Avoiding Readmissions Sustaining The Gains

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Agenda

- John Muir Health
- Why Avoid Unnecessary Readmissions
- Readmission Risk Assessment
  - Lace Score
- The Transitions of Care
- Lessons Learned
- Sustaining the Gains

John Muir Health

- 700+ beds
- 2 Acute Care Hospitals
- 1 Behavioral Health Hospital
- ~ 70 Case Managers (Inpatient and Outpatient)
- Foundation Model
  - IPA – 800+ MDs (primary care and specialists)
  - 165 member primary care group
  - Hospitalists

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Managed Care Patient Population

- 40,000 Commercial HMO
- 11,000 Medicare Advantage
- 9,000 Self-Insured Employees and Dependents
- 20,685 Medicare ACO

Background

- Unplanned hospital readmissions have become a key national health reform target
  - 20% of discharged Medicare patients are readmitted within 30 days
  - 14% of patients responsible for 66% of readmissions within 30 days of discharge
  - Under 65 age group also problematic
  - Medicare is penalizing short-term acute care hospitals if 30 days readmission rates are above the pre-determined CMS goal (national average)
    - CHF, COPD, AMI, Pneumonia, Total Joint Arthroplasty, Stroke

Background

- Penalty is a reduction in the CMS basket rate of 1% in the first year and 2% in the second year, etc.
  - For 2013: 71% of eligible hospitals penalized
  - Average penalty: 28%
- Avoidable readmissions are hard on patients and families
- Avoidable readmissions are Quality indicators
- All hospital systems face resource constraints
  - Resources need to be applied efficiently and effectively

Readmission Risk Identification

- Intense inpatient concurrent review
  - Identify expected GMLOS per DRG
  - Identify risk for readmission (**LACE Score**)
  - Notify Hospitalists and attending physicians of expected LOS and readmission risk
  - Place patient at appropriate level of care (inpatient vs. observation)

Lace Score

- **LACE** score for every patient on admission and discharge on the following parameters:
  - **L**ength of stay
  - **A**cuity of the admission
  - **C**o-morbidities (Charlson Co-morbidity Index)
  - **E**mergency Department visits in the previous 6 months

Lace Score

- **LACE** scores range from 1-19 and predict the rate of readmission or death within 30 days
- Calculated by the concurrent review RN/case manger
  - Entered into patient's chart with high visibility

From Canadian Medical Association Journal *April 6, 2010*182(6)

Derivation and validation of an index to predict early death or unplanned readmission after discharge from hospital to the community

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Previously published at www.cmaj.ca

See related commentary by Goldfield, page 538

Abstract

Background: Readmissions to hospital are common, costly and often preventable. An easy-to-use index to quantify the risk of readmission or death after discharge from hospital would help clinicians identify patients who might benefit from more intensive post-discharge care. We sought to derive and validate an index to predict the risk of death or unplanned readmission within 30 days after discharge from hospital to the community.

Methods: In a prospective cohort study, 48 patient-level and admission-level variables were collected for 4812 medical and surgical patients who were discharged to the community from 11 hospitals in Ontario. We used a split-sample design to derive and validate an index to predict the risk of death or nonelective readmission within 30 days after discharge. This index was externally validated using administrative data in a random selection of 1 000 000 Ontarians discharged from hospital between 2004 and 2008.

Results: Of the 4812 participating patients, 385 (8.0%) died or were readmitted on an unplanned basis within 30 days after discharge. Variables independently associated with this outcome (from which we derived the mnemonic "LACE") included length of stay ("L"); acuity of the admission ("A"); comorbidity of the patient (measured with the Charlson comorbidity index score) ("C"); and emergency department use (measured as the number of visits in the six months before admission) ("E"). Scores using the LACE index ranged from 0 (2.0% expected risk of death or urgent readmission within 30 days) to 19 (43.7% expected risk). The LACE index was discriminative (C statistic 0.684) and very accurate (Hosmer–Lemeshow goodness-of-fit statistic 14.1, $p = 0.59$) at predicting outcome risk.

Interpretation: The LACE index can be used to quantify risk of death or unplanned readmission within 30 days after discharge from hospital. This index can be used with both primary and administrative data. Further research is required to determine whether such quantification changes patient care or outcomes.

