

PREMIER

Sustainability - Making Change Last!



GaPQC AIM Webinar – April 2, 2019

1. Share the fundamentals of systems thinking as it applies to sustainability and organizational change.
2. Provide resources to help healthcare practitioners understand the key factors that impact the successful spread and sustainability of quality improvement.
3. Understand how to develop your own “Theory of Success” for sustaining organizational change.



FOR IMMEDIATE RELEASE

Premier Inc. Launches Nationwide Bundle of Joy™ Campaign to Scale Advancements in Maternal Healthcare throughout the U.S.

Bundle of Joy™ campaign to raise the bar on the quality, safety and cost of care for mothers and babies; mobilizes Premier's alliance of 4,000+ hospitals and health systems, 100B data points, vast array of industry partnerships and history of proven best practices

CHARLOTTE, N.C. (April 2, 2019) — Premier Inc. (NASDAQ: PINC), a leading healthcare improvement company, has launched the [Bundle of Joy™ campaign](#) to raise the bar on the quality, safety and cost of care for mothers and babies across the U.S. Premier aims to build and deploy new care delivery models using evidence-based guidelines and best practices from around the nation, ultimately scaling proven advancements across the industry.

"Every new mother and child deserves the best beginning possible, at the most affordable price point," said Susan DeVore, President and CEO of Premier. "Our goal for the *Bundle of Joy* campaign is to ensure mothers and babies are always at the center of care and supported by the latest evidence, the best doctors and the most successful practices. We're building on our years of work as well as our expertise in syndicating innovative ideas and data from our powerful footprint of health system, physician and industry partners to measure, monitor and scale industry advancements."

Maternal health is a national priority. Mothers are at higher risk of dying during childbirth in the U.S. than in any other industrialized nation. America is also the only developed nation with an increasing maternal mortality rate. However, more than [60 percent of pregnancy-related deaths](#) in the U.S. are preventable. The *Bundle of Joy* campaign is a multi-year effort to collaboratively assess, build, implement and broadly share the tools and best practices that are needed to ensure every birth is a safe, healthy and joyful journey for mothers and their babies.

The *Bundle of Joy* campaign ignites efforts to improve maternal and infant health by:

- Evaluating the current state and pinpointing specific improvement opportunities using Premier's robust database, which houses information on more than 45 percent of all U.S. hospital discharges, 100 billion data points and 1.2 million annual births.
- Connecting providers through data-driven, collaborative, performance improvement work that aligns frontline clinicians to best practices and evidence-based reliability guidelines.
- Engaging brilliant industry minds to find the solutions that work and scale them across Premier's national alliance of more than 4,000 hospitals and health systems.
- Researching specific therapeutic interventions and tools and assessing their clinical efficacy over time.
- Linking clinical quality and performance from primary care to hospital to post-acute care.
- Designing and implementing a 12-month optimal care model that includes pregnancy, labor and delivery, and post-partum care.
- Transparently sharing the progress being made across the nation and the best practices achieving those results.

\$18 billion

Total member savings of nearly **\$18 billion** through our QUEST® Collaborative alone.

200,000 lives saved

Using insight from our collaboratives and member health systems, thousands of lives are being saved.

4,000

A network of approximately 4,000 member hospitals and health systems.



“Why do we need to change?”



Preventable Deaths In Hospitals

- 1999: We learned that 98,000 people were dying every year from preventable errors in hospitals
- 2013: Estimated that more than 400,000 people per year die from preventable harm in hospitals
- 2013: Preventable medical errors ranks 3rd highest killer in U.S. only to heart disease and cancer
- 2011: “More than a third of the pregnancy-related deaths were determined to have had a good-to-strong chance of being prevented.”
- 2018: Over 60 – 70% of pregnancy-related deaths in the U.S. were preventable.
- 2019: “85% of Tennessee maternal deaths preventable”
- Georgia leads the nation in maternal deaths ~ how many were preventable?



“We are burying a population the size of Miami every year from medical errors that can be prevented” ~ The Leapfrog Group 2013



Maternal death rates are **2X** higher and harm **100% higher** than the past^{1, 5}



60% of all maternal deaths could be prevented²



\$19.5B in estimated costs of preventable harm³



Maternal deaths are **4X** more common in African Americans¹ and **64% higher** in rural areas⁴

1 Dina Fine Maron (2015, June 8). Has Maternal Mortality Really Doubled in the U.S.? (article) Retrieved from, <https://www.scientificamerican.com/article/has-maternal-mortality-really-doubled-in-the-u-s/>

2 Report From Nine Maternal Mortality Review Committees (2018). CDC Foundation (report). Retrieved from, <https://www.cdcfoundation.org/building-us-capacity-review-and-prevent-maternal-deaths>

3 Sophia Bernazzani. (2017, Oct 5). Tallying the High Cost of Preventable Harm (article). Retrieved from, <http://costsofcare.org/tallying-the-high-cost-of-preventable-harm/>

4. CDC Severe Maternal Morbidity in the U.S. Retrieved from <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/severematernalmorbidity.html>

“60 - 70% of Maternal Deaths Were Found to be Preventable”

Overall



33.5%

Not Preventable



63.2%

Preventable



3.2%

Unable to Determine

Cardiovascular and Coronary Conditions



27.3%

Not Preventable



68.2%

Preventable



4.6%

Unable to Determine

Hemorrhage



25.0%

Not Preventable



70.0%

Preventable



5.0%

Unable to Determine



Council on Patient Safety in Women's Health Care



American Association of Nurse Anesthetists



American Board of Obstetrics and Gynecology



American College of Nurse Midwives



American Academy of Family Physicians



American College of Obstetricians and Gynecologists



American College of Obstetricians and Gynecologists



American Society of Anesthesiologists



American Society for Reproductive Medicine



American Urogynecologic Society



Association of Women's Health Obstetric and Neonatal Nurses



National Association of Nurse Practitioners in Women's Health



Pulse of New York



Society of Gynecologic Oncology



Society for Maternal Fetal Medicine



Society for Obstetric Anesthesia and Perinatology



Society of OB/GYN Hospitalists



Society for Reproductive Endocrinology and Fertility

Hospitals know how to protect mothers. They just aren't doing it.

awRR 24 B 30

enFO 43 m



**DEADLY
DELIVERIES**

Hospitals blame moms when childbirth goes wrong. Secret data suggest it's not that simple.

A USA TODAY analysis of billing data from 7 million births found about one in eight hospitals have complication rates of at least double the norm.



Federal Action – State and Hospital Focused

S.3392 - MOMS Act

115th Congress (2017-2018)

BILL Hide Overview

H.R.1318 - Preventing Maternal Deaths Act of 2018

115th Congress (2017-2018)

LAW Hide Overview

All Information (Except Text) for H.R.315 - Improving Access to Maternity Care Act

115th Congress (2017-2018)

[Back to this bill](#)

LAW Hide Overview

H.R.5761 - Ending Maternal Mortality Act of 2018

115th Congress (2017-2018)

BILL Hide Overview

Sponsor: [Rep. Krishnamoorthi, Raja ID-IL-9](#) (Introduced 05/10/2018)

Committees: House - Energy and Commerce

Latest Action: 05/15/2018 Sponsor introductory remarks on measure. ([All Actions](#))

Tracker:

Introduced



ABOUT UPDATES ACTIVITY SUBCOMMITTEES

Search

Ways and Means Launches Investigation Into Rising Death Rates Among Mothers During and After Childbirth

OCTOBER 10, 2018 — [PRESS RELEASES](#)

Washington, D.C. — What do Afghanistan, Sudan, and the United States all have in common? They are the only countries in the world where the maternal mortality rate is on the rise, according to recent [studies](#) by the Alliance for Innovation on Maternal Health (AIM).

