Institute for Healthcare Improvement

AIAMC Annual Meeting

The IHI/AIAMC Quality Scholars Program: Practical Application of Improvement Science

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April 1, 2016

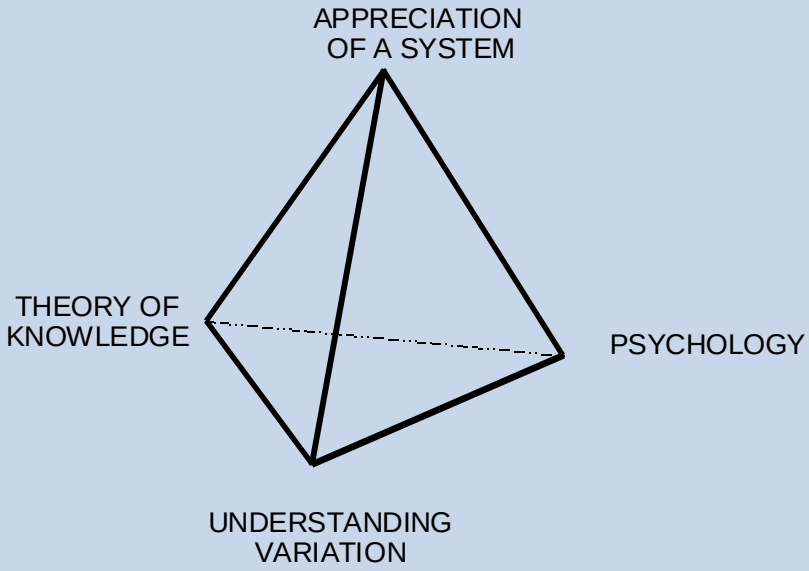
My Personal Take on the “Science of Improvement”

- Scientific regardless of name:
  - Science of improvement
  - Health care delivery science
  - Implementation science
  - Systems strengthening
  - Systems engineering
- Scientific methods include
  - “Model for improvement” promulgated by IHI
  - Lean
  - Six Sigma
  - Lean Six Sigma
    - DMAIC (Design, Measure, Analyze, Improve and Control)
    - Value stream maps

The Model for Improvement Simplified

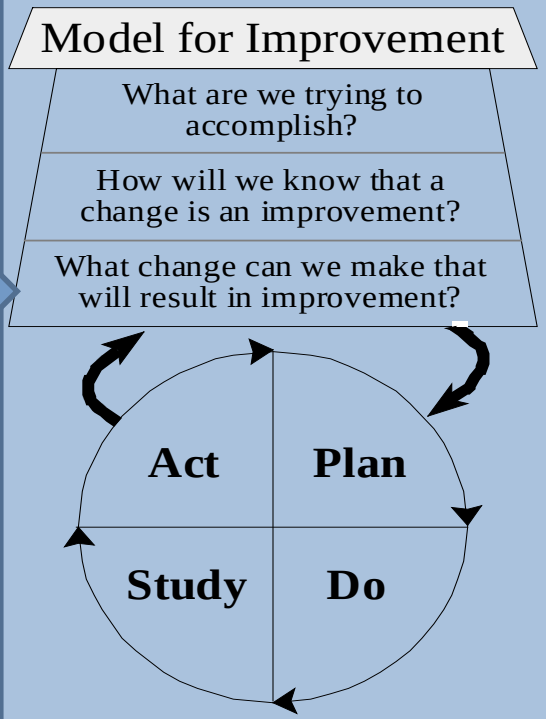
Deming 1900-1993

System of Profound Knowledge



Langley et al 1997

The Model for Improvement



In Summary

- Specify a clear, measurable aim and state when you hope to achieve it ("*how much by when*")
- Understand the *system* in which you are trying to reach your goal – precisely where it can fail, where there is inefficiency and waste, and where it needs to be improved and monitored
- Be clear about the expected (predicted) *impact* of the changes you are testing on the outcomes you want to achieve
- Be clear about your *implementation plan* and the expected outputs of your planned activities
- Learn continuously from *testing* (experimentation) to determine if the changes you predict will lead to improvement actually *do* lead to improvement
- Use data to *track improvement over time* to see if you actually are getting closer to achieving your aim
- Understand how to change *human behavior* (for example, through behavioral economics)

Why Research Scientists and Academics Should be Comfortable With These Methods

- My ten years working with a PhD scientist to develop a staph vaccine…
  - Mice, PDSAs, and laboratory culture
- Ebola vaccine development

Personal Journey

Personal Improvement Projects

- Sometimes the system needs major change, not tinkering
  - “Watching the tele…”
- PDSA tests made simple – how to grow cucumbers
- Aerobic exercise at the gym
  - 20 minutes on the elliptical and level 10 at least two times per week
  - “balancing measure” – completion of free weights and machine routine

https://youtu.be/MSHO0BiQX2M

Personal Improvement Projects

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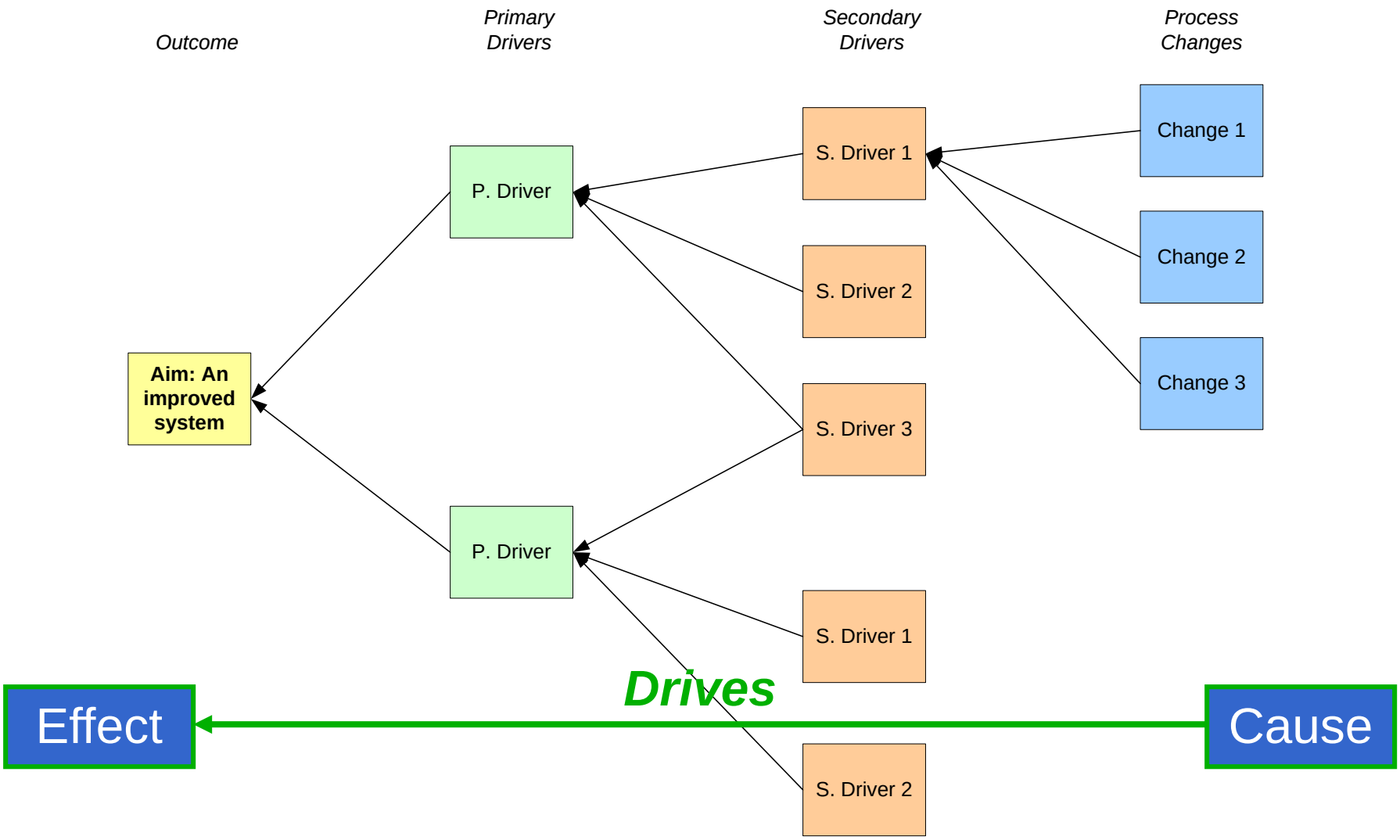
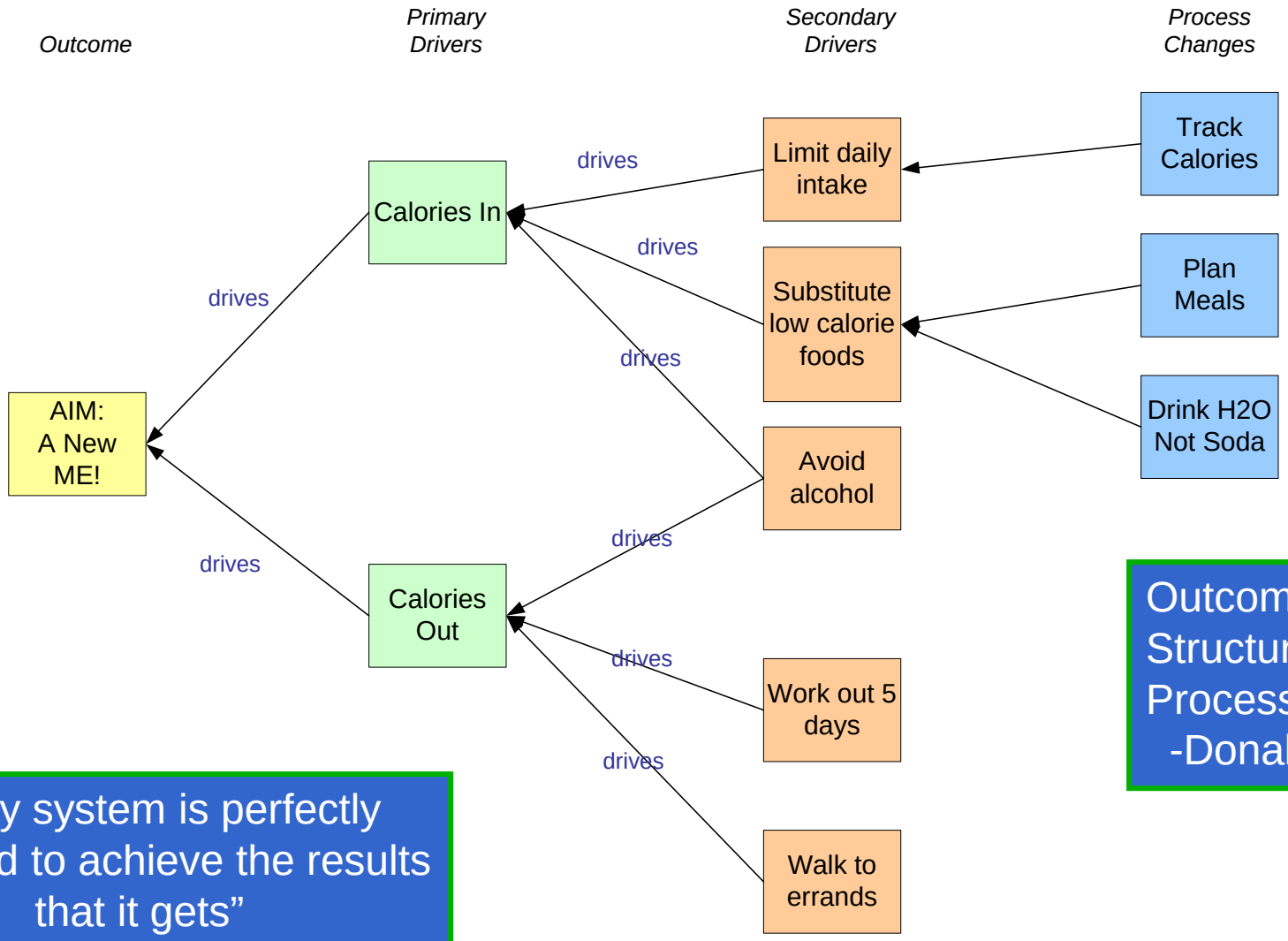
Be Clear about Cause and Effect