DOI:10.1503/cmaj.091117

Readmission to hospital and death are adverse patient outcomes that are serious, common and costly.[1,2] Several studies suggest that focused care after discharge can improve post-discharge outcomes.[3–7] Being able to accurately predict the risk of poor outcomes after hospital discharge would allow health care workers to focus post-discharge interventions on patients who are at highest risk of poor post-discharge outcomes. Further, policy-makers have expressed interest in either penalizing hospitals with relatively high rates of readmission or rewarding hospitals with relatively low expected rates.[8] To implement this approach, a validated method of standardizing readmission rates is needed.[9]

Two validated models for predicting risk of readmission after hospital discharge have been published.[10,11] However, these models are impractical to clinicians. Both require area-level information (e.g., neighbourhood socio-economic status and community-specific rates of admission) that is not readily available. Getting this information requires access to detailed tables, thereby making the model impractical. Second, both models are so complex that risk estimates cannot be attained from them without the aid of special software. Although these models have been used by health-system planners in the United Kingdom, we are unaware of any clinicians who use them when preparing patients for hospital discharge.

Our primary objective was to derive and validate a clinically useful index to quantify the risk of early death or unplanned readmission among patients discharged from hospital to the community.

Methods

Study design

We performed a secondary analysis of a multicentre prospective cohort study conducted between October 2002 and July

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CMAJ 2010. DOI:10.1503/cmaj.091117

LACE Index
for the quantification of risk of death or unplanned readmission within 30 days of discharge*

Attribute	Value	Points*
Length of Stay ("L)	<1	0
	1	1
	2	2
	3	3
	4-6	4
	7-13	5
	≥14	7
Acute (emergent) admission ("A")	Yes	3
Comorbidity (Charlson comorbidity index score) ("C")	0	0
Use the online calculator:	1	1
http://farmacologiaclinica.info/scales/Charlson_Comorbidity/	2	2
	3	3
	≥4	5
ED visits during previous 6 months ("E")	0	0
	1	1
	2	2
	3	3
	≥4	4

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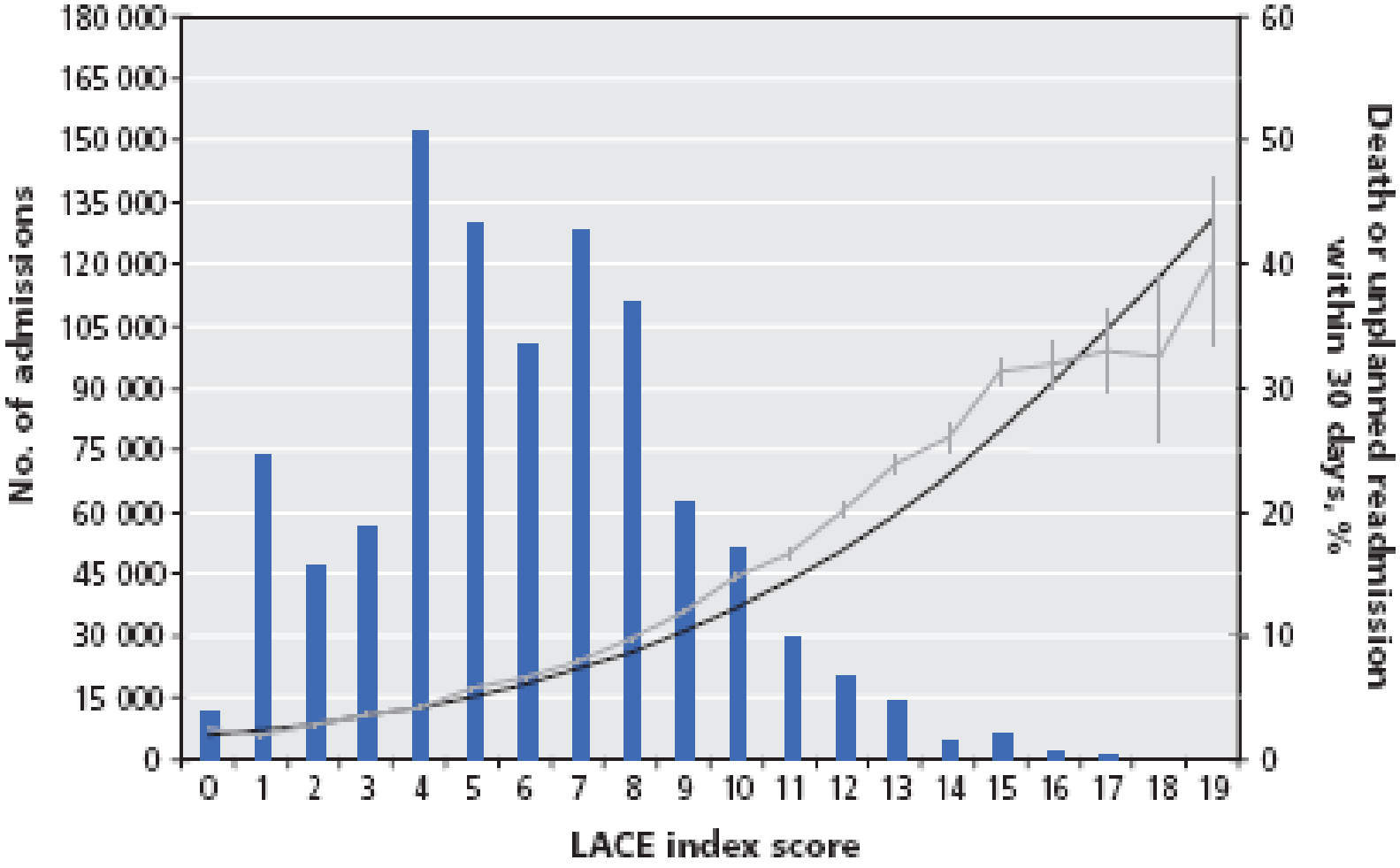