Compared to 30 years ago, AIM's [report](#) finds that women giving birth in the U.S. are more at risk of dying than their mothers were. Even more alarming is a considerable racial disparity: African American women are three to four times more likely to experience pregnancy-related deaths than Caucasian women.

In light of this report, House Ways and Means Committee Chairman Kevin Brady (R-TX), Oversight Subcommittee Chairman Lynn Jenkins (R-KS), and Health Subcommittee Chairman Peter Roskam (R-IL) have launched an [investigation](#) to determine why maternal mortality and morbidity rates are rising in America and what federal agencies, states, and hospitals are doing and can do to address this issue.

Upon announcement of this investigation, Chairman Brady, Chairman Jenkins, and Chairman Roskam released the following statement:

"Bringing a new baby into this world should be one of the most exciting and rewarding times in a woman's life. It is absolutely unacceptable that preventable failures are the cause of avoidable, unnecessary, and absolutely tragic deaths. America needs to be the health care leader of the world, and women across the country need to know they will be safe and in good hands while giving birth. With this investigation, we are committed to finding out why these deaths are happening and where Congress can take action to not only prevent these deaths, but also reverse this trend."

[CLICK HERE](#) to read the letter.

Background: Recent concerns have been raised that more women are dying from pregnancy-related complications in the U.S. than any other developed country. Every year in the U.S., more than 50,000 mothers are severely injured during or after childbirth and 700 die, many from preventable complications.

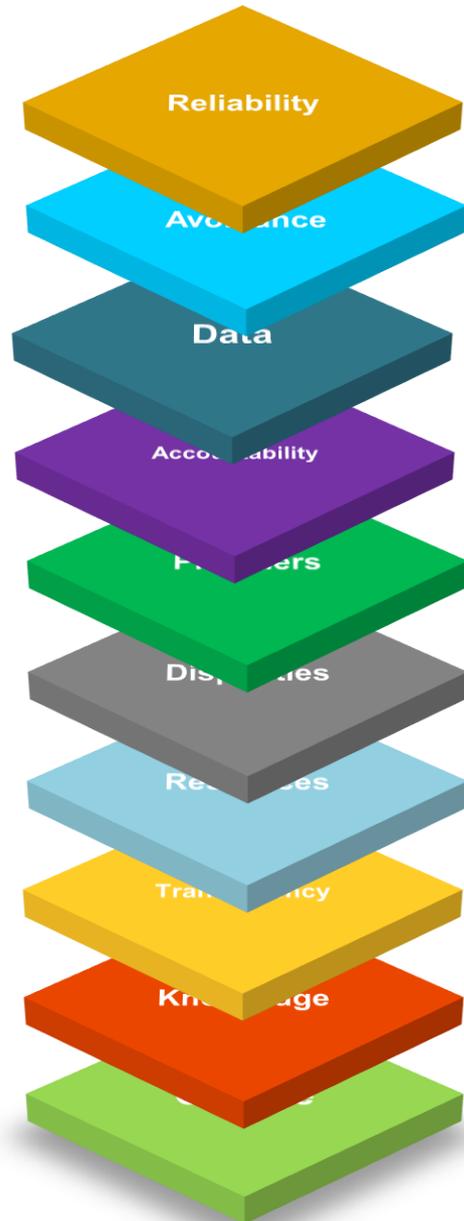
H.R.1318 Preventing Maternal Deaths Act and H.R.315 Improving Access to Maternity Care Act became law 12/18

- Process for reviewing pregnancy-related deaths
- Establish and sustain a maternal mortality review committee
- Ensure that the state department has a plan for ongoing provider education to improve the quality of maternal care, disseminate findings, and implement recommendations
- Provide for public disclosure of information

S.3392 - MOMS Act and H.R.5761 - Ending Maternal Mortality Act introduced 2018

- Pregnancy and postpartum safety and monitoring practices and maternal mortality and morbidity prevention
- To collect and analyze data related to process structure and patient outcomes to drive continuous quality improvement in the implementation of the maternal safety bundles
- Address specific issues relating to maternal mortality and SMM such as public awareness, at-risk populations and disparities, and quality of care

Contributing Causes



-  Variation in care
-  Obstetric risk is too expensive
-  National-level data are often nonexistent
-  Accountability for preventable maternal death and harm
-  Overburdening or a complete absence of obstetric providers
-  Disparities, racial, income, age, location - leading indicators
-  Resource-poor, hospitals, states and patients
-  Free, uninhibited sharing of information
-  Necessary knowledge and preparation for safe practice
-  Evolution, Culture, and the Obstetrical Dilemma



Principles of a Highly Reliable Organization's Mindful Infrastructure

Processes

Preoccupation with Failure

Reluctance to Simplify

Sensitivity to Operations

Commitment to Resilience

Deference to Expertise

Mindfulness

Capability to Discover and Manage Unexpected Events

Reliability





Hospitals?





“How do we implement sustainable change?”

Foundation ~ Developing a Safety Culture

11 Tenets of a Safety Culture

Definition of Safety Culture

Safety culture is the sum of what an organization is and does in the pursuit of safety. The Patient Safety Systems (PS) chapter of The Joint Commission accreditation manuals defines safety culture as the product of individual and group beliefs, values, attitudes, perceptions, competencies, and patterns of behavior that determine the organization's commitment to quality and patient safety.

- 1 Apply a transparent, nonpunitive approach to reporting and learning from adverse events, close calls and unsafe conditions.
- 2 Use clear, just, and transparent risk-based processes for recognizing and distinguishing human errors and system errors from unsafe, blameworthy actions.
- 3 CEOs and all leaders adopt and model appropriate behaviors and champion efforts to eradicate intimidating behaviors.
- 4 Policies support safety culture and the reporting of adverse events, close calls and unsafe conditions. These policies are enforced and communicated to all team members.
- 5 Recognize care team members who report adverse events and close calls, who identify unsafe conditions, or who have good suggestions for safety improvements. Share these "free lessons" with all team members (i.e., feedback loop).
- 6 Determine an organizational baseline measure on safety culture performance using a validated tool.
- 7 Analyze safety culture survey results from across the organization to find opportunities for quality and safety improvement.
- 8 Use information from safety assessments and/or surveys to develop and implement unit-based quality and safety improvement initiatives designed to improve the culture of safety.
- 9 Embed safety culture team training into quality improvement projects and organizational processes to strengthen safety systems.
- 10 Proactively assess system strengths and vulnerabilities, and prioritize them for enhancement or improvement.
- 11 Repeat organizational assessment of safety culture every 18 to 24 months to review progress and sustain improvement.



Safety culture is the sum of what an organization **is** and **does** in the pursuit of safety.

The product of **individual** and **group** beliefs, values, attitudes, perceptions, competencies, and patterns of behavior that determine the organization's **commitment** to quality and patient safety.