- We must have a theory, or prediction, that the change(s) we are testing and implementing will have a impact on the outcome we are trying to improve
- “Driver diagrams” are very useful in displaying your theory of cause and effect

Cause-Effect Driver Diagram



Understanding the System for Losing Weight

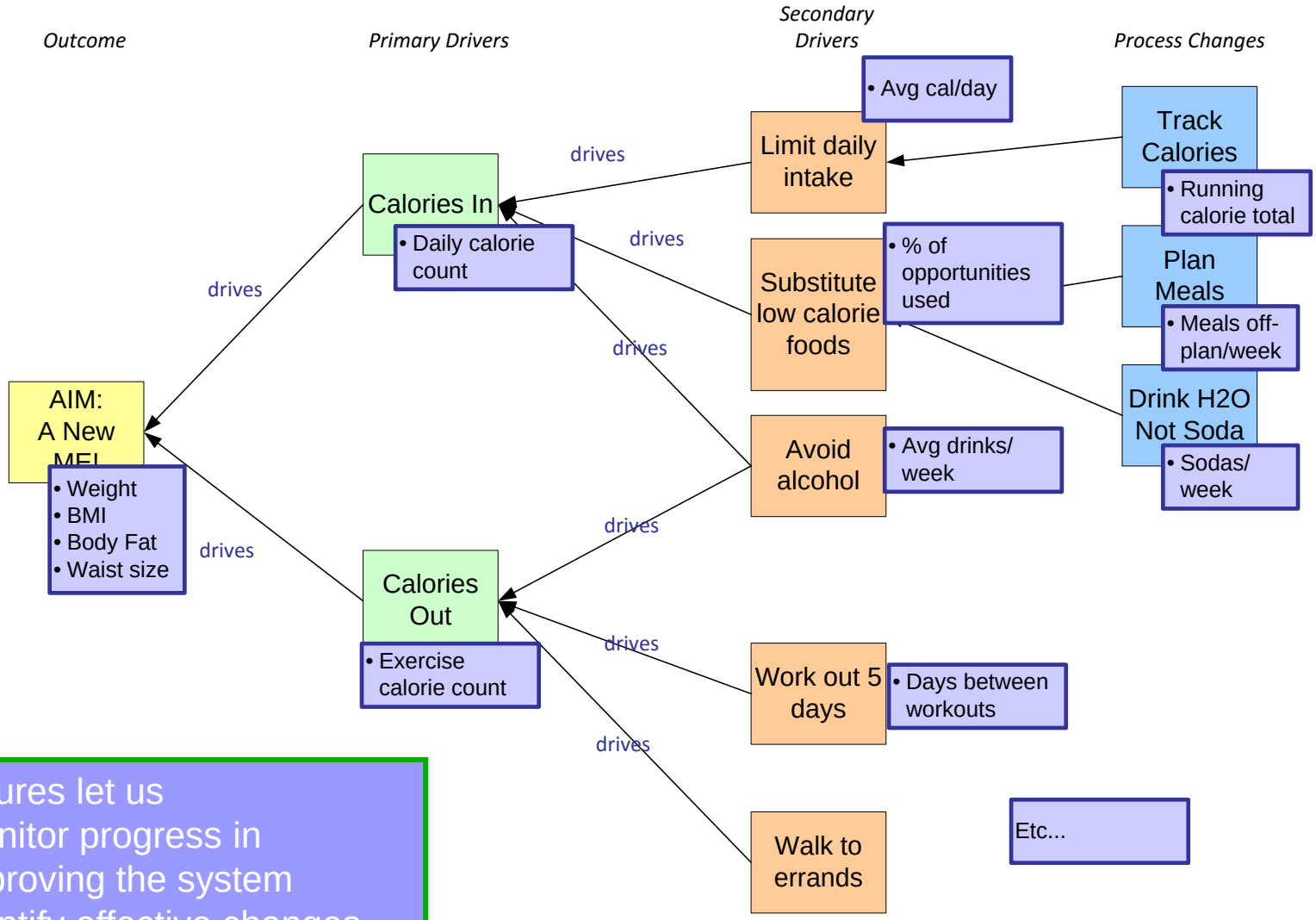


"Every system is perfectly designed to achieve the results that it gets"