Figure 1: External validation of the LACE index, as represented by its accuracy for 1 000 000 randomly selected patients discharged from hospital in Ontario between 2004 and 2008. Note: bars = number of patients with the same LACE score; black line = expected risk of death or unplanned readmission within 30 days after discharge; grey line = observed risk (error bars = 95% confidence intervals).

Table 4: Expected and observed probability of death or unplanned readmission within 30 days after discharge, by LACE score

LACE score	Expected probability, %
0	2.0
1	2.5
2	3.0
3	3.5
4	4.3
5	5.1
6	6.1
7	7.3
8	8.7
9	10.3
10	12.2
11	14.4
12	17.0
13	19.8
14	23.0
15	26.6
16	30.4
17	34.6
18	39.1
19	43.7

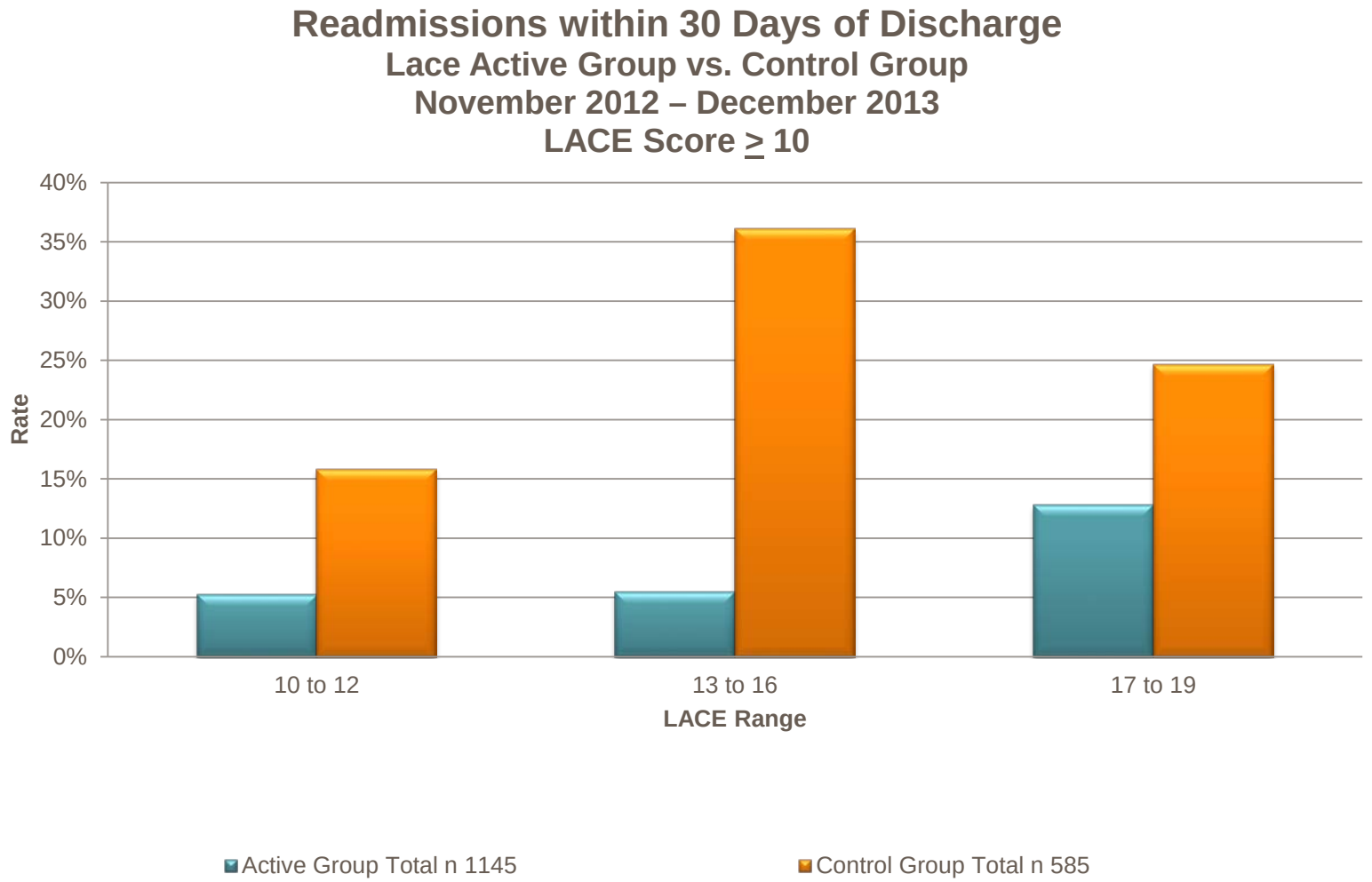
Lace Score

- A **LACE** score ≥ 10 at discharge identifies patients with high probability of readmission
- With an admission **LACE** score of >10, the inpatient case management team, with the attending physician, begins the discharge planning process early
- JMPN developed graduated protocols for post-discharge case management depending on the discharge **LACE** score

