Care management services
  - Multidisciplinary team: nurse, social workers, community health workers, nutritionists, and health educators.
  - Services provided: Home assessments, in-home health education and dietary instruction, assistance and making and keeping appointments, support for obtaining and taking medications.

Study Population

- NPCCN beneficiaries
  - Patients with continuous enrollment during the intervention period (February 2011 through January 2012) with 6-month follow-up.
- Patient identification
  - Claims data using Healthcare Effectiveness Data and Information Set (HEDIS) criteria modified to exclude medications so as to avoid bias in selecting adherent subjects.
  - Chart audits to identify persistent asthma.

Study Population (continued)

- Complex patient inclusion criteria:
  - Two or more Institute of Medicine priority conditions (persistent asthma, diabetes, hypertension, congestive heart failure, ischemic heart disease and stroke) OR
  - Moderate to severe mental health diagnosis (schizophrenic disorder, nonorganic psychoses, anxiety, dissociative-somatoform disorder, and personality disorder) OR
  - Chronic renal disease OR
  - End-stage renal disease OR
  - Sickle cell disease

Information Intervention

- Regional health information exchange and data repository facilitate communication and collaboration.
- Patient information collected through:
  - Care manager documentation
  - Automated data transfers between network organizations.
  - Monthly North Carolina Medicaid data feeds: enrollment, billing and pharmacy data
- CDS component evaluates patient information using rules-based knowledge modules
  - Identifies instances of target patient care
  - Sends alerts

Study Design

- Randomization
  1. Planned 1:1:1 allocation by family unit
- Treatment groups
  1. Usual care
  2. Reports
     - Care Event Summary: to patient's medical home
     - Letter: to patient
     - Release of information request: to care transition location on behalf of patient's medical home
  3. Reports +
     - Reports group interventions
     - E-mail notification to patient's care manager
- Registration
  1. http://www.clinicaltrials.gov/ct2/results?term=NCT01039324&Search=Search

Intervention Customization

- During the study, North Carolina Medicaid implemented a program to reduce hospital admissions and expenditures
  - Allocation changed for straight Medicaid (1:1:2). Meant greater use of care managers for admissions.
  - Intervention changed for straight Medicaid to always send care manager alerts for Control and Report group hospital admissions and discharges.
- Sites already receiving patient care transition information requested interventions turned off.

Randomization Patterns

- Dual eligible
  - Approximately 400 patients per group
  - Enrollment by treatment
    - Control: 431
    - Reports: 426
    - Reports +: 419
- Straight Medicaid
  - Reports + have twice enrollment of other groups
  - Enrollment by treatment
    - Control: 1,850
    - Reports: 1,814
    - Reports +: 3,482

Baseline Characteristics

- Baseline characteristics similar for treatment groups.
- Approximate values
  - Gender: 60% female
  - Race: 65% black
  - Age: 45%+ <21 years, 45%+ 21–64 years, 5–10% >65 years
  - Conditions
    - Mental health diagnosis: 45%
    - Hypertension: 35%
    - Diabetes: 18%
    - All others: <10%

Information Interventions Generated and Distributed

- Reports documents
  - Requested (sent)
    - Controls: 4,500 (0)
    - Reports: 4,500 (all except missing address)
    - Reports +: 7,800 (all except missing address)
- Care manager notices
  - Requested (sent)
    - Controls: 3,700 (600)
    - Reports: 3,700 (600)
    - Reports +: 6,200 (all)

Care Manager Contacts

- Total contacts per patient
  - Control: 1.2
  - Reports: 1.1
  - Reports +: 1.3 (p<.01 vs. control)
- Significant differences
  - Hospital visits: Reports + less
  - Phone calls: Reports + more
- No difference
  - Home visits, practice encounters, professional encounters

Clinical and Economic Outcomes

- Encounters
  - No treatment-related differences overall
  - Rates (per patient)
    - ER visits: 1.1
    - Hospitalizations: 0.2
- Medical costs
  - No treatment-related cost differences
    - Outpatient, ER visits, and hospitalizations
  - Pharmaceuticals (per patient)
    - Reports +: $2,300, $300 greater, $p<.0001$
  - Total (per patient)
    - Reports +: $9,900, $400 greater, $p=.09$

Assessment

- Chart audits
  - Up to 10 charts audited in each of 4 visits to 35 study sites to determine whether intervention materials in patient charts and available during encounters.
  - Overall, materials in charts 60% of the time. However, there were wide variations by site. Suggests workflow integration issues.
- Provider assessments
  - Most evaluations favorable (4–5 on 5-point scale).
  - Evaluations correlated with chart audit results.
- Care coordination
  - Post-discharge care audits (n=600), 156 procedures recommended for 87 patients.
  - Two physicians found 32% necessary; 69% were completed.