“Collective Mindfulness”

Organizational Level

- ✓ Guidelines
- ✓ Checklists
- ✓ Protocols
- ✓ Policies
- ✓ Orders

10%

Culture
Level

90%

Quality Assurance	Quality Improvement
Individual focused	Systems focused
Perfection myth	Fallibility recognized
Solo practitioners	Teamwork
Peer review ignored	Peer review valued
Errors punished	Errors seen as opportunities to learn

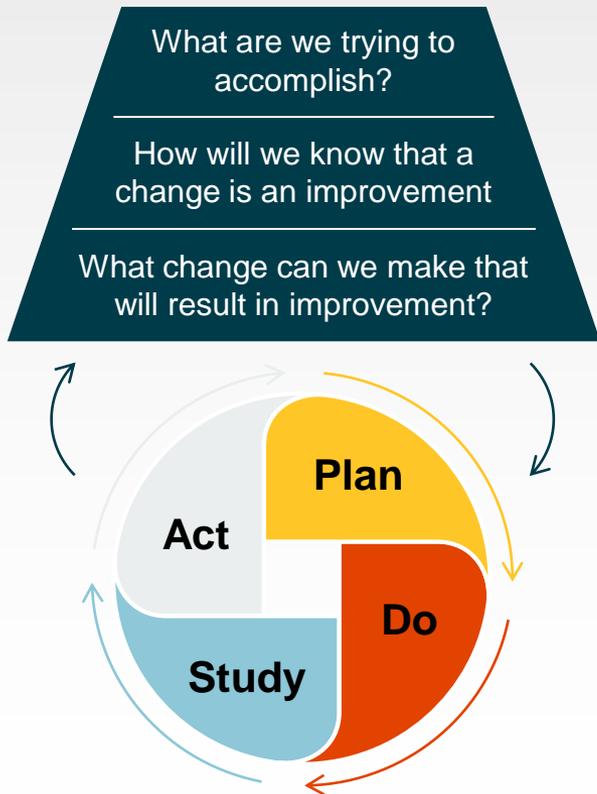
Quality Improvement's key principles:

1. QI work as systems and processes
2. Focus on patients
3. Focus on being part of the team
4. Focus on use of the data

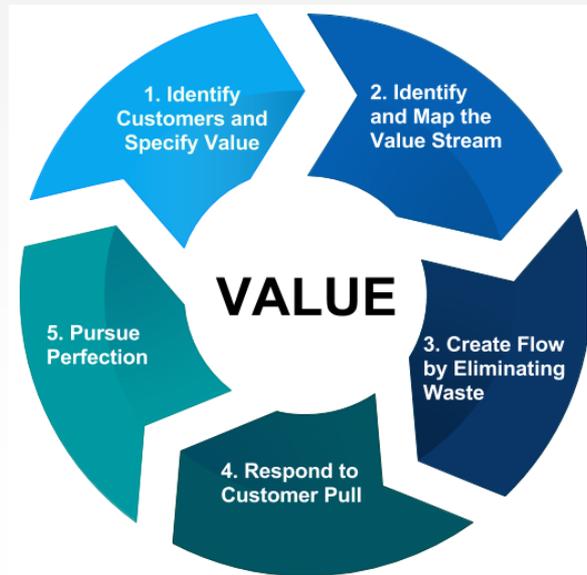
QI Methodologies and Tools: Framework for Change



IHI Model for Improvement



Lean Principles

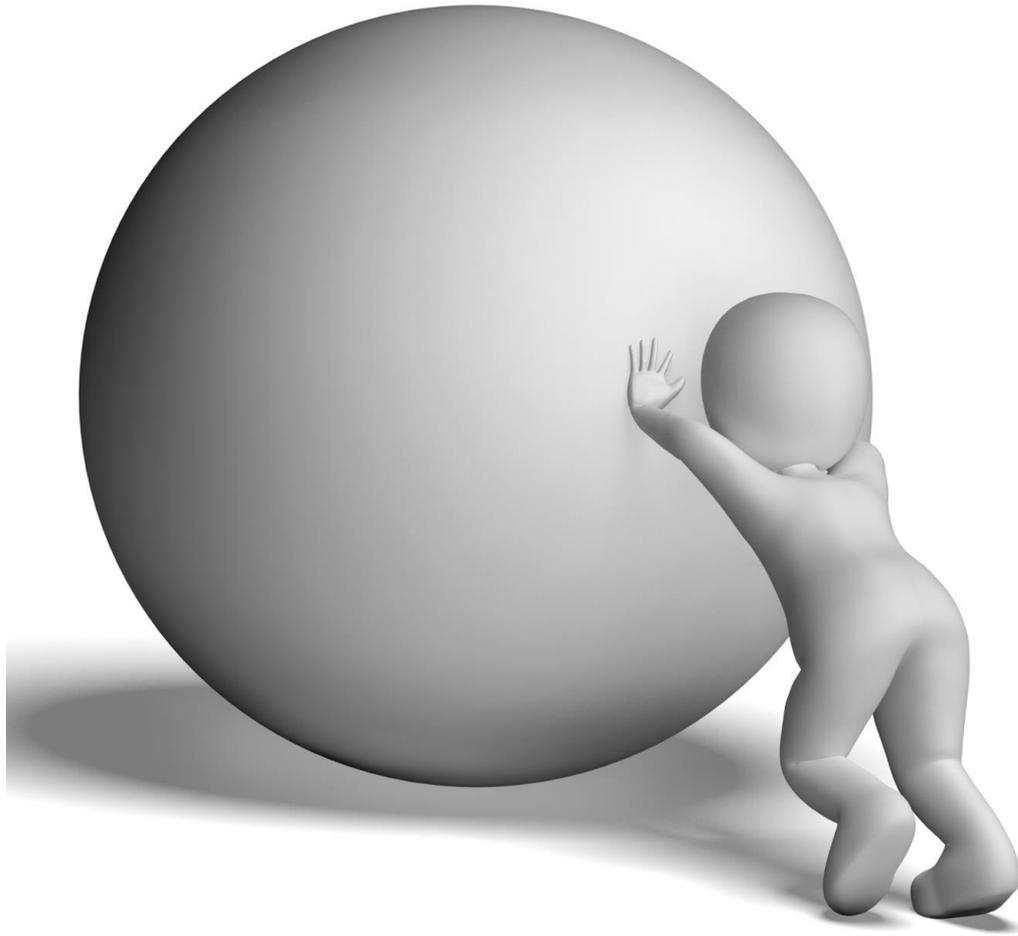


Six Sigma



The Team Approach





The Importance of Leadership Support



Collective Mindfulness

“Everyone who works in the organization, both individually and together, is acutely aware that even small failures in safety protocols or processes can lead to catastrophic adverse outcomes.”



Setting the "AIM": Develop an Action Plan

Form the Team

Set Aims

Establish Measures

Test Change

Implement Change

Spread Change

Sustain Change



READINESS

Every unit

- Hemorrhage cart with supplies, checklist, and instruction cards for intrauterine balloons and compressions stitches
- Immediate access to hemorrhage medications (kit or equivalent)
- Establish a response team - who to call when help is needed (blood bank, advanced gynecologic surgery, other support and tertiary services)
- Establish massive and emergency release transfusion protocols (type-O negative/uncrossmatched)
- Unit education on protocols, unit-based drills (with post-drill debriefs)

RECOGNITION & PREVENTION

Every patient

- Assessment of hemorrhage risk (prenatal, on admission, and at other appropriate times)
- Measurement of cumulative blood loss (formal, as quantitative as possible)
- Active management of the 3rd stage of labor (department-wide protocol)

RESPONSE

Every hemorrhage

- Unit-standard, stage-based, obstetric hemorrhage emergency management plan with checklists
- Support program for patients, families, and staff for all significant hemorrhages

REPORTING/SYSTEMS LEARNING

Every unit

- Establish a culture of huddles for high risk patients and post-event debriefs to identify successes and opportunities
- Multidisciplinary review of serious hemorrhages for systems issues
- Monitor outcomes and process metrics in perinatal quality improvement (QI) committee

PATIENT SAFETY BUNDLE

Obstetric Hemorrhage

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Standardization of health care processes and reduced variation has been shown to improve outcomes and quality of care. The Council on Patient Safety in Women's Health Care disseminates patient safety bundles to help facilitate the standardization process. This bundle reflects emerging clinical, scientific, and patient safety advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Although the components of a particular bundle may be adapted to local resources, standardization within an institution is strongly encouraged.