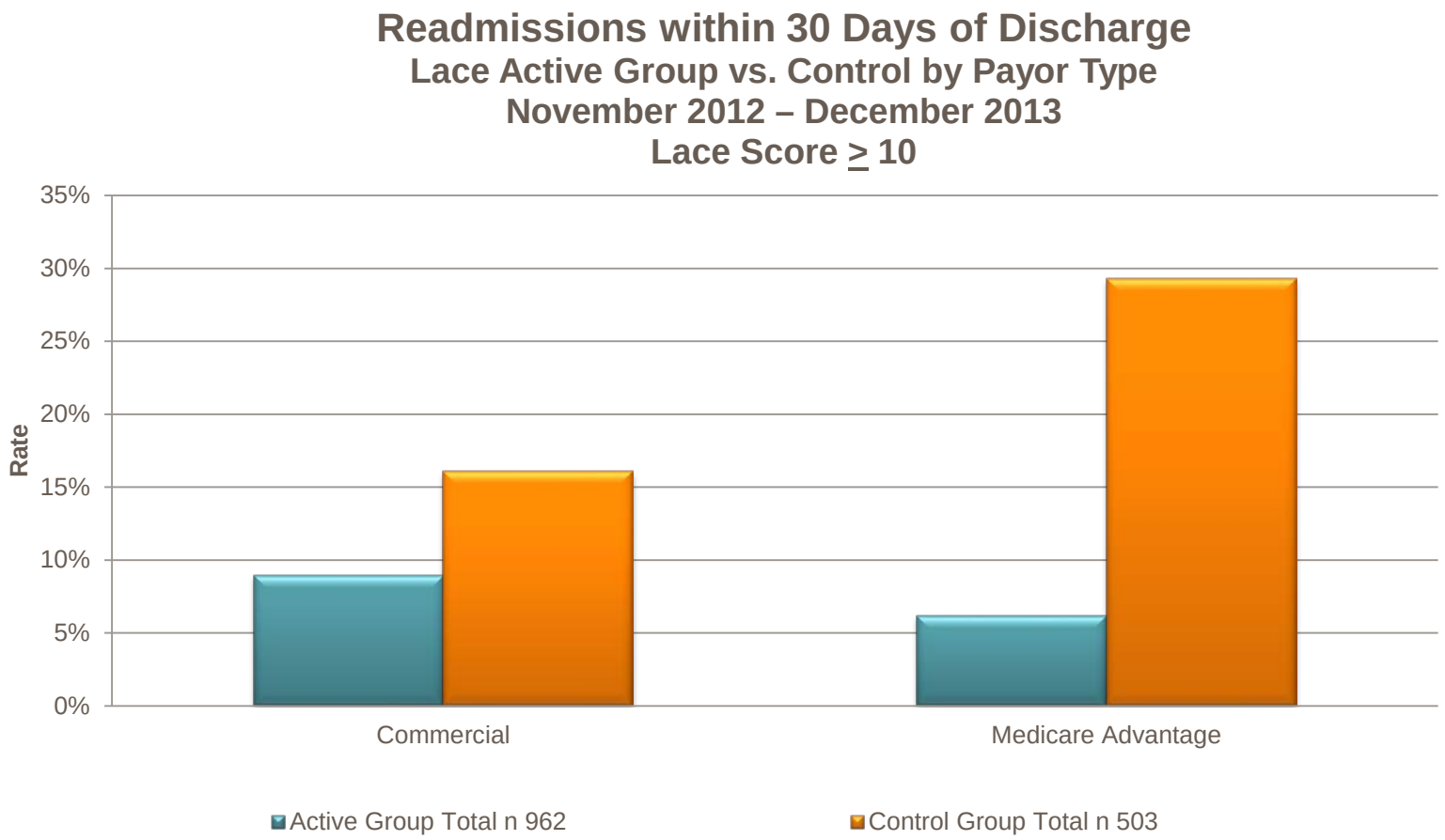
Lace Score

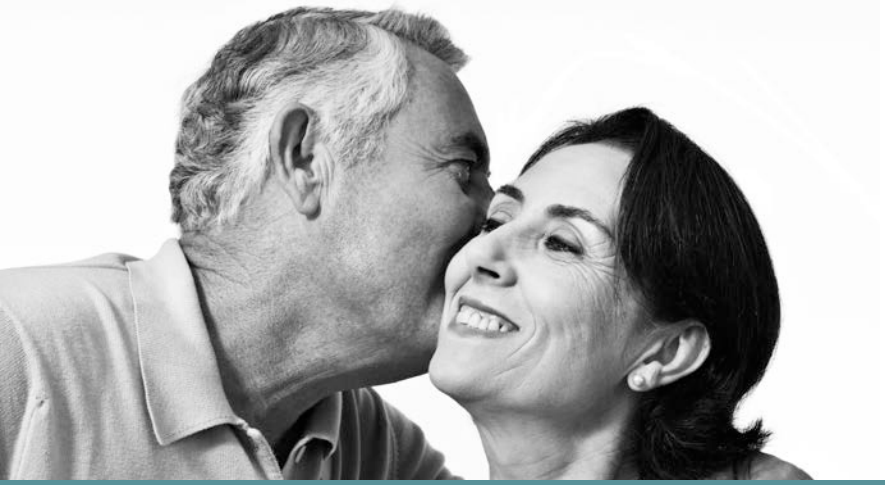
- Control Group (LACE Score ≥ 10)
  - Some patients, for various reasons, did not receive the interventions, and they served as an internal control group
    - Patient declined to participate
    - Program capacity exceeded

Lace Score



Lace Score





Transitions of Care

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Transitions of Care Programs

- Primary Strategies
  - Care Transitions Intervention (CTI)
  - Patient-Centered Medical Homes (PCMH)
- Post Acute Care Support Services
  - Home Health/CTI Coordination
  - SNF Collaboration
  - Heart Failure
  - COPD
  - Diabetes