Outcome = Structure + Process
-Donabedian

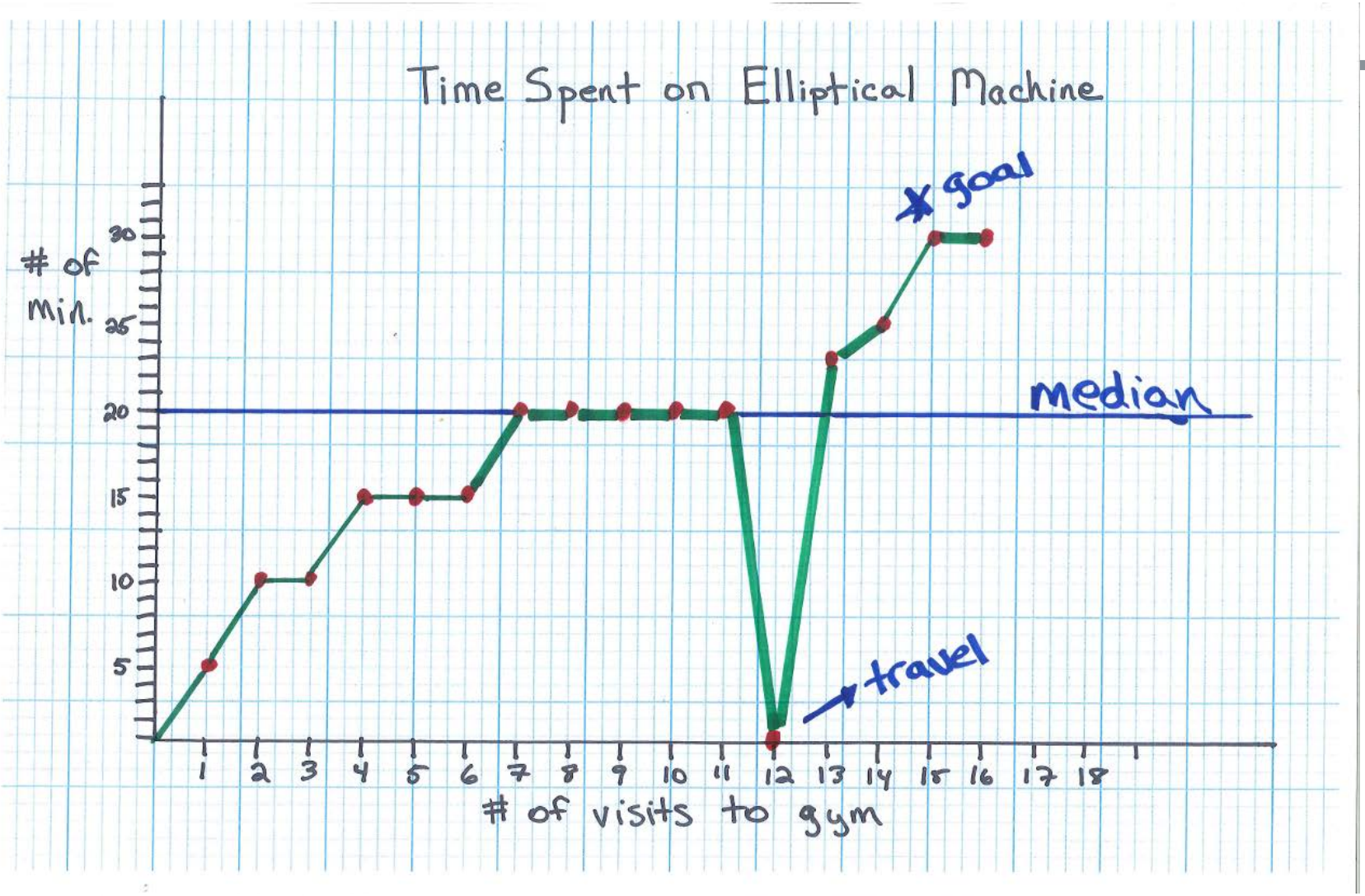
How Will We Know We Are Improving?

Measurement Framework for Losing Weight



Measures let us

- Monitor progress in improving the system
- Identify effective changes


Time Spent on Elliptical Machine
# of min.
30
25
20
15
10
5
goal
median
travel
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
# of visits to gym

Five Simple Examples of Interprofessional QI Involving Trainees

- Do you know who your doctor is?
- “Tinkering” with a teenagers blood pressure medication
- Understanding drug usage and reducing unnecessary prescriptions
  - A million $ discovery by the medical residents
- Learning how to look for medical errors as part of routine work
- “He’s always late for rounds”

Experiential Learning – Making Rigorous QI Part of Routine Work at the Point of Care

Monitoring Patient Safety

- Voluntary event reporting
- Morbidity and mortality conferences/reports
- Chart auditing
  - IHI Global Trigger Tool
- Automated data mining
  - Patient Safety Indicators (AHRQ PSIs)
  - Automated trigger tools
- Random Safety Audit

Random Safety Audit

- Translated from industry (banking and random process audits *via* Paul Plesk)
- Real time by the front line
- Data and feedback virtually immediate
  - Reliability of key safety processes evident immediately
  - Motivating, enabling, reinforcing; builds self-efficacy and social norms (key elements of behavioral change theory)
- Combines audit and feedback with iterative PDSAs
  - Even better than “what can I try by next Tuesday”

Random Safety Audit

- Systematically monitors a subset of error-prone points in the system that have the potential to harm patients
- Items selected randomly to be addressed either:
  - On multi-disciplinary rounds *(provider input required)*
  - At any time during the day *(provider input not needed)*
- Deck can be “packed”
- 20 items developed by expert consensus for testing in NICU (21st item added later)
- 4X6 “cards” include yes/no data form; trivia question on back

Staff Perceptions of the Random Safety Audit

- 84% of staff participated in rounds on which audit was performed
- 100% agreed or strongly agreed that this improved quality and safety
- 95% agreed or strongly agreed that it increased knowledge of clinical guidelines and safety goals
- 9% agreed with the statement “asking a safety question of rounds took up too much time”

IMPROVING INTERDISCIPLINARY TEAM EFFECTIVENESS BY TEAM TRAINING

Project lead: Surekha Bhamidipati, MD

Project Facilitators: Loretta Consiglio- Ward, Carol Moore

DOM sponsor: Dr. Robert Dressler, MD, MBA

CHRISTIANA CARE HEALTH SYSTEM

Acknowledgements

Dr. LeRoi Hicks, MD, MPH, Vice Chair, Medicine
Mike Eppehimer, SVP, Service Line Operations
Christiana Care Hospitalist Partners
Department of Medicine
Department of Case Management
Department of Social Work
IPC-The Hospitalist Group
Organizational Excellence
Patient Care Services (Nursing)
Pharmacy
Value Institute Center for Quality and Patient Safety
Value Institute Academy

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Background

2011	2011-12	2013-14
• Physician-patient colocation started on pilot unit • Daily patient/family centered rounds (PCR)	• PCR expanded to several units • No formal team training • Each unit with a different rounds dialogue	• Inefficient rounding • Variable adherence to rounds process • Task force established for standardization • Need for team training identified

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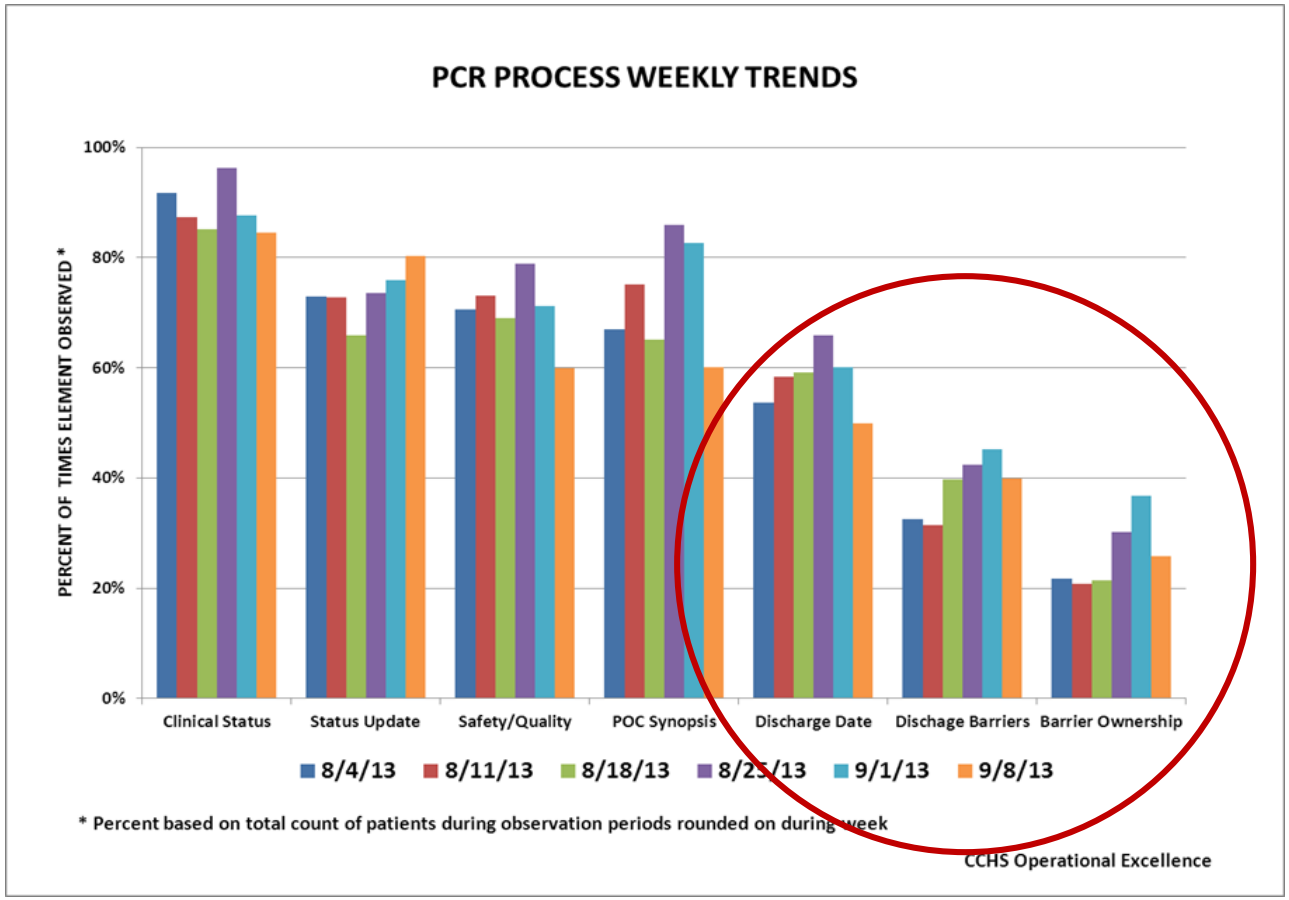
Preliminary rounds observations