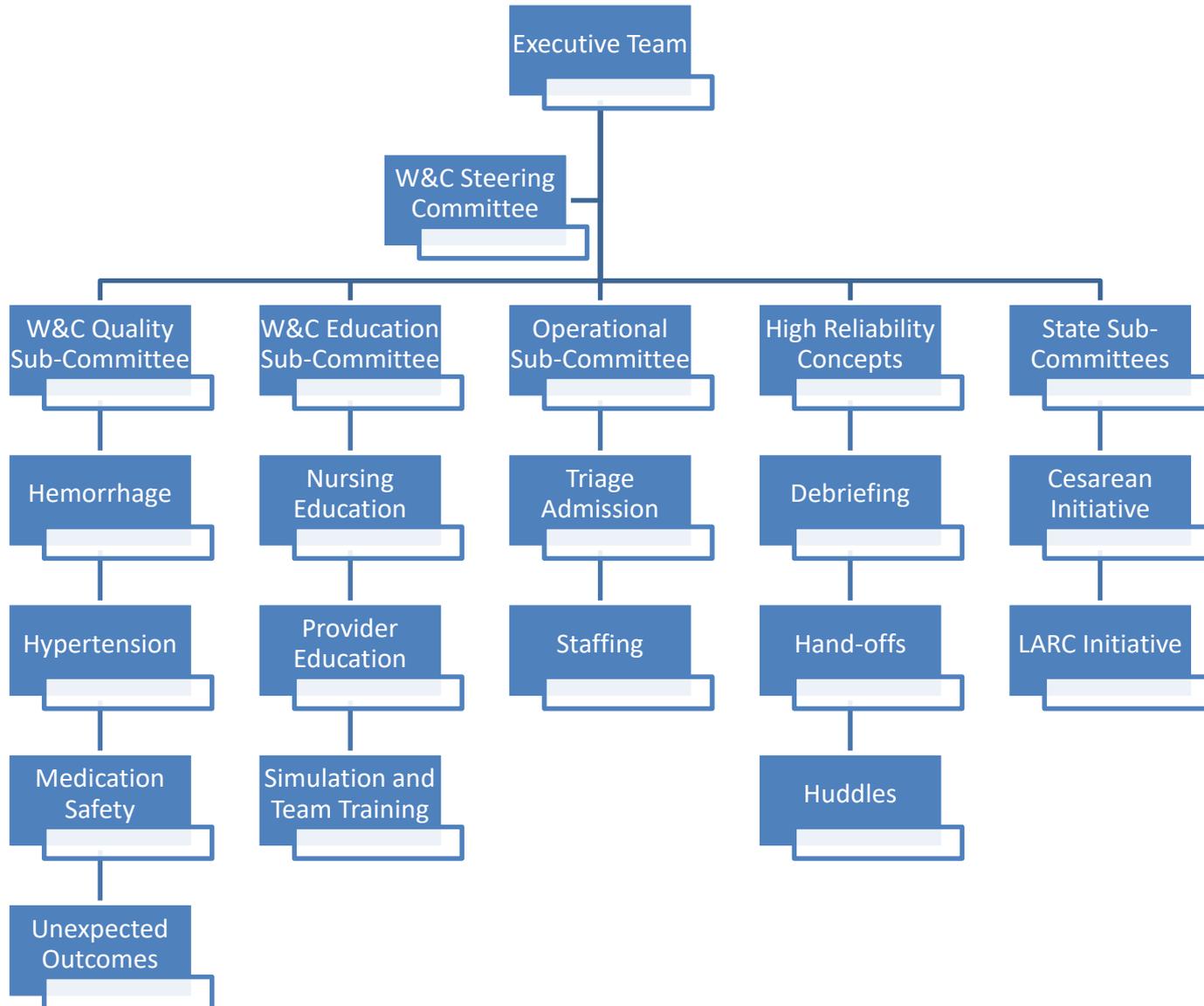
The Council on Patient Safety in Women's Health Care is a broad consortium of organizations across the spectrum of women's health for the promotion of safe health care for every woman.

May 2015

For more information visit the Council's website at www.safehealthcareforeverywoman.org

Work Breakdown Structure / Activities / Tasks	Start Date	Completion Date	Responsible Lead	Task Lead	Additional Organization Resource (s)	Status	Notes & Assumptions	Engagement Weekly Timeline			
								1-Apr	May-19	Jun-19	Jul-19
Overall Plan								PPE	1	2	3
I. Identification of Problem and Current State											
• Assessment of current practices against guidelines											
• Assessment of hemorrhage events											
• Benchmarking data to peer											
• Stake benchmarking site opportunities identified with staff											
• In situ simulation to identify opportunities											
II. SIH Hemorrhage Standardized Care Bundle											
• Establish a standardized reliable method for the multidisciplinary team to follow that is consistent and leads to improved processes and patient outcomes											
• Develop Evidence Based (AIM) Hemorrhage Bundle (see elements below in section III)											
• Development of SIH Hemorrhage Protocol Orset											
• Approval of SIH Hemorrhage Protocol by OB Committee P&T (24) and EPIC (17)											
• EPIC STORK Training of Clinical staff and Physicians											
• Advertising Change Process: Email Screen Shots/Posting on Unit											
• Provider Education on OB Mini Three 22 January											
• Staff Education on (Just in time training: AIM eModule, TXA, Elsevier)											
• Go Live Hemorrhage Bundle Date											
III. Implementation SIH Hemorrhage Care Bundle Key Elements											
Readiness											
• Hemorrhage cart / box with supplies located in L&D and Mother Bays by Units											
• Immediate Access to Hemorrhage Medications											
• Establish a response team - who to call when help is needed (blood bank, advanced gynecologic surgery, other support and tertiary services)											
• Establish massive and emergency release transfusion protocols (type-O negative/uncrossmatched)											
• Unit education on protocols, unit based drills (with post drill debriefs)											
Recognition and Prevention											
• Ongoing Hemorrhage Risk Assessment											
• Quantified Measurement of Blood Loss											
• Active management of the 3rd stage of labor (department wide protocol)											
Response											
• Unit standard, stage based, obstetric hemorrhage emergency management plan with checklists											
• Support program for patients, families, and staff for all significant hemorrhages											
Reporting and System Learning											
• Establish a culture of huddles for high risk patients and post-event debriefs to identify successes and opportunities											
• Multidisciplinary review of serious hemorrhages for systems issues											
• Monitor outcomes and process metrics in perinatal quality improvement (QI) committee											
IV. Education and Accountability: Sustain Successful Process											
• Hemorrhage Bundle: Implement and monitor improvements - First Test of Change											
• Ongoing In Situ Simulation Training											
• Daily rounds on the frontlines directly observing the work that is being done in the operating room											
• Standardized multidisciplinary onboarding education											
V. Monitoring Results and Process											
• Multidisciplinary Simulation and Team Training											
• RN Participation in On Line Education - Readiness											
• RN Participation in Hemorrhage Drills - Readiness											
• Provider Participation in Hemorrhage Drills - Readiness											
• Admission Hemorrhage Risk Assessment - Recognition											
• Post delivery Hemorrhage Risk Assessment - Recognition											
• Quantified Blood Loss - Recognition											
• Postpartum Hemorrhage protocol in place - Reviewed and updated annually											
• Ongoing measurement of Transfusion Per 1000 Births: OE											
• Ongoing measurement of outcome data to address events											

