Using Quality Improvement Tools to Support Change

Cathy Emeis PhD, CNM, FACNM
Ann Foster Page DNP, CNM, APRN, FACNM

March 1, 2019
Welcome to RPC Participants and OBI Participants! Meet our core RPC faculty team

Ana Delgado               Cathy Emeis               Ann Forster-Page               Holly Smith
Rachel Breman               Katie Page               Lisa Kane Low                Kate Chenok

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Reminders about webinar etiquette

- If you joined as a panelist, please mute your own phone or computer!
- If you joined as a participant, all phones and computers are muted
- We will take questions at the end of the presentation; feel free to submit them throughout
- Slides will be posted to the OBI website and RPC Basecamp after the webinar
- This is your time – please be present!

We will answer questions at the end of the presentation
Today’s presenters

Cathy Emeis, PhD, CNM, FACNM, is the Nurse-Midwifery Education Program Director and Director of the Faculty Practice at Oregon Health & Science University, Portland, Oregon. Dr. Emeis is the current chair of the ACNM Quality & Safety Committee as well as a member of the steering committee for the ACNM Reducing Primary Cesareans project. Dr. Emeis has formal training in quality improvement and recently completed a year-long interprofessional education training for faculty who lead doctoral students in quality improvement projects.

Ann Forster Page, DNP, CNM, APRN, FACNM completed the University of Minnesota midwifery program in 2001, DNP in 2017, and has been practicing full-time, full scope midwifery since. She is the director of the MHealth midwifery practice and inpatient services at UMMC. Ann is an adjunct Clinical Assistant Professor with the U of MN School of Nursing and adjunct clinical instructor with the U of MN Medical School. Ann has served 2 terms as Co-President of the MN Affiliate of ACNM and is on the national ACNM Board of Directors as the Region V Representative. She has been serving as a steering committee member for the ACNM Reducing Primary Cesarean Project since 2015, where she also served as a coach for a number of hospital systems in the collaborative. The University of Minnesota joined ACNM’s RPC Collaborative in 2015 where Ann serves as a team member for their work on implementing the Promotion of Spontaneous Labor Bundle.
Objectives

• Participants will become comfortable as novice users with the following tools:
  • Fishbone Diagram
  • 5 “Whys”
  • Process Maps
  • PDSA (Plan, Do, Study, Act)
  • Driver Diagrams
  • Charters or A3
Agenda

- Presentation (40 minutes) and Q and A (20 minutes)
- Please submit your questions to the Q and A box as we go along and we’ll have plenty of time at the end to discuss them
Overview of QI work

- Science of Improvement, 1920s.
- PDSA: Japan, Toyota, 1950s
- US industry: Lean & Six Sigma, 1980s
- Hospitals & Health insurance: QI and QC, 1990s-current
Overview of Tools Covered Today

- **Fishbone, or cause and effect diagram:** Helps to explore and display the possible causes of a certain effect.
  - It helps teams understand that there are many causes that contribute to an effect.
  - It graphically displays the relationship of the causes to the effect and to each other, and helps to identify areas for improvement.

- **5 Whys:** Helps to identify the root cause of a problem, especially with human factors.
  - Simple tool; easy to complete without statistical analysis.

- **Process Maps:** Process maps help visualize the current (or future) process and identify event sequences, decision points, and wait times/delays.

- **PDSA:** Shorthand for testing a change — by planning it, trying it, observing the results, and acting on what is learned.

- **Driver Diagram:** Schematic of factors or components of a system influencing the achievement of the primary aim.

- **Charter:** Guides improvement work; serves as an organizational tool.

Sources: IHI, Six Sigma, AHRQ Practice Facilitation Handbook
Fishbone Diagram

Source: IHI
Cause and Effect Diagram

[Product, Process, Event, Failure, or Problem]

Date:

<table>
<thead>
<tr>
<th>Cause</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equipment</strong></td>
<td></td>
</tr>
<tr>
<td>Primary Cause</td>
<td></td>
</tr>
<tr>
<td>Secondary Cause</td>
<td></td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td></td>
</tr>
<tr>
<td><strong>People</strong></td>
<td></td>
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<tr>
<td><strong>Materials</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td></td>
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<tr>
<td><strong>Management</strong></td>
<td>PROBLEM</td>
</tr>
</tbody>
</table>
People

Nurses don’t know IA

Providers don’t order IA

Environment

No policy on IA

Work flow relies on EFM monitoring

Equipment

Only 2 doptones on the unit

Cont. EFM use in low risk laboring women

Process

No standard way to evaluate risk and appropriate candidates for IA

Measurement

EMR only charts EFM

Management

Risk Management unaware of evidence to support IA

Nurses are only taught cont. EFM in orientation and training
5 Why’s Worksheet

Define the Problem:

Why is this happening?

1. → Why is that?