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Aim statement

Improve team communication during interdisciplinary rounds

Where: Medicine unit and step down unit

How much: 15 % from baseline

What: **Improve adherence to three domains of discussion:**

- **Goals of admission**
- **Predicted date of discharge**
- **Task assignment to team members**

When: By March 2015

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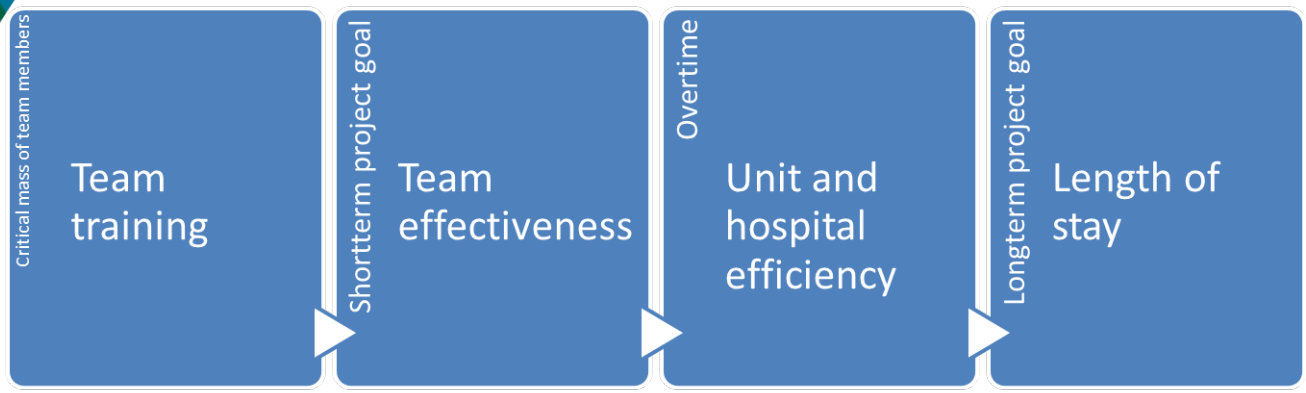
Conceptual theory for change



Hypothesis:

3 domains of interdisciplinary discussion influence Length of Stay (LOS)

- Goals of hospitalization
- Discharge date prediction
- Task assignment/task acceptance

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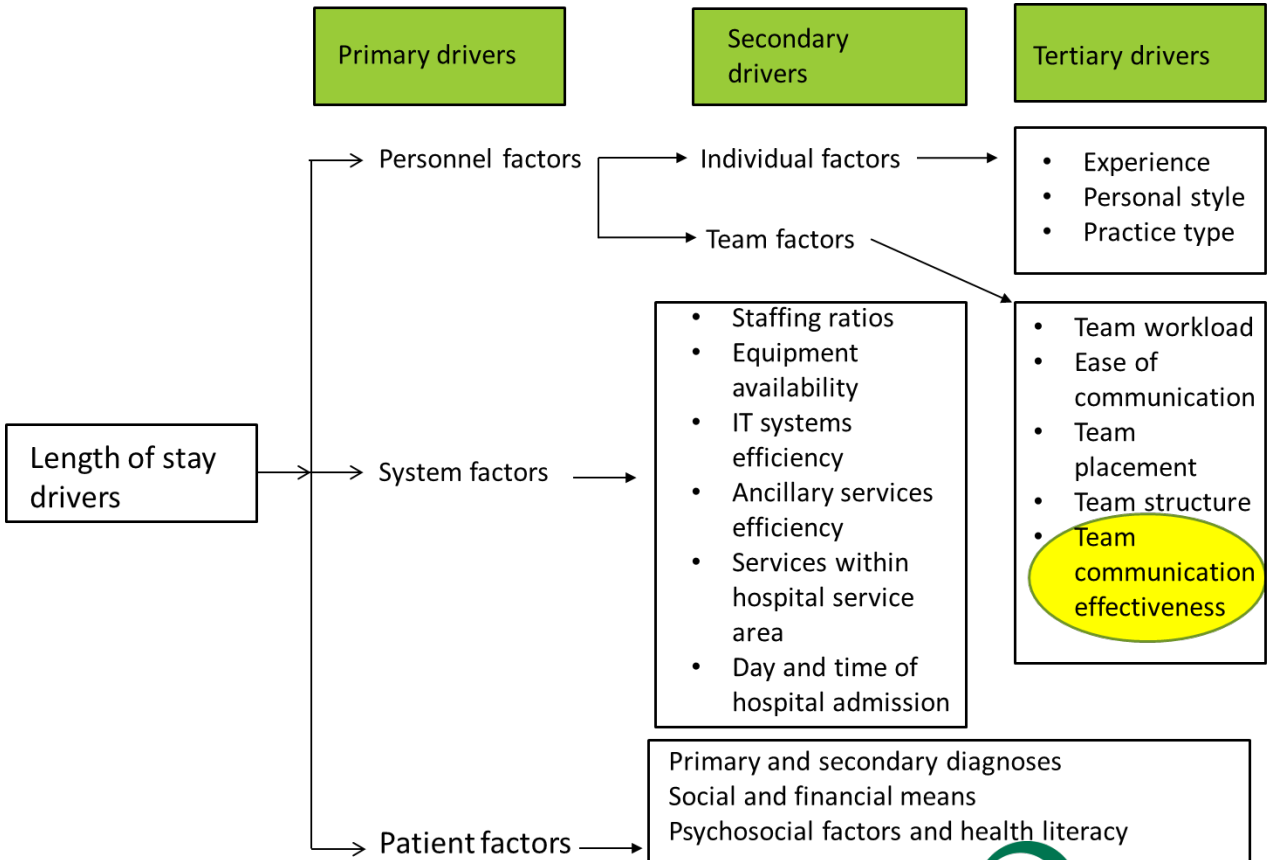
Length of stay driver diagram



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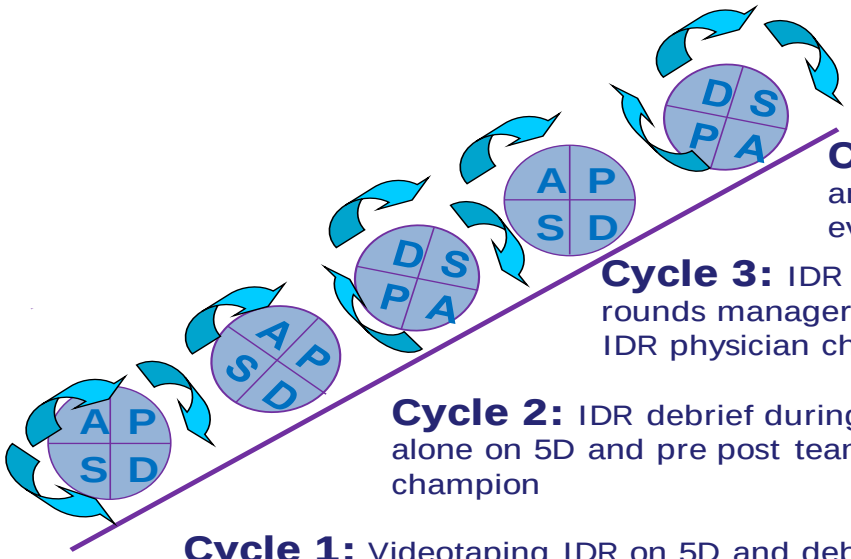
Development of education strategies