CTI Program Components

- Eric Coleman Model
  - Transition Coach home visit post-discharge
  - 4 Pillars
    - Medication Reconciliation
    - Red flags education
    - Coaching for MD f/u visit
    - Create Personal Health Record
  - Reinforce with 2 f/u phone calls to patient
  - Discharge LACE score ≥10
  - Referral to MH Case Management
  - *Sustained readmit rates avg. 8.6%*

Medical Home Program Components

- Review of Identified Patients - *High readmission risk*
  - Generally 3% complex case management, 7% less complex still require regular contact
  - High Risk Patient Reports
    - Health Plans
    - Internal
  - PCP Identified Patients
  - Referrals
    - Various sources – hospital CM/DCP, physicians, Senior Services, Home Health, HF Center, etc.
    - LACE readmission risk score

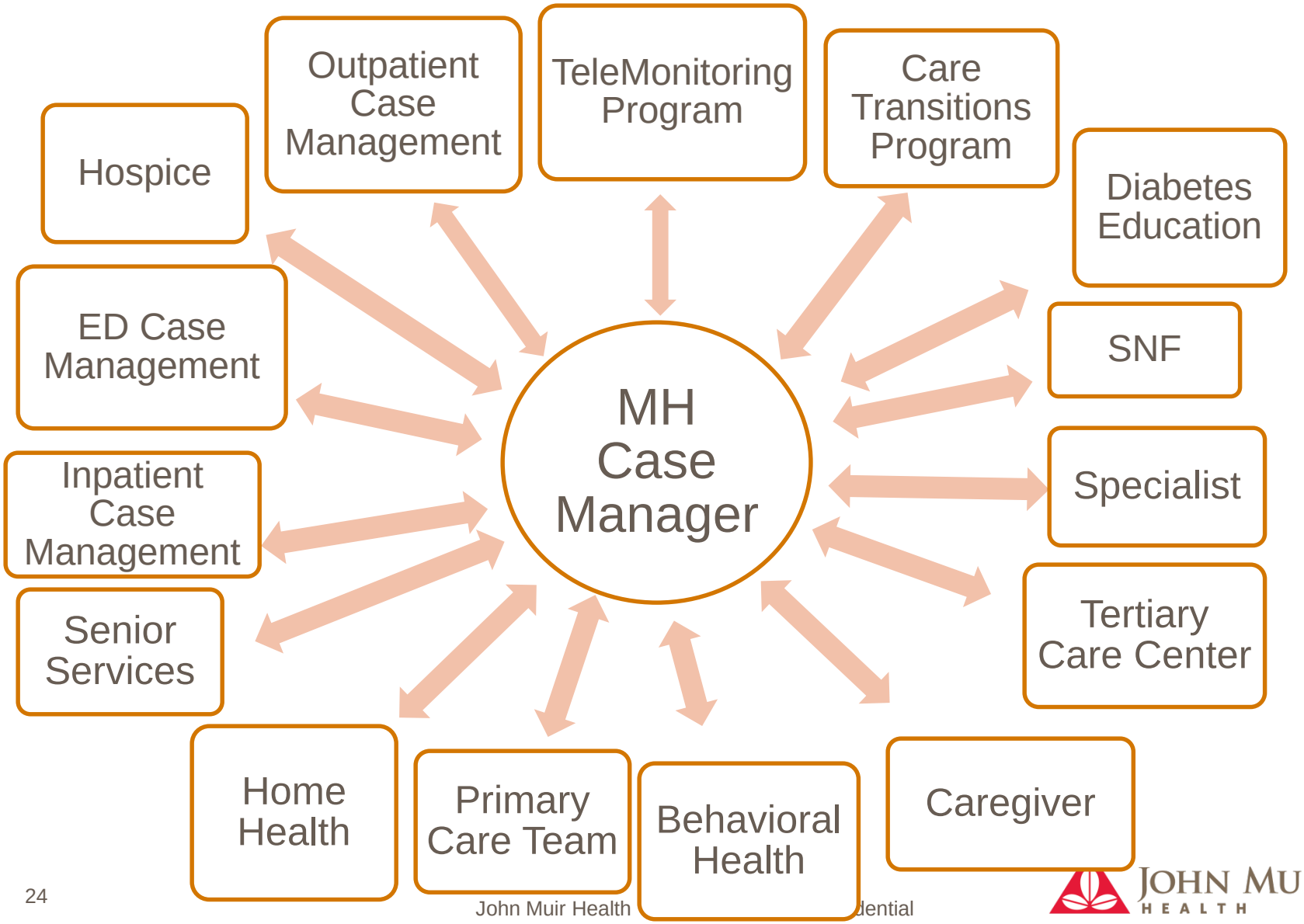
Care Management Process

- Patient Assessment
  - Face to face at home, PCP office
  - General and condition-specific
  - Goal identification
  - Medication Reconciliation
  - Risk assessment, etc.
  - Goal planning
- Caregiver Interview
- Care planning
  - Preliminary care guide