Project Plan Structure



Setting the “AIM”: Assessment of Current State



1. Assess all perinatal service areas

2. Interview leadership, physicians, nursing and supportive staff

3. Review of clinical processes, procedures, orders

4. Team Culture of Safety

Reducing Obstetrical Hemorrhage



- SPECIFIC**
Precisely define where you want to end up
- MEASURABLE**
Must have specific criteria in order to measure progress towards goal
- ATTAINABLE**
Goals should be challenging but not unrealistic
- RELEVANT**
In-line with current efforts and needs of the team and the organization
- TIME-BOUND**
Has clearly defined timeframe, including start date and target end date

Defining and Tracking Quality Measures



- Tracking of progress and *re-adjust* the plan
- Analyze data and present results to clinical teams
- Review steps and when necessary, revise implemented tactics to ensure sustainable results

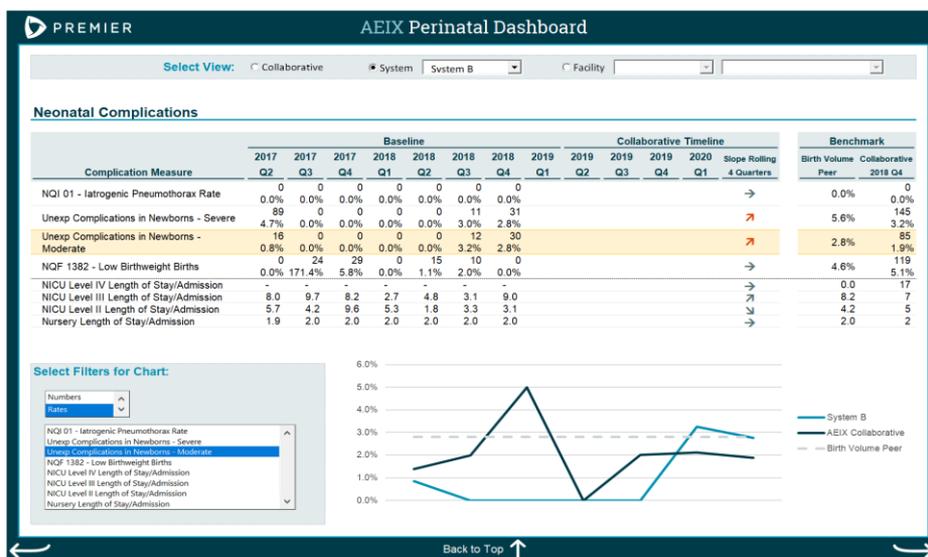
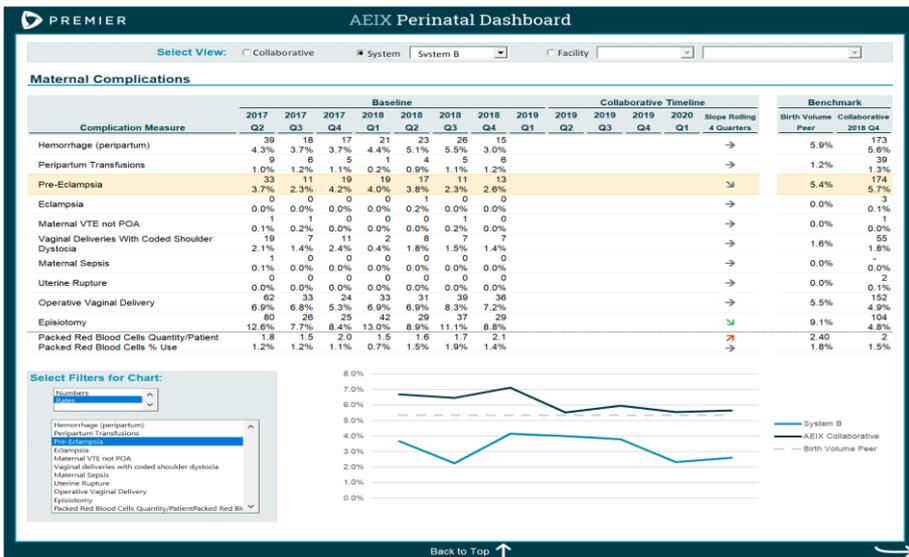
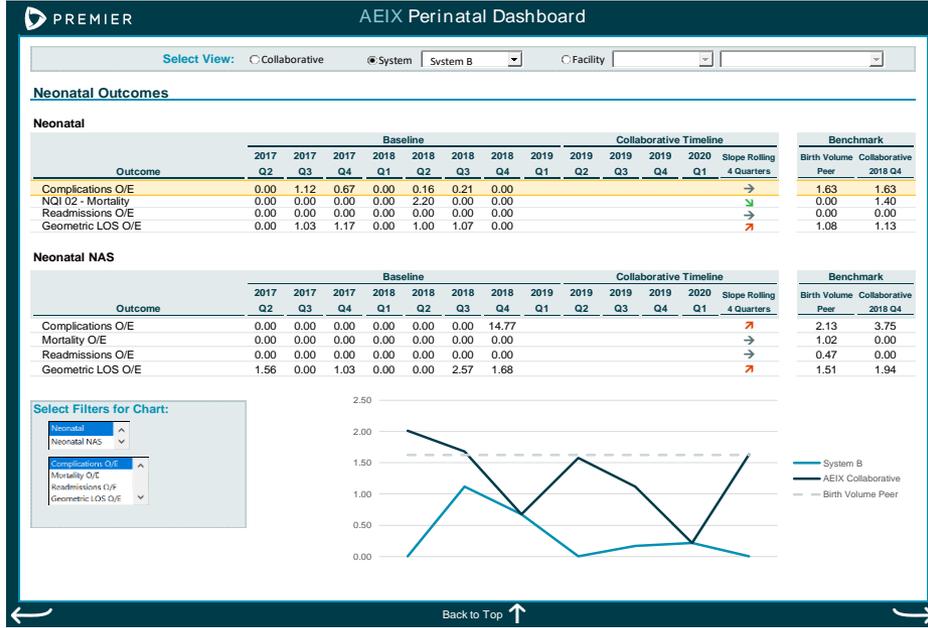
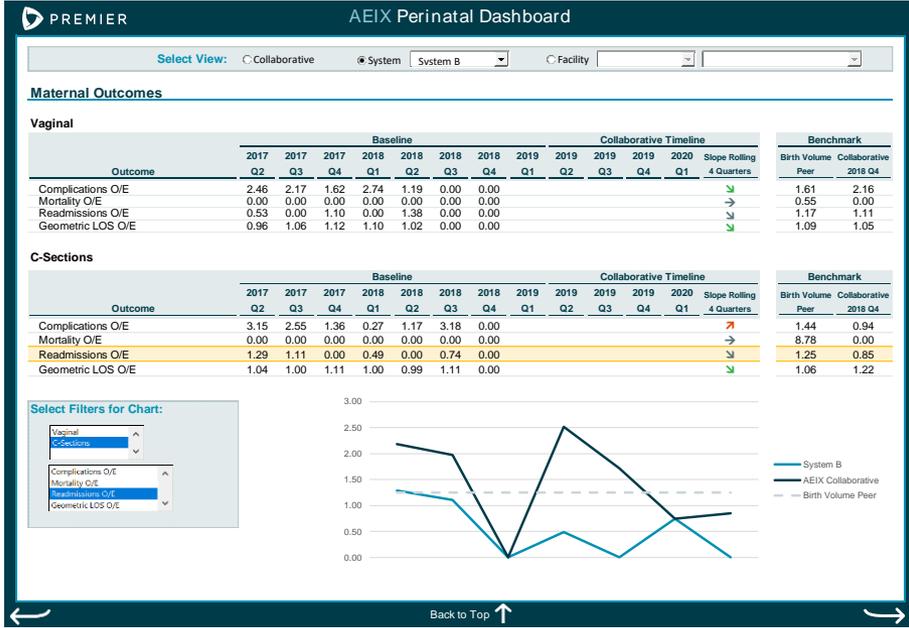