PDSA ramp

Ramp 1 aim

Test several mechanisms of training to identify the best mechanism of training IDR teams



Cycle 5: Videotaping IDR on 3D and debriefing with team about performance, pre- post team evaluations by internal Team STEPPS experts

Cycle 4: IDR debriefs as in cycles 2 and 3 on unit 3D with pre post team evaluations by IDR physician champion

Cycle 3: IDR debrief with physician and rounds manager on and pre post evaluation by IDR physician champion

Cycle 2: IDR debrief during a pause in IDR with physician alone on 5D and pre post team evaluation by IDR physician champion

Cycle 1: Videotaping IDR on 5D and debriefing with team about performance, pre- post debrief evaluations by Team STEPPS experts

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Interdisciplinary Rounds Team Education Plan

AUDIENCE:

- PCR team members: attending, nurse, PCF, CM/SW, Pharm (clarify who has role of rounds coordinator)

COURSE:

- **Team STEPPS Overview** as applied to PCR (1.0 hour)
- **Video Review & Debrief** of PCR process/best practice (15 min) and debrief (30 – 45min) or simulation

DELIVERY:

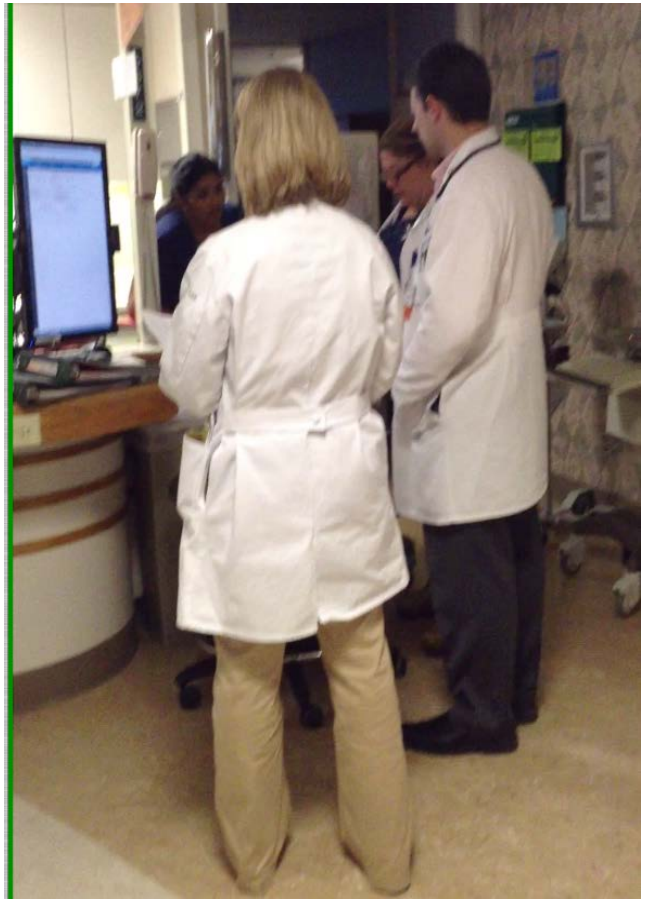
- Didactic or online, interactive audience discussion, simulation , small group application sessions

PRE REQUISITES:

- IHI Open School
  Patient Safety: PS 103.
  Teamwork and Communication recommended.

LEVEL:

- **Basic**



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Interdisciplinary rounds team members

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Team STEPPS education sessions: 5 medicine unit teams

- **Class room based training session for unit based interdisciplinary teams**
  - Concepts of Team STEPPS followed by a team video debrief
  - Video taping of rounds the same day
- **Physician leadership training**
  - Exclusive physician (Hospitalist) training as team leaders in PCR
  - Attended by both hospitalist groups

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Process Flow and Content by Role

1. Introduction MD/DO/APN

- Working diagnosis, clinical status
- Outline goals of hospitalization & anticipated medical readiness for discharge
- State today's plan towards these goals
- Estimate projected discharge date

2. RN or PCF

- Overnight events/response to interventions
- Updates linked to physician's stated clinical goals
- New test/ pertinent lab results
- Recent consult visits/notes update
- Activity, O2, last bowel movement
- Q/S checklist: lines, catheters, skin, falls, VTE, tele

3. Pharmacist

- High risk meds (Anticoagulation/ Platelets, Antidiabetics, Antibiotics, Pain)
- Appropriateness/length of therapies/ Stop Date Entry
- Renal function
- IV to PO conversion

4. Social Work /Case Manager

- Current status, criteria ie OBS/INPT
- Prior HHC/DME/Services
- Needs/Equipment at discharge
- Transportation
- Barriers to discharge
- Finances/Insurance
- Stepdown vs. Floor

Patient & Family

- Ask questions/offer input
- Participate as partners

6. PCF

- Closing the loop; review tasks, responsibilities, & any missing communication elements

5. MD/DO/APN

Summarize Patient/family goals
One line POC summary, D/C date
Task assignment

Rev. Jan.2015

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Communication and Leadership

Structured communication creates predictability and agreement as to how team members will communicate.

Use names.

Have all team members spoken?

"If anyone has information that is different, please speak up at any time."

"I need a little clarity"

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Cross Monitoring & Mutual Support

Have I received the information I need?

Verbalize expected discharge date.

"Does anyone have anything to add?"

Confirm responsibility for ownership of POC action.

Who will communicate info in the absence of a team member?

"Let's take a minute to ensure we all know what we're doing for this patient today."
Summarize patient's goal for the day.

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THE CHRISTIANA CARE WAY

Video debriefs:
Over 20 video debrief sessions to cover rotating staff members

There was a clear leader?
Communication clear?
Roles and responsibilities understood?
Situation awareness maintained?
Workload distribution?
Did we ask for or offer assistance?
Were errors made or avoided?
What went well, what should change, what can improve?

Debriefing is an essential tool for effective teamwork and an environment of continuous learning and improvement.

Video debrief

- **Unit based (in situ) video and direct observation debriefs**
  - Direct observation and videotape evaluation also served as feedback, training and data collection tools for measurement.
  - IDR observation tool utilized for debriefing and training

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Video debrief

Teams utilized tool to evaluate self performance

Leadership

Physician invites team members to speak freely and ask questions
Delegates tasks or assignments, as appropriate

Situation Monitoring

Each team member actively shares information about each patient
Establishes plan for communication with patient/family

Mutual Support

Respectful, attentive collaboration with team members
Assistance sought or offered

Communication

Succinct summary of overnight events provided
Today's plan of care communicated
Discharge date (anticipated) is discussed
Goals for patient clearly summarized