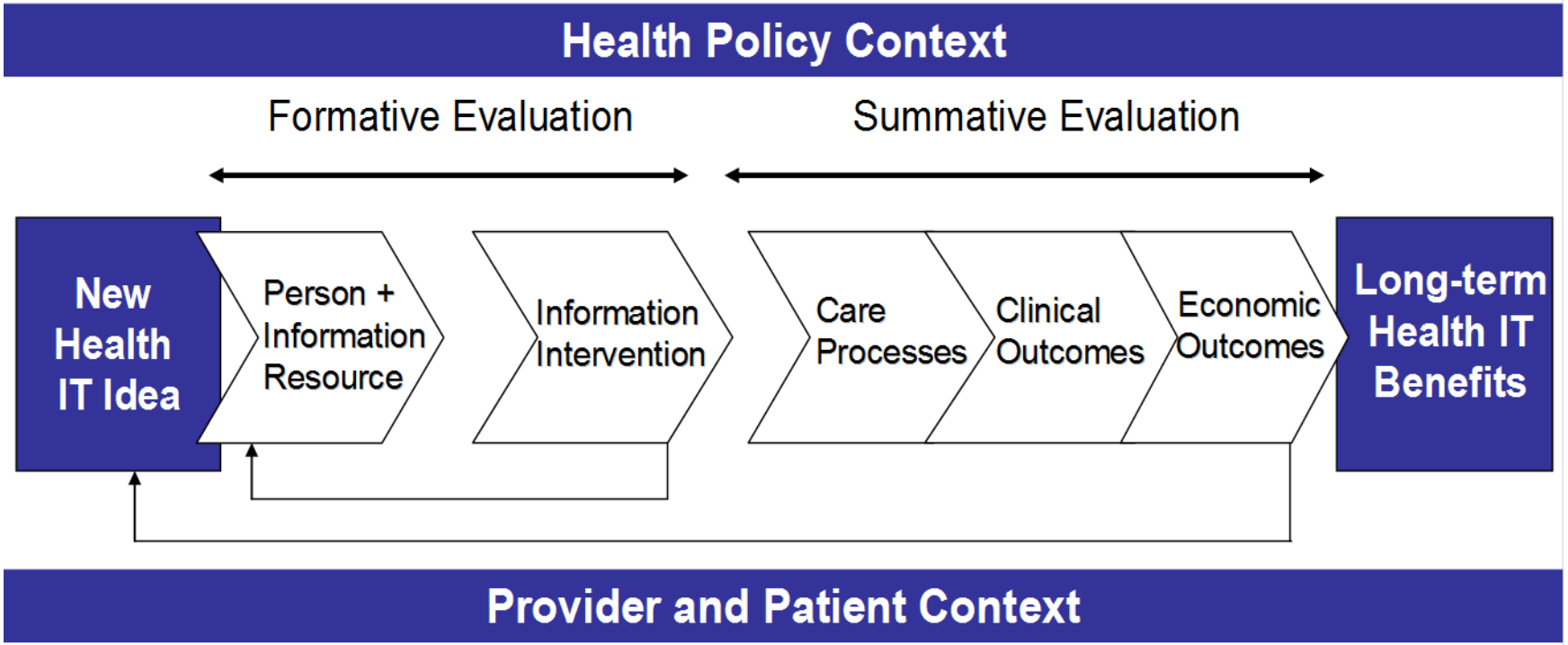
Discussion

- Conclusions
  - Demonstrated CDS facilitated care transition processes of care by use of targeted information interventions.
  - No treatment-related differences in major outcomes.
- Potential issues and rebuttals
  - Discharge summary information available only for 60% of PCP visits. However, there were few hints of a treatment effect.
  - Study design changes may have confounded treatment effects. However, absence of effect was observed for straight Medicaid and dual eligible patients.