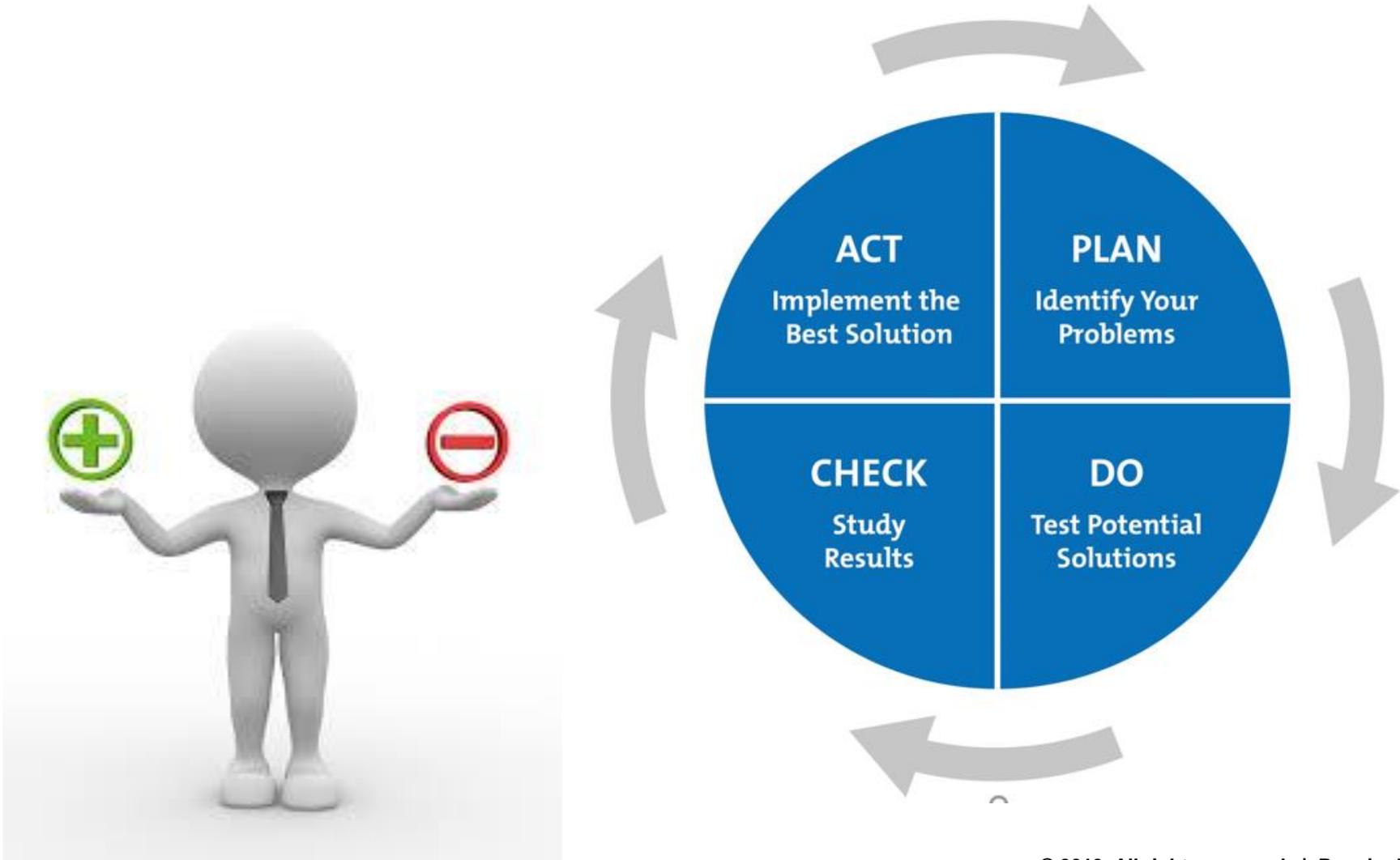
Types of Quality Measures

1. **Structure:** The characteristics of the setting where the care is provided
2. **Process:** What the organization does
3. **Outcome:** The change in the patient's health status as a result of the care received
4. **Balancing:** Ensures that if changes are made to one part of the health care system, it doesn't cause problems for another part of the system