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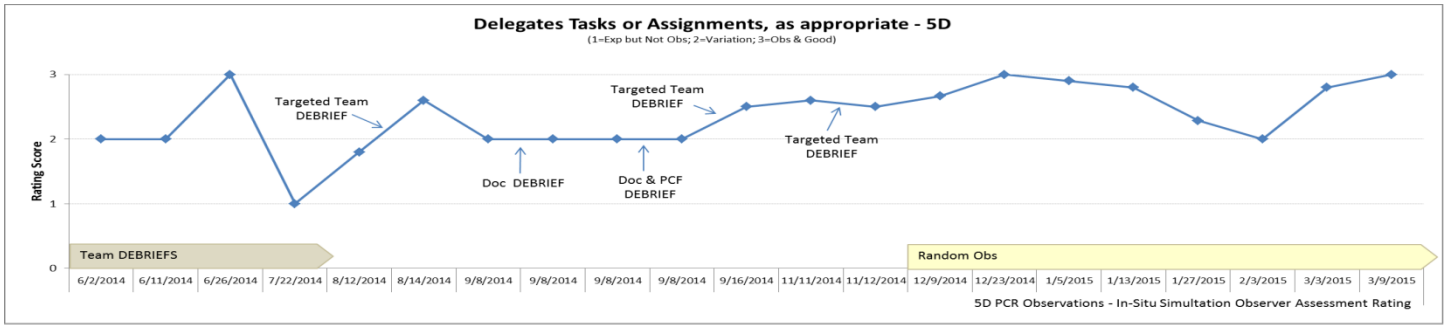
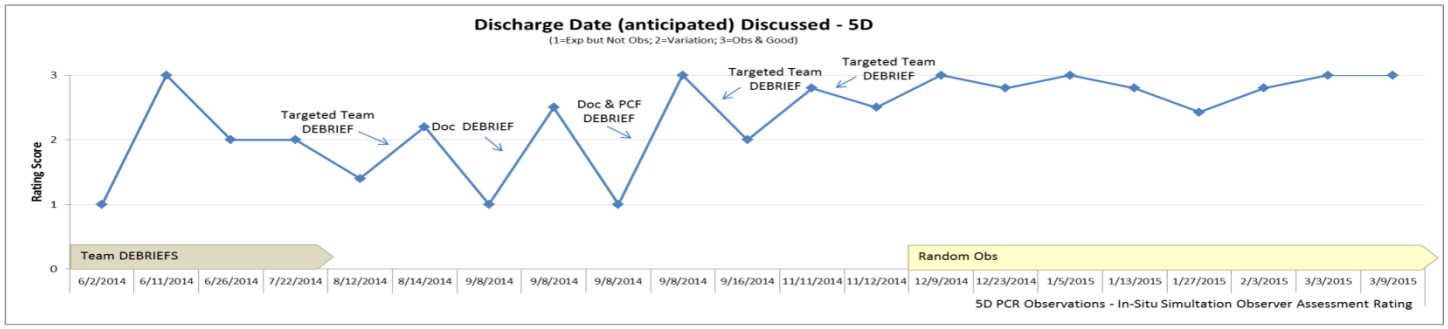
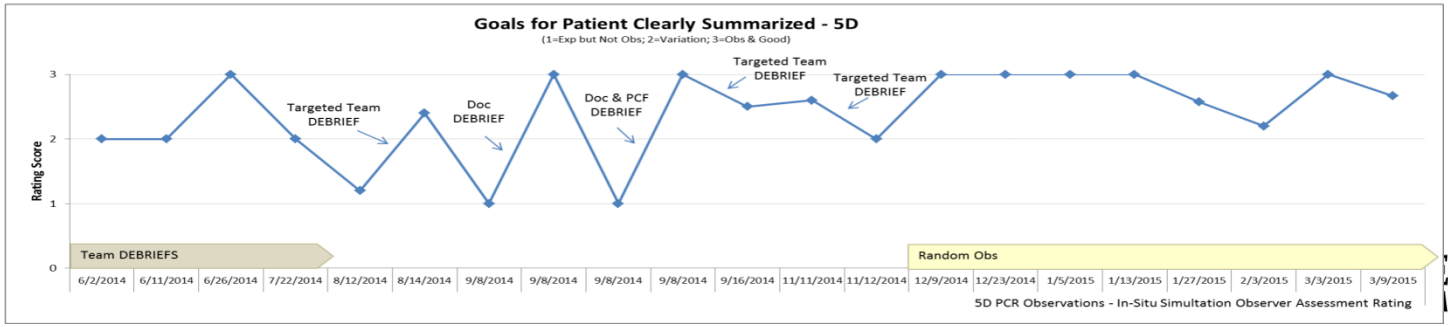
Process measures- team effectiveness Medicine unit







Medicine unit

Average Rating	Baseline (6/2-7/22)	Post (8/12-11/12)	% Change	Post (12/9-3/9)	% Change
Delegates Tasks	2	2.3	15%	2.7	35%
Discharge Date	2	2.2	10%	2.8	40%
Goals for Pt Clear	2.5	2.1	-16%	2.8	12%

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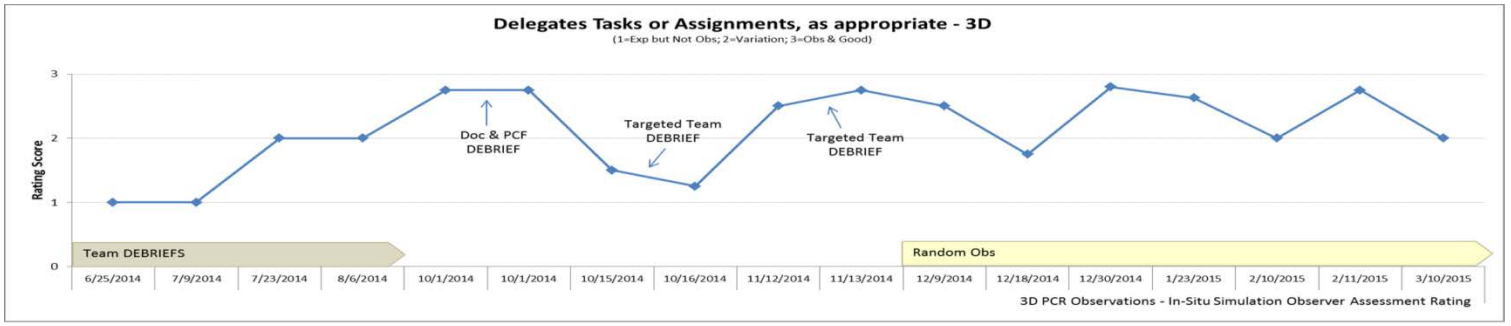
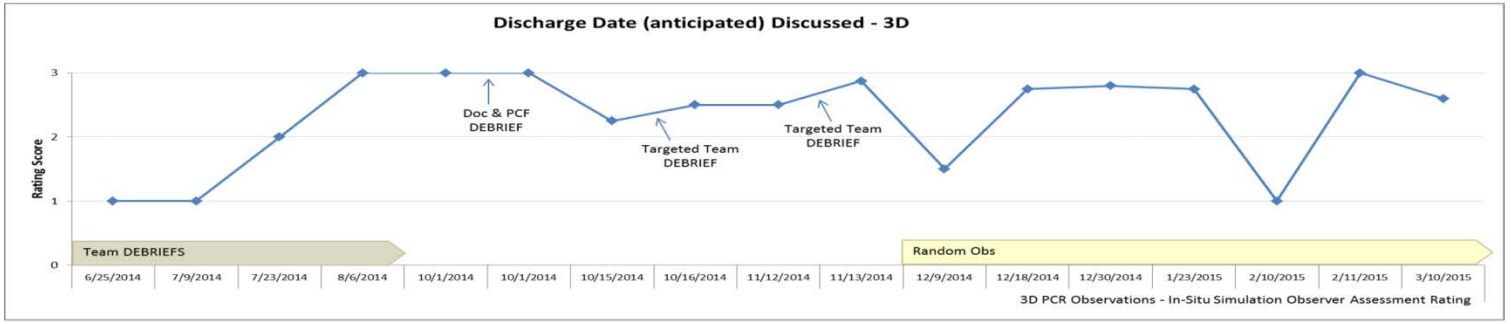
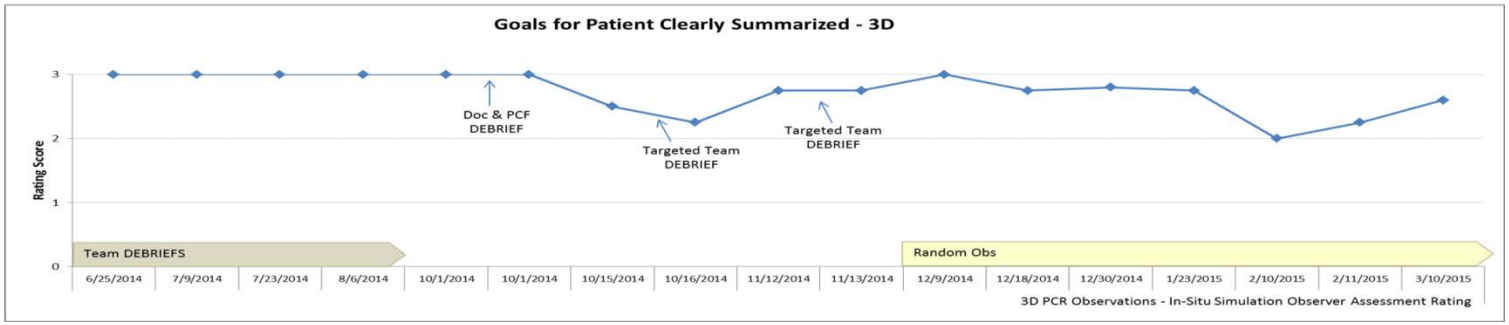
Process measures- Team effectiveness- step down unit







Stepdown unit

Average Rating	**Baseline (6/25-8/6)**	**Post (10/1-11/13)**	**% Change**	**Post (12/9-3/10)**	**% Change**
Delegates Tasks	1.5	2.2	47%	2.4	60%
Discharge Date	1.75	2.7	54%	2.6	49%
Goals for Pt Clear	3	2.7	-10%	2.7	-10%