After Thought

- Despite some implementation issues, the information interventions generally appeared to performed as expected.
- Perhaps caregivers did not have protocols/ tools that would allow them to use CDS-derived information to change patient behaviors and outcomes?

Biomedical Informatics Value Chain



Eisenstein EL, Juzwishin D, Kushniruk AW, Nahm M, 2011

Randomization Patterns for Study Patients

Study Arm	Insurance	Patients Enrolled
1	Dual eligible	431
	Straight Medicare	1,850
	Total	2,281
2	Dual eligible	426
	Straight Medicare	1,814
	Total	2,240
3	Dual eligible	419
	Straight Medicare	3,482
	Total	3,901

Patient Baseline Characteristics by Study Group

Group		Control (%)	Reports (%)	Reports + (%)
Gender	Female	58.9	62.6	60.6
Race (%)	Caucasian Black Other	19.8 65.8 14.4	23.0 65.5 11.5	22.9 64.1 13.0
Age (years)	0–2 2–12 13–20 21–40 41–64 >64	4.1 22.1 18.9 18.9 27.3 8.6	3.6 20.7 20.0 18.9 27.9 9.0	4.4 23.0 20.6 20.3 26.1 5.6
Condition (%)	Hypertension Coronary artery disease Congestive heart failure Stroke Asthma Diabetes Mental health diagnosis Renal disease Sickle cell disease	36.2 9.2 1.9 2.1 7.7 18.0 46.0 1.1 0.8	37.6 9.5 1.9 3.0 6.6 18.6 47.9 1.0 1.0	33.8 7.6 1.7 2.4 7.3 16.2 47.1 0.8 1.0

Information Interventions Generated and Sent

Group		Arm #1 (Control)	Arm #2 (Reports)		Arm #3 (Reports +)	
		#	#	P	#	P
CES Reports to Clinics	Generated	4,464	4,456	0.19	7,773	0.85
	Distributed	0	4,456	<.0001	7,773	<.0001
Letters to Patients	Generated	4,464	4,457	0.19	7,773	0.85
	Distributed	0	4,059	<.0001	7,197	<.0001
ROI Requests	Generated	4,464	4,456	0.19	7,773	0.85
	Distributed	0	4,456	<.0001	7,773	<.0001
CM Notices	Generated	3,747	3,708	0.29	6,174	0.12
	Distributed	591*	619*	0.65	6,174	<.0001

* Indicates protocol modification to accommodate mandate from State Medicaid.

Care Manager Contacts

Group	Arm #1 (Control)	Arm #2 (Reports)		Arm #3 (Reports +)	
	#	#	P	#	P
Total	1.19	1.07	0.53	1.27	**0.003**
Home visits	0.27	0.24	0.73	0.29	0.60
Hospital visits	0.07	0.06	0.20	0.05	**0.020**
Phone calls	0.81	0.73	0.94	0.88	**0.0005**
Practice encounters	0.02	0.01	0.72	0.01	0.12
Professional encounters	0.03	0.02	0.84	0.04	0.84

is average contacts per patient enrolled.

Clinical and Economic Outcomes

	Arm #1 (Control)	Arm #2 (Reports)		Arm #3 (Reports + Care Manager Notices)	
Encounter Rates (per patient)	**#**	**#**	**P**	**#**	**P**
Outpatient	58.90	55.62	0.75	57.42	0.45
Emergency Department	1.05	1.09	0.43	1.10	0.82
Hospitalization	0.22	0.22	0.62	0.22	0.53
Medical Costs (per patient)	**#**	**#**	**P**	**#**	**P**
Outpatient	5,745	5,487	0.34	5,914	0.54
Emergency Department	456	497	0.51	503	0.40
Hospitalization	1,270	1,120	0.66	1,110	0.68
Pharmaceuticals	1,999	1,994	0.72	2,326	**<.0001**
Total	9,469	9,099	0.19	9,852	0.09

Q & A

Please submit your questions by using the Q&A box to the right of the screen.

CME/CNE Credits

To obtain CME or CNE credits:

Participants will earn 1.5 contact credit hours for their participation if they attended the entire Web conference.

Participants must complete an online evaluation in order to obtain a CE certificate.

A link to the online evaluation system will be sent to participants who attend the Web Conference within 48 hours after the event.