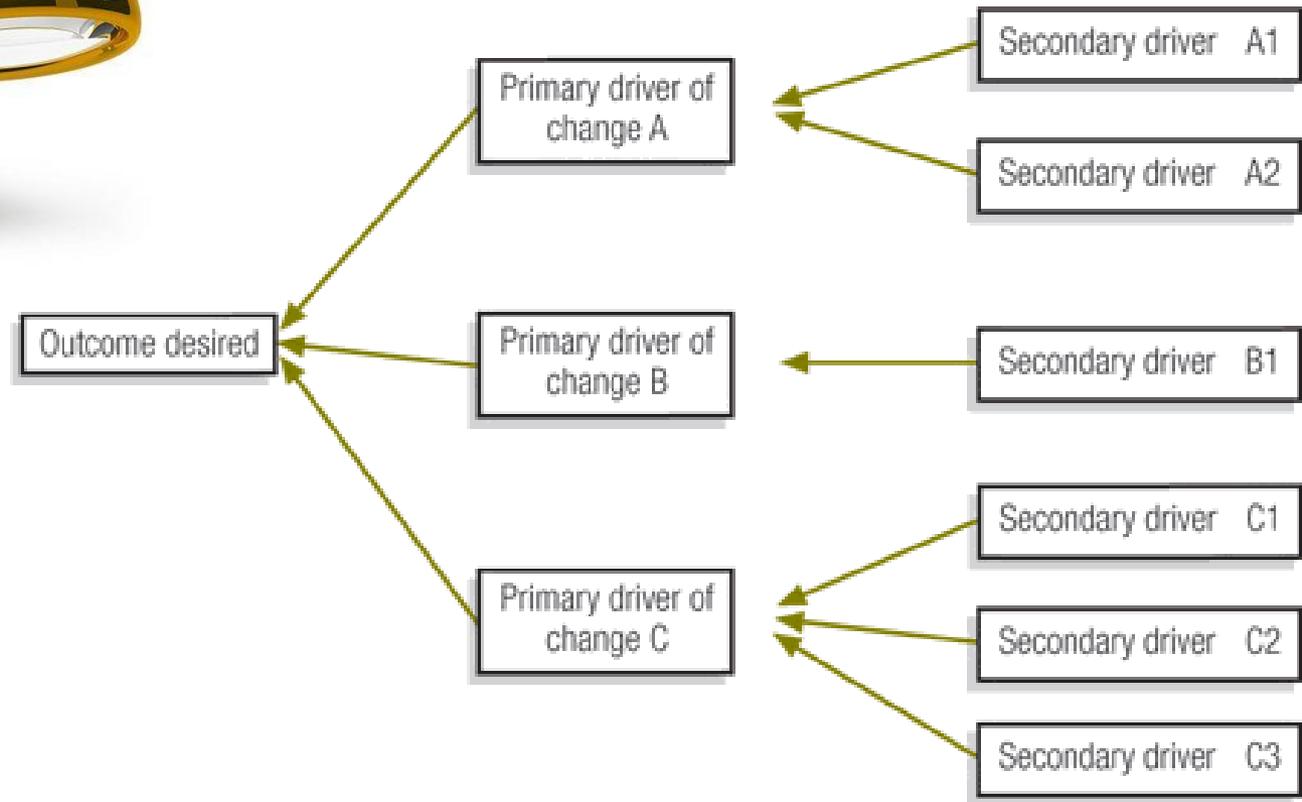
Example: Quality Scorecard Snapshot



Testing Change: PDSA Cycles



Designing Driver Diagrams and Test of Change



Why Test Change Prior to Implementation?

- ✓ Involves less time, money, and risk
- ✓ A powerful tool for learning; from both ideas that work and those that don't
- ✓ Less disruptive for patients and staff
- ✓ Less resistance to change





Implementing Change: Putting Practices into Operation

Form the
Team

Set
Aims

Establish
Measures

Test Change

Implement
Change

Spread
Change

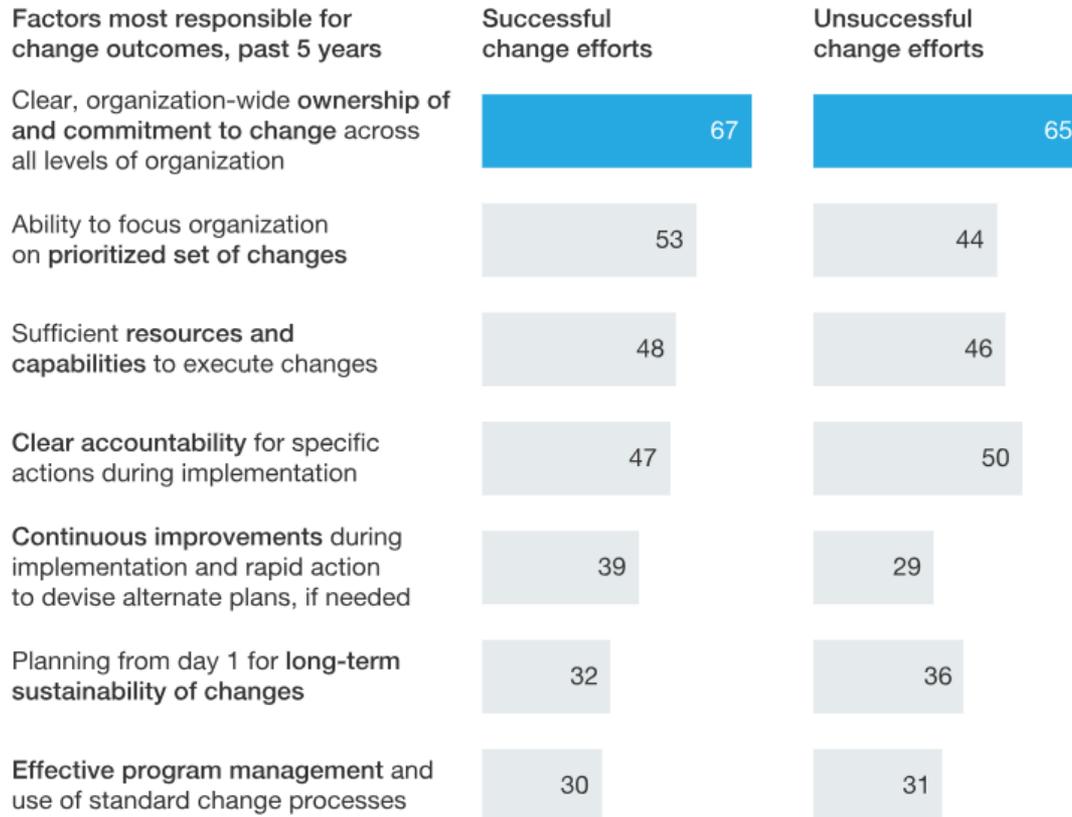
Sustain
Change



Secrets of Successful Change Implementation

The greatest impact on a major change effort's outcome comes from ownership of and commitment to change.

% of respondents,¹ n = 2,079



¹ Respondents who answered "don't know" are not shown.