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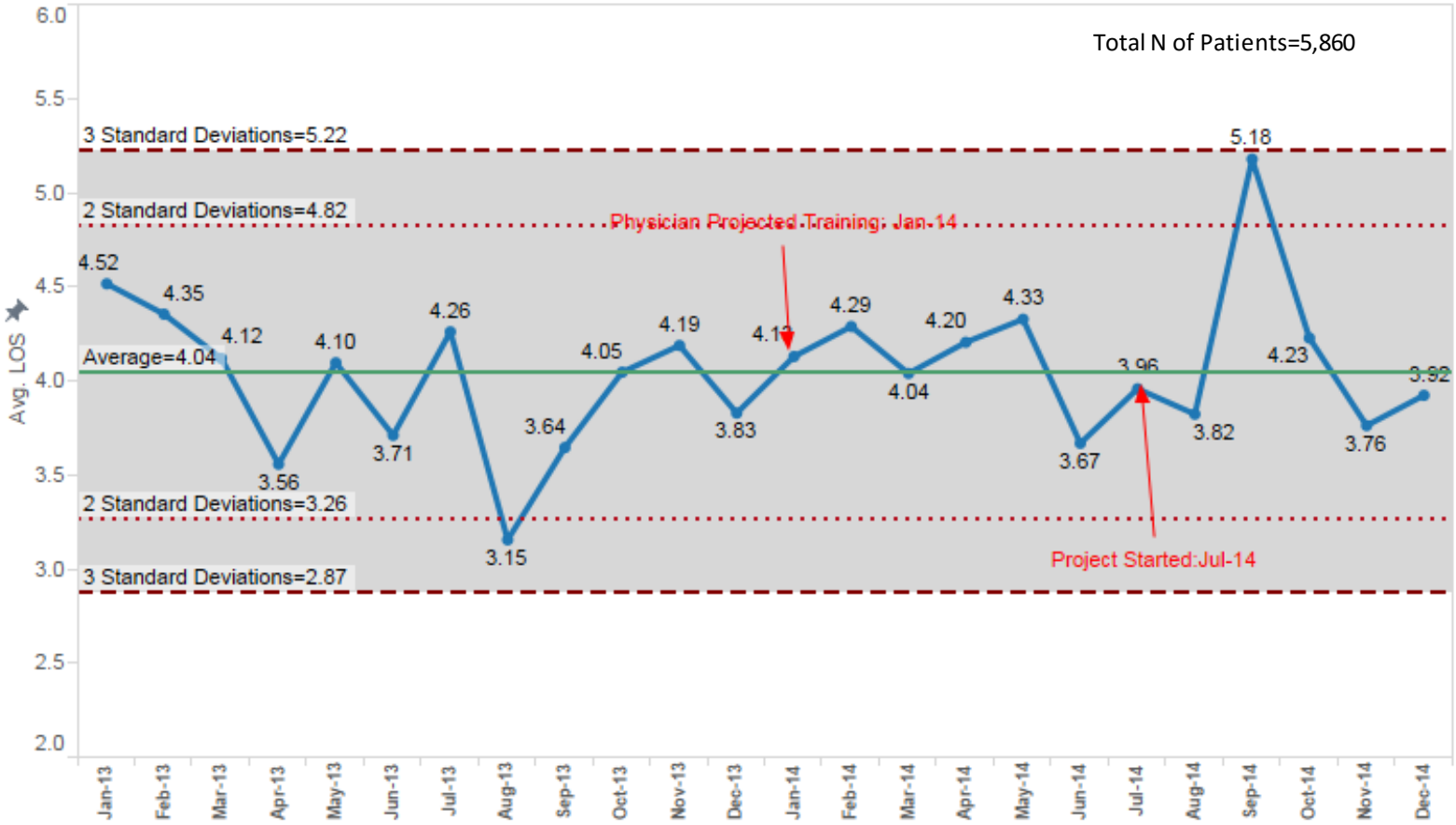
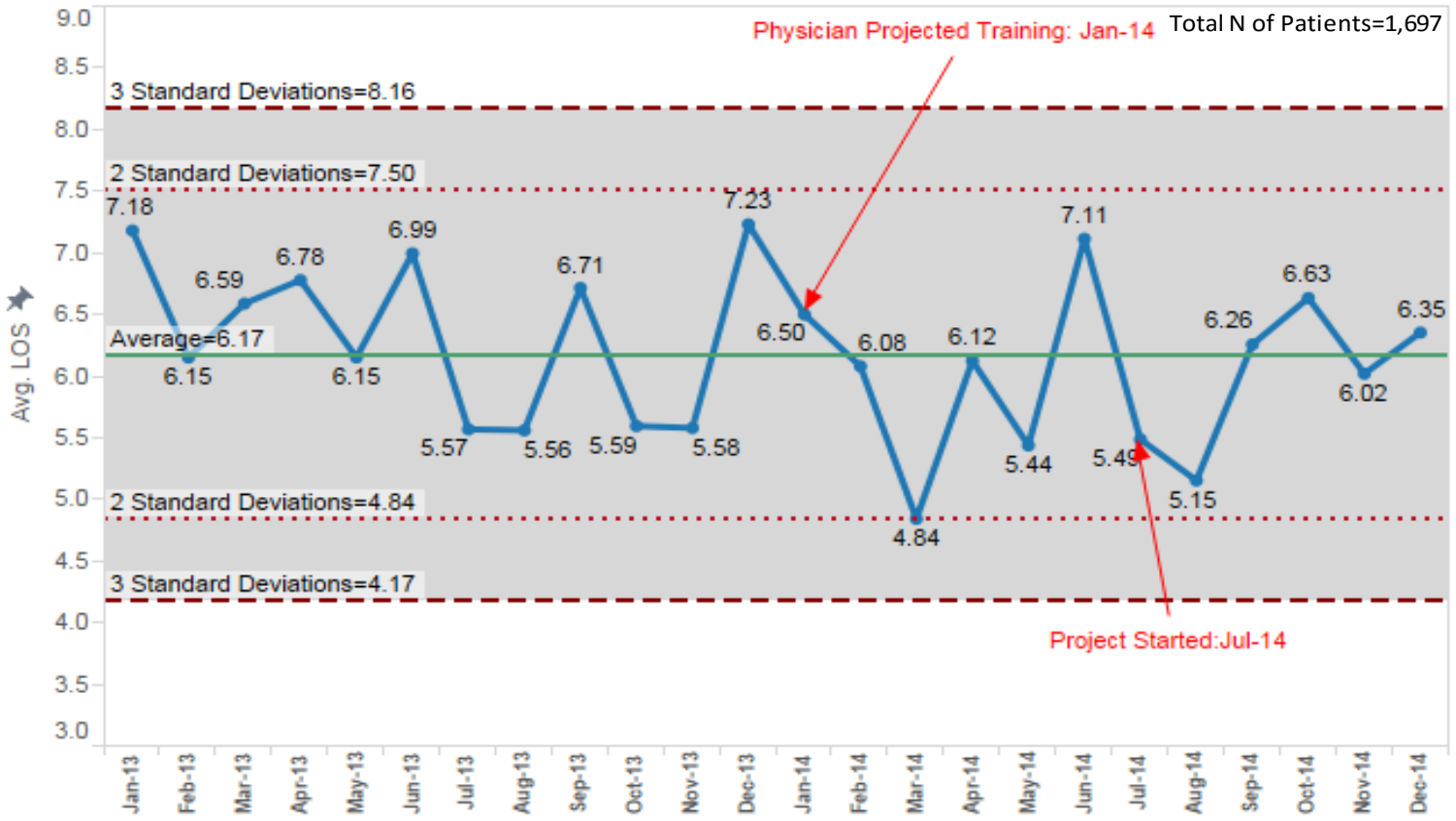
Measurement- Avg. LOS- Medicine unit



THE CHRISTIANA CARE WAY

Measurement- Avg. LOS- Step down unit



HEALTH SYSTEM

Conclusions

- Team training is effective
- Effect on LOS is unclear
- Sustaining short term gains is key to changing culture

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Barriers

- Team members availability
- Defining LOS

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Team training lessons learned

- Just in time targeted training in smaller doses
- Self-reflection through in-situ work processes with guided debriefing
- Feedback in a safe environment

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QI Lessons learned

- Conceptual models
- Attribution effect

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Questions?

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The Christiana Care Way

We serve our neighbors as respectful, expert, caring partners in their health. We do this by creating innovative, effective, affordable systems of care that our neighbors value.