2. → Why is that?

3. → Why is that?

4. → Why is that?

5. → Why is that?

Caution: try to answer without making assumptions, if possible.

Caution: If your last answer is something you cannot control, go back up to previous answer.
Process Map, Current and Future State

High Level Pre-term Labor Patient Process Map

Current State:
- Admit: Nursing
- Assess: Nursing
- Notify Provider: Nursing
- Assess-Provider: Provider
- Order for Ff/N and Spec. Collection: Provider
- Receive Spec: Lab
- Ff/N Result: Lab
- Assess and DC: Nursing & Provider

Current State Timeline: 1.35 hours Admit to FfN order, 0.35 hours Order to Spec receiving, 0.25 hours Receiving to result, 1.05 hours Result to DC, Total 6.6 Hours Current State total.

Future State:
- Admit: Nursing
- Assess: Nursing
- Notify Provider: Nursing
- Enter observation order: Provider
- Order for Ff/N and Spec. Collection: Provider
- Receive Spec: Lab
- Ff/N Result: Lab
- Plan made to treat or DC: Nursing & Provider

Future State Timeline: 0.5 hour Arrival to notification, 0.25 hour Notification to observation order, 0.23 hour Spec collection to result, 1 hour Receiving to result, 0.5 hour Result to DC or admit, Total 2.5 hours Future State total.

Reduce 4.1 Hours (6.6 hours to 2.5 hours) from Check-in time to Treatment or DC.
Infant STS @ Birth Process (Current State)

**OB/GYN**
- Birth
- Abdomen drape
- Cut Cord

**L&D RN (Baby)**
- Dry & stimulate, bulb suction
- Place on Mom chest STS
- Hat & Diaper Application
- Warm Blanket Mom/Baby
- APGAR Vitals 5 mins.

**L&D (Mom)**
- Assist OB
- Clean & Peri Care
- Remove drapes
- Re Adjust Bed

**Other**

Idea or Opportunity to Improve Process
Plan, Do, Study, Act: “PDSA”
Example of a PDSA Worksheet

PDSA Worksheet for Testing Change

Aim: (overall goal you wish to achieve)

Every goal will require multiple smaller tests of change

<table>
<thead>
<tr>
<th>Describe your first (or next) test of change:</th>
<th>Person responsible</th>
<th>When to be done</th>
<th>Where to be done</th>
</tr>
</thead>
</table>

Plan

List the tasks needed to set up this test of change

<table>
<thead>
<tr>
<th>Person responsible</th>
<th>When to be done</th>
<th>Where to be done</th>
</tr>
</thead>
</table>

Predict what will happen when the test is carried out

<table>
<thead>
<tr>
<th>Measures to determine if prediction succeeds</th>
</tr>
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</table>

Do

Describe what actually happened when you ran the test

Study

Describe the measured results and how they compared to the predictions

Act

Describe what modifications to the plan will be made for the next cycle from what you learned

Institute for Healthcare Improvement • ihi.org
Example of a PDSA from Denver Health
PLAN

**Step 1:**
*Plan* the test or observation, including a plan for collecting data.

*Make predictions* about what will happen and why.

- Intermittent Auscultation (IA) as standard of care for healthy, medically low risk childbearing women in spontaneous labor. Measure % time admitted with exclusive IA
- Women enter labor with intentions re: pain management, measure success with keeping with pain relief intention
DO

Step 2:
• Try out the test on a small scale.
• Carry out the test.
• Document problems and unexpected observations.
• Begin analysis of the data.

• Over 2 week time period complete mandatory in-service all interprofessional staff, all shifts.
• Increased awareness of guideline, research, safety, appropriate candidates.
• Modeled behavior, night shift pilot.
  – Challenges: CNM/PT ratio, RN resistance, turn over, triage
STUDY

Step 3:
• Set aside time to analyze the data and study the results. Complete the analysis of the data.
• Compare the data to your predictions.
• Summarize and reflect on what was learned.

Time on Intermittent Auscultation

<table>
<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.6%</td>
<td>35.6%</td>
</tr>
<tr>
<td>(Benchmark 85.3)</td>
<td>P=&lt;.001, OR 22.2</td>
<td></td>
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</tbody>
</table>

Achieve pain relief intention

<table>
<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>72.8%</td>
<td>97.5%</td>
</tr>
<tr>
<td>(Benchmark 98.6%)</td>
<td>P=&lt;.001, OR 10.8</td>
<td></td>
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ACT

Step 4:
• Refine the change, based on what was learned from the test.
• Determine what modifications should be made.
• Prepare a plan for the next test.