  - PCP care planning session
  - Patient friendly Action Plan
- Meeting with patient
  - Review of Action Plan
  - Ongoing contact schedule

Care Management Process

- Ongoing Case Management
  - Coaching and monitoring calls
  - Ad hoc contacts – patient, PCP
  - PCP monthly meetings and case discussion
  - Community resources
  - Supporting caregivers
  - Coordinating providers and support services
  - Transitional care
- Adjunct Care Management Programs – *ongoing care coordination*
  - Care Transitions Intervention
  - Tele-Monitoring, CHF/COPD
  - SNF Case Management
  - Inpatient Case Management/Risk Identification
  - Senior Services
    - LCSW
    - Patient Navigator
    - Prescription Medication Assistance

Care Coordination Interdisciplinary Team



Medical Home Settings

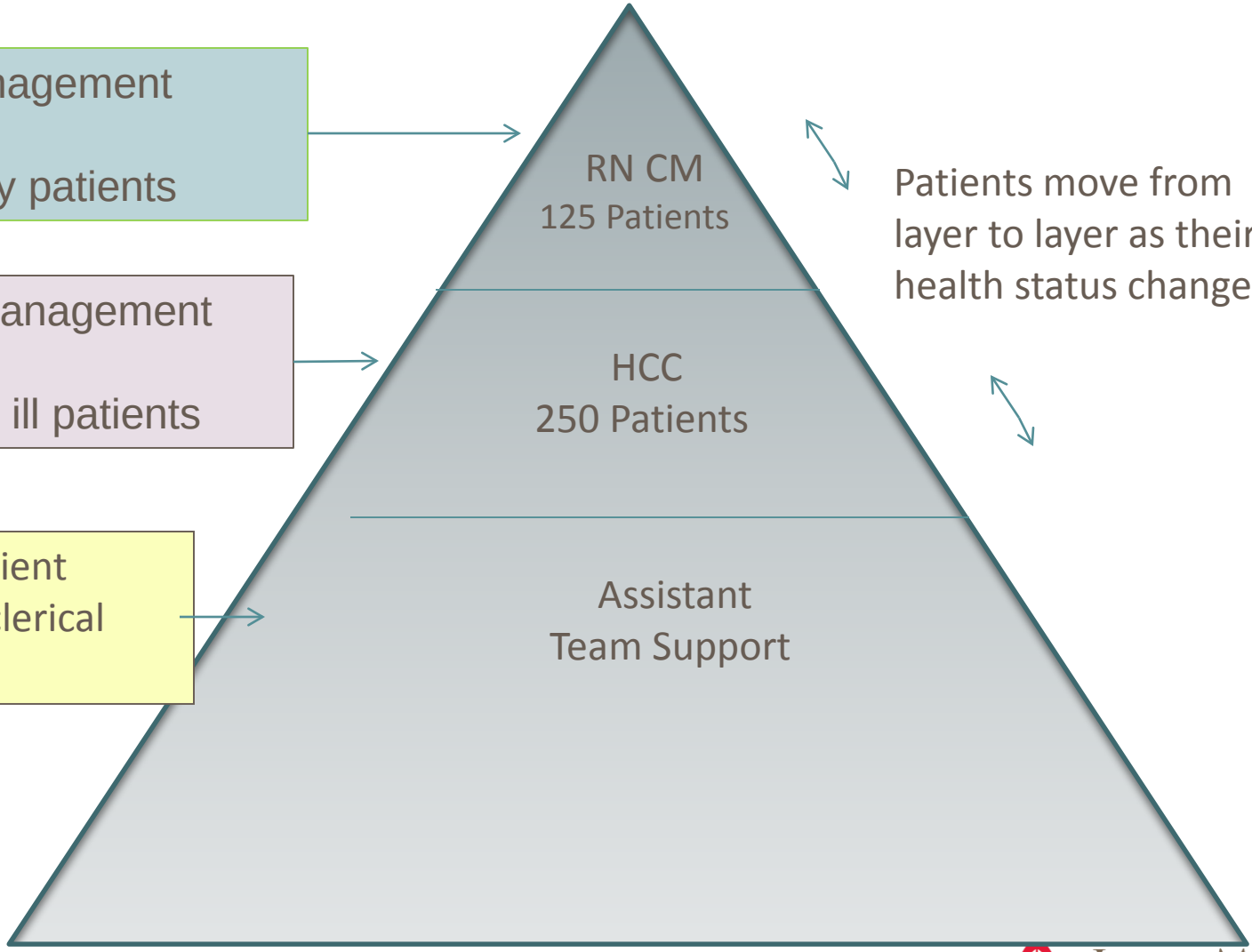
- Practice-Based Model
  - Four largest primary care practice sites
- Central Medical Home Model
  - Serving all other primary care practices
- Teams of Care Managers
  - RN Case Manager – *highest acuity*
  - Healthcare Coordinator – *lower acuity, DM*
  - Disease Management Assistant – *non-clinical support*