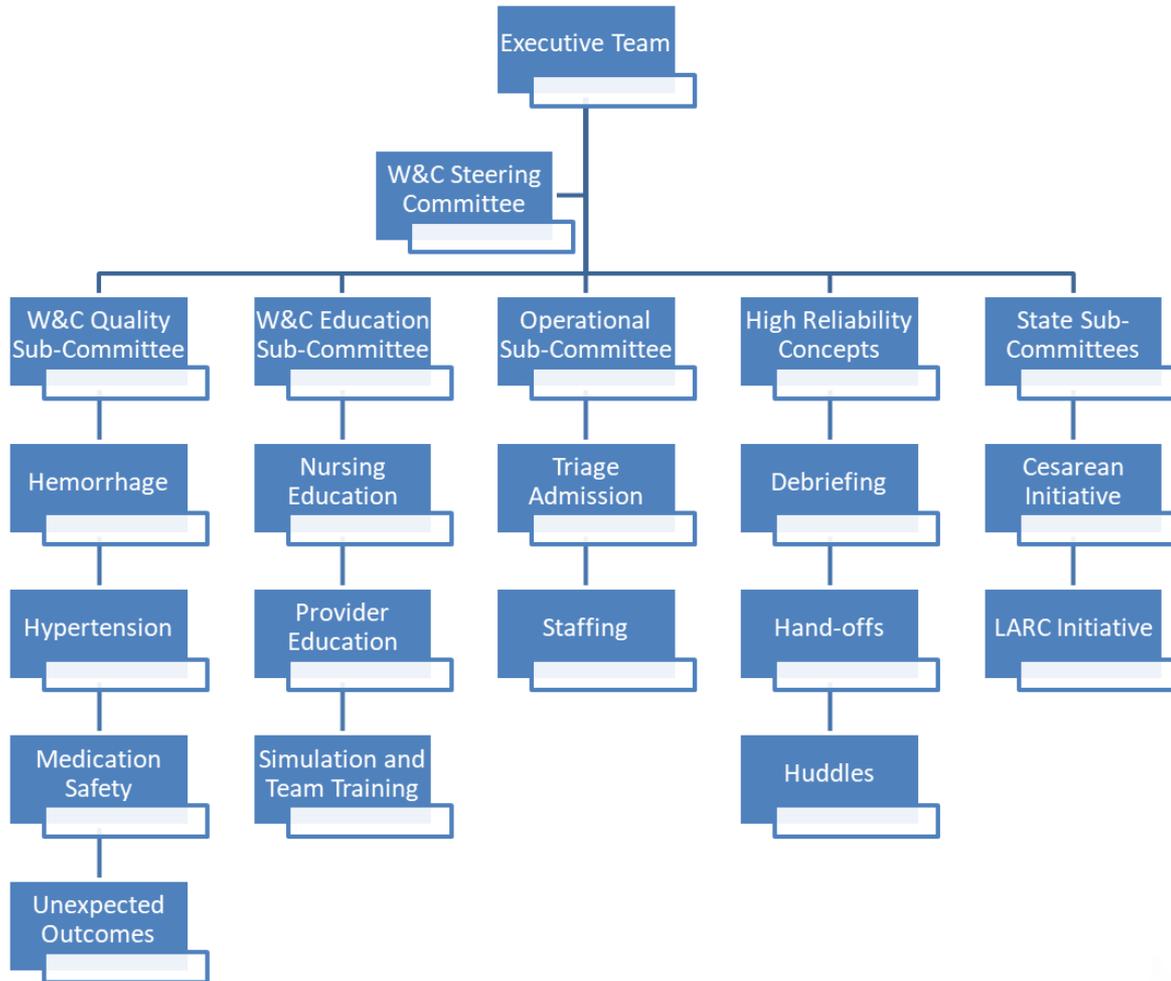
McKinsey&Company



QI Methodologies and Tools: Kotter 8-STEP PROCESS

1. **Create a Sense of Urgency** - Identify the 'why' for change, and be prepared to speak to it
2. **Build a Guiding Coalition** - Collect representative leadership to guide the change
3. **Develop a strategic vision** and plan initiatives
4. **Enlist a Volunteer Army** - Gather staff who can put the plan into action
5. **Remove Barriers** or Obstacles to Change
6. **Generate Short Term Wins** - Begin change efforts and track progress
7. **Sustain Acceleration** - Ensure change is successful and sustainable
8. **Institute Change** - regularly to review and monitor successes, identify and address new challenges, and communicate progress transparently







Discussions cannot begin with talk of contracts and compensation but must focus instead on what is at stake for patients

1. **Discover a common purpose.**
2. Adopt an engaging style and talk about rewards
3. Reframe values and beliefs to turn physicians into partners, not customers
4. Segment the engagement plan and provide education.
5. Use “engaging” improvement methods by using evidence and data
6. Provide backup all the way to the board



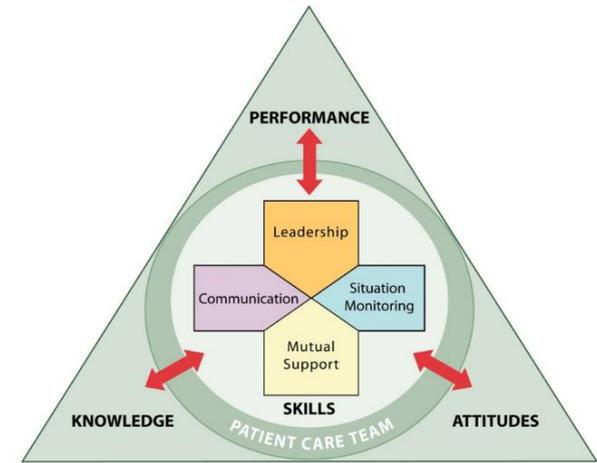
- Provide initial team communications about changes
- Develop collaborative training programs
- Prepare informational and resource documents
- Assess team readiness before the change
- Analyze impact
- Establish an ongoing training structure



Team Dynamics: Team Training and In-situ Simulation

Team Training

- Focus on communication and teamwork skills
- Optimize team safety, efficiency and effectiveness
- Common Labor and Delivery scenarios



In-situ Simulation

- Test of Change
- Common emergency
- Videotaped with constructive debriefings
- Knowledge sharing and analyzing team performance

Challenges and Barriers



Spreading Change - Diffusion of Innovation

Form the Team

Set Aims

Establish Measures

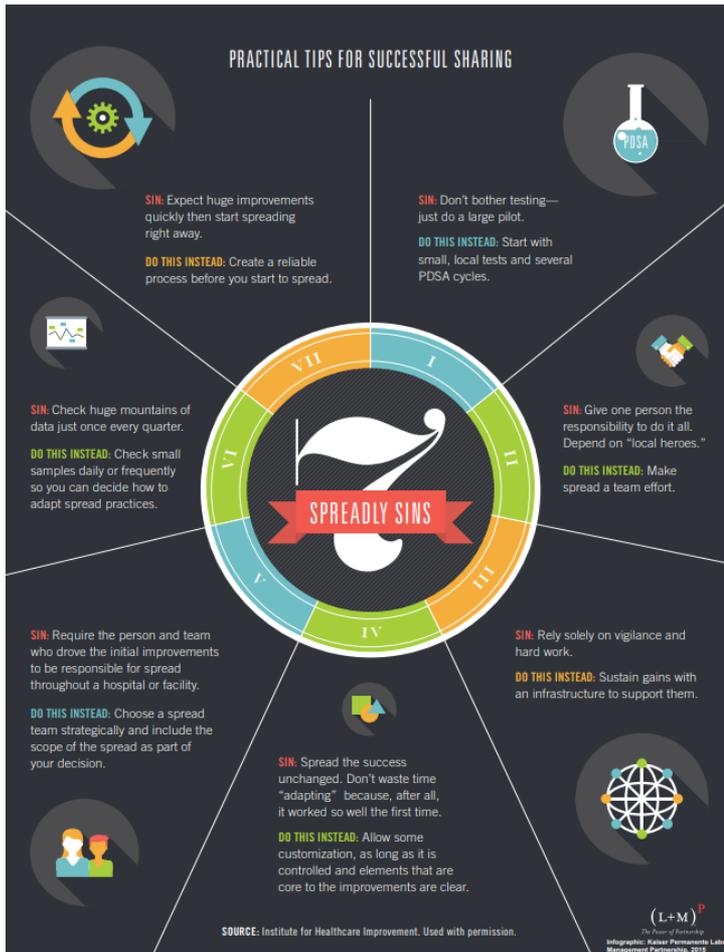
Test Change

Implement Change

Spread Change

Sustain Change

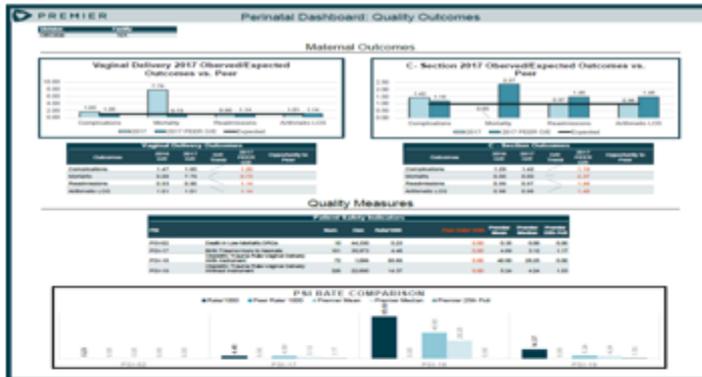
IHI Spreading Changes



Diffusion Key Attributes