CNM/pt ratio
Volunteer doulas
Revised guidelines (all access, no order required, “care of the laboring patient”, “pain management guideline- inc. non-pharmacologic)

RN resistance
Continued reinforcement, capacity, skills building, documentation
MD leadership
Time

Turn over
Hardwired competency assessment
Interprofessional performance evaluation (chart audits, self eval, peer eval)

Triage
Looked at routine practices
## Results

<table>
<thead>
<tr>
<th></th>
<th>Denver Health 2005 N=269</th>
<th>Denver Health 2010 N=1,065</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous labor support</td>
<td>2%</td>
<td>67%</td>
</tr>
<tr>
<td>Hydrotherapy</td>
<td>3%</td>
<td>61%</td>
</tr>
<tr>
<td>Intermittent auscultation</td>
<td>2%</td>
<td>67%</td>
</tr>
<tr>
<td>Intermittent auscultation only</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td>Success with pain relief intention</td>
<td>50%</td>
<td>76%</td>
</tr>
<tr>
<td>Non-lithotomy birth position</td>
<td>1%</td>
<td>98%</td>
</tr>
</tbody>
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Deeper Dive into Drivers

What is a driver?

—a group of causes or factors that influence the aim and help the team focus on specific interventions or changes.
How do we Identify our Drivers?

- Ishikawa diagrams (fishbone)
- Pareto charts
- Process maps
Using Drivers to Design an Intervention

- What are the changes we can make that will result in improvements?
- Interventions should target actions that support/drive improvement to a key driver.
- Be basic enough to consider the impact of the intervention on stakeholders, processes, protocols
- Be flexible enough to allow design flexibility
Driver Diagram

• Is it worth it to develop a driver diagram?
• What is keeping us from achieving our AIM?
• Where can we focus to develop effective changes to test?
Aim:
XX% of women will receive 1:1 labor support in ACTIVE labor by the end of xx months

*Example of a SMART Goal

Driver Diagram Example

**Primary Drivers**
- Dilatation at admission
- Provider and RN commitment
- Institutional guidelines that define and promote 1:1 support

**Secondary Drivers**
- Early labor Guideline or Early Lounge
- Identification of Active labor
- Provider and RN training/competency assessments
- RN Staffing ratio
- EMR documentation of support in labor (did it happen and by whom)
- Financial commitment of institution
- Policy development and vetting, approval
- Inclusion and/or availability of doulas

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SMART Goals

- **Specific**: State exactly what you want to accomplish (Who, What, Where, Why)

- **Measurable**: How will you demonstrate and evaluate the extent to which the goal has been met?

- **Achievable**: stretch and challenging goals within ability to achieve outcome. What is the action-oriented verb?

- **Relevant**: How does the goal tie into your key responsibilities? How is it aligned to objectives?

- **Time-bound**: Set 1 or more target dates, the “by when” to guide your goal to successful and timely completion (include deadlines, dates and frequency)
Review: Why A3 or Charters

• Alignment and agreement between leadership and project team doing the work
• Standard framework for projects
• Communication tool that assists the team and leadership in:
  – Identifying and agreeing on the project deliverables
  – Providing regular status update
  – Identifying areas for leadership attention and support
  – Supporting sustainment and accountability
• A living document that is used to structure and guide meetings
• Tracks progress of improvement over time
Project Team/Committee Charter

**Project/Committee Name:** Healthy Birth Initiative Reduction of Primary Cesarean Collaborative

**Purpose/Goal:** The goal of this project team/committee is to participate in the HBI RPC Collaborative by instituting the Progress in Labor and Labor Support Bundles.

**Chairperson(s):**

**Executive Sponsor(s):**

**Team Members:**

<table>
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<tr>
<th>Name</th>
<th>Title</th>
<th>Role</th>
</tr>
</thead>
</table>

**Meeting Frequency:** Monthly

**Minutes:** Recorded by insert name and distributed at each meeting.

**Team Process:**

1. Voting Privileges: All members have equal voting privileges.
2. Problem Solving: Group discussion and LEAN Principles
3. Communication: Meetings, email
4. Other: Attended on-site for Collaborative in Jan, 2016 in Maryland

**Responsibilities:**

1. Each member is expected to: attend meetings, support bundle institution, perform tasks assigned
2. Engage personally in initiatives that will assist in achieving teams’s goals for reduction of primary cesarean section in the NTSV (nulliparous, term, singleton, vertex) population
3. Share best practices, success stories, and report out on assignments as scheduled on agenda.
Questions?

Please type your questions into the question box

Question & Answer

The Q&A window allows you to ask questions to the host and panelists. They can either reply back to you via text in the Q&A window or answer your question live.

1. Click Q&A to open the Q&A window.
2. Type your question into the Q&A box. Click Send.

You asked: What happens when I raise my hand?

Send Anonymously

3. If the host replies via the Q&A, you will see a reply in the Q&A window.

You asked: What happens when I raise my hand?

Molly Turner answered: I can take you off of mute.

Send Anonymously

Send