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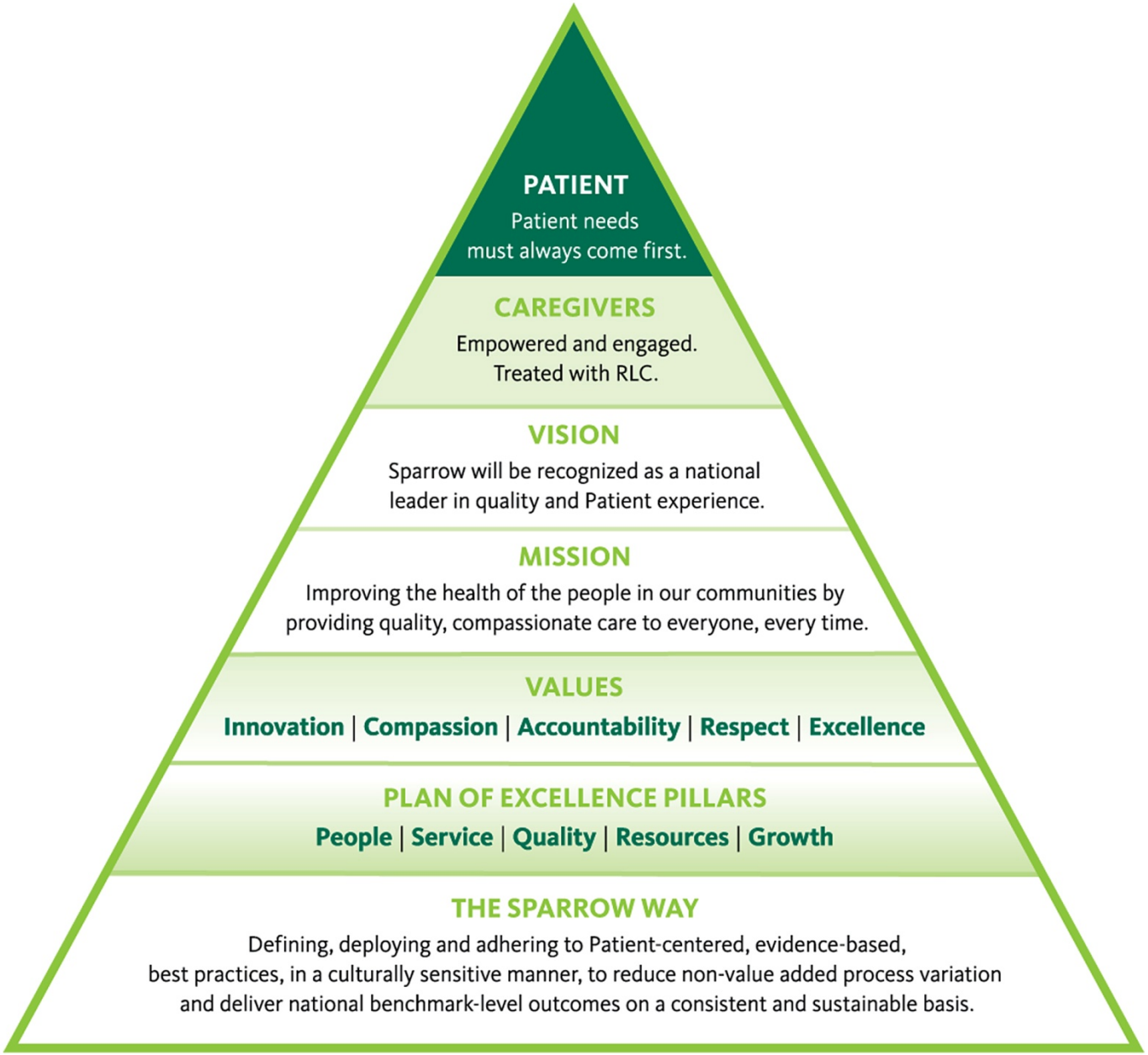
HEALTH SYSTEM

IHI Improvement Scholars Program

A Non-clinical Perspective

Lisa S Powell, MBA


PATIENT
Patient needs must always come first.
CAREGIVERS
Empowered and engaged. Treated with RLC.
VISION
Sparrow will be recognized as a national leader in quality and Patient experience.
MISSION
Improving the health of the people in our communities by providing quality, compassionate care to everyone, every time.
VALUES
Innovation | Compassion | Accountability | Respect | Excellence
PLAN OF EXCELLENCE PILLARS
People | Service | Quality | Resources | Growth
THE SPARROW WAY
Defining, deploying and adhering to Patient-centered, evidence-based, best practices, in a culturally sensitive manner, to reduce non-value added process variation and deliver national benchmark-level outcomes on a consistent and sustainable basis.

AIAMC and IHI are partnering to….

"….develop leaders who will have an opportunity to influence quality of care over a long period of time"

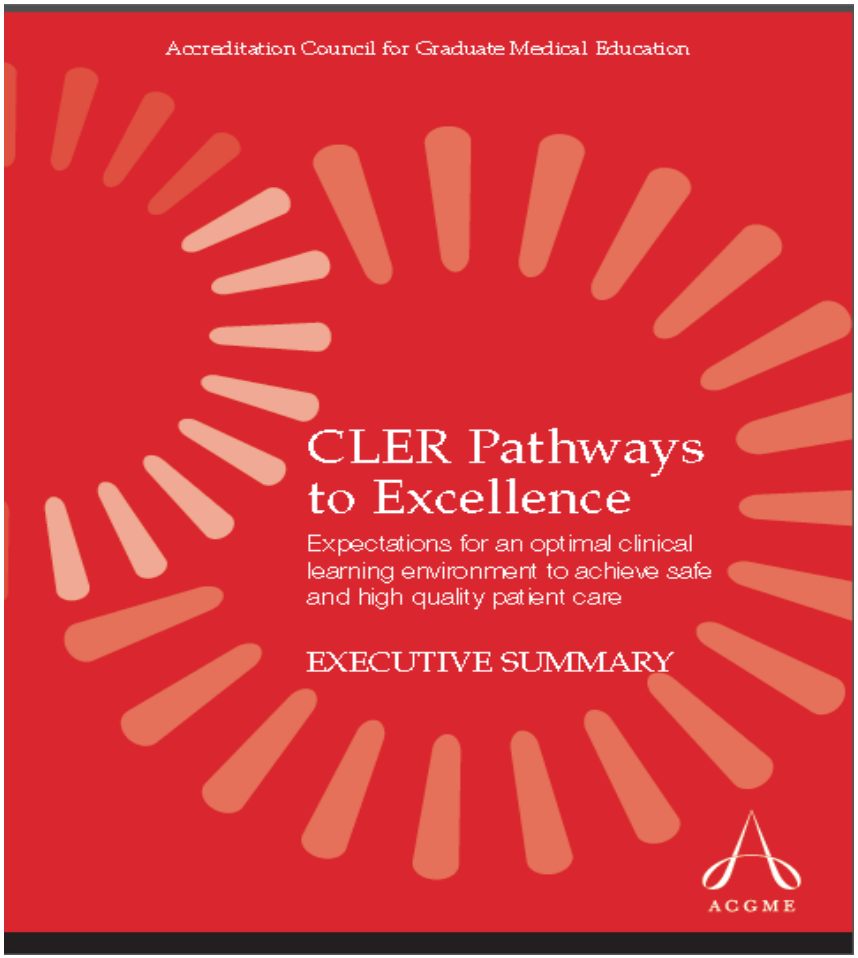
Why is QI Education Important to GME

- The right thing to do for our patients
- Prepares our physician learners for independent practice
- **Accreditation**

ACGME


THE NEXT ACCREDITATION SYSTEM
Continuous Observation
Identify Opportunities for Improvement
Program Makes Improvements
Assess Program Improvements
PROMOTE INNOVATION

ACGME CLER Pathway to Excellence



CLER PATHWAY 1: Patient Safety

- ***PS Pathway 1:*** Reporting of adverse events, close calls (near misses)
- ***PS Pathway 2:*** Education on patient safety
- ***PS Pathway 3:*** Culture of safety
- ***PS Pathway 4:*** Resident/fellow experience in patient safety investigations and follow-up
- ***PS Pathway 5:*** Clinical site monitoring of resident/fellow engagement in patient safety
- ***PS Pathway 6:*** Clinical site monitoring of faculty member engagement in patient safety

CLER PATHWAY 2: Healthcare Quality

- ***HQ Pathway 1:*** Education on quality improvement
- ***HQ Pathway 2:*** Resident/fellow engagement in quality improvement activities
- ***HQ Pathway 3:*** Residents/fellows receive data on quality metrics
- ***HQ Pathway 4:*** Resident/fellow engagement in planning for quality improvement

Benefits of IHI Program

- Changes the perspective on QI with the Model for Improvement
- Provides tools needed to be successful in QI endeavors
- Guides you through a real world example to assure classroom comprehension and application of skills of learned

Resident / Faculty Education

- Model for Improvement
- AIM Statements
- Metric Selection
- Simple Test of Change
- Rapid Improvement Cycles

Sparrow Benefits

- **Alignment with organizational initiatives to improve patient care**
  - Focused effort on reducing readmission rates
  - Medication reconciliation rate compliance in EMR

Sparrow Benefits

- **Multiple program level QI projects designed around areas of institutional focus**
  - Patient safety event reporting
  - CAUTI rates
  - Time to parenteral pain control in long bone fractures
  - Resource Utilization – Daily CBC Orders

Outcome of IHI Improvement Scholar Investment

» Alignment with the organization in QI efforts

» Residents and faculty engaged in QI/PS

» Multiple ongoing GME QI projects

» Improved outcomes for our patients

» Impressed C Suite

QUESTIONS?