Medical Home Staffing Ratios & Acuity "Layers"

Case Management Layer
high acuity patients

Disease Management Layer
chronically ill patients

Routine patient follow-up, clerical support



Patients move from layer to layer as their health status changes

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Examples of Interventions

Post ED Visit Follow-up Call	Facilitate Medication Procurement, Coverage	Facilitate DME, Medical Supplies	Facilitate Interdisciplinary Case Conference
Facilitate Referral to Specialist	CM Office Visit with Patient	Pre-PCP Visit Planning/Agenda Setting	Medication Reconciliation
POLST/Advance Directive Discussion	Post-Discharge Phone Call	Relay Clinical Info./Test Results to PCP	Referral to Community Resources
Assist Patient Develop Personal Health Record	Primary Care Team Huddles	TeleMonitoring Clinical Variance Assessment	Transition planning with Inpatient, ED Case Managers

Care Management Team

- Team-based model of care
  - RN Case Manager, Healthcare Coordinator
- Qualifications
  - Experienced RN Case Managers, or recent graduates Masters in Nurse Case Management
  - LVN, MPH
- Focused training, certification
  - Johns Hopkins Nursing, Guided Care
  - CM certification
  - Chronic Care Professional

Outcomes

February, 2014	Control Group*	PCMH Group Total
	Inpatient Utilization	
Admit %	13.1%	3.8%
	ED Utilization	
ED Visit %	7.8%	5.3%

Consistently high patient and physician satisfaction

* Patients with similar conditions, demographics as sample group, not enrolled in Medical Home.

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Lessons Learned

- Avoiding unnecessary readmissions requires
  - Attending physician awareness of LACE score
  - Coordinated plan for discharge transition
  - Warm patient hand-offs and ambulatory case management (Care Planning – Interdisciplinary)
  - Timely follow-up by Primary Care Physicians post discharge
  - Coordination with skilled nursing facilities and Home Health Services
  - Patient acceptance of and compliance with post-discharge transition plans

Sustaining the Gains

- Adequate Resources
  - Case management staff
  - Administrative support
  - Case management software
  - Ambulatory specialty clinics
  - Big data

Sustaining the Gains

- Financial Risk Model
  - Shared risk or full risk model
  - Value based model
  - Board and Senior Executive commitment
  - Financial reward for coordinating care and managing population health
  - Health system wide approach

Sustaining the Gain

- Focus
  - Everyone in the health system aligned in synchrony with the CMS Triple Aim
    - Improving the Patient Experience
    - Enhancing the Health of the Population
    - Cost Efficient Care

Sustaining the Gains

- Shared Risk at John Muir Health
  - Blue Shield ACO
    - Three year agreement
    - First year very successful
  - Medicare MSSP ACO
    - Three year agreement
    - First year very successful
  - Health Net ACO (pending)
  - Anthem Blue Cross ACO (Pending)

Questions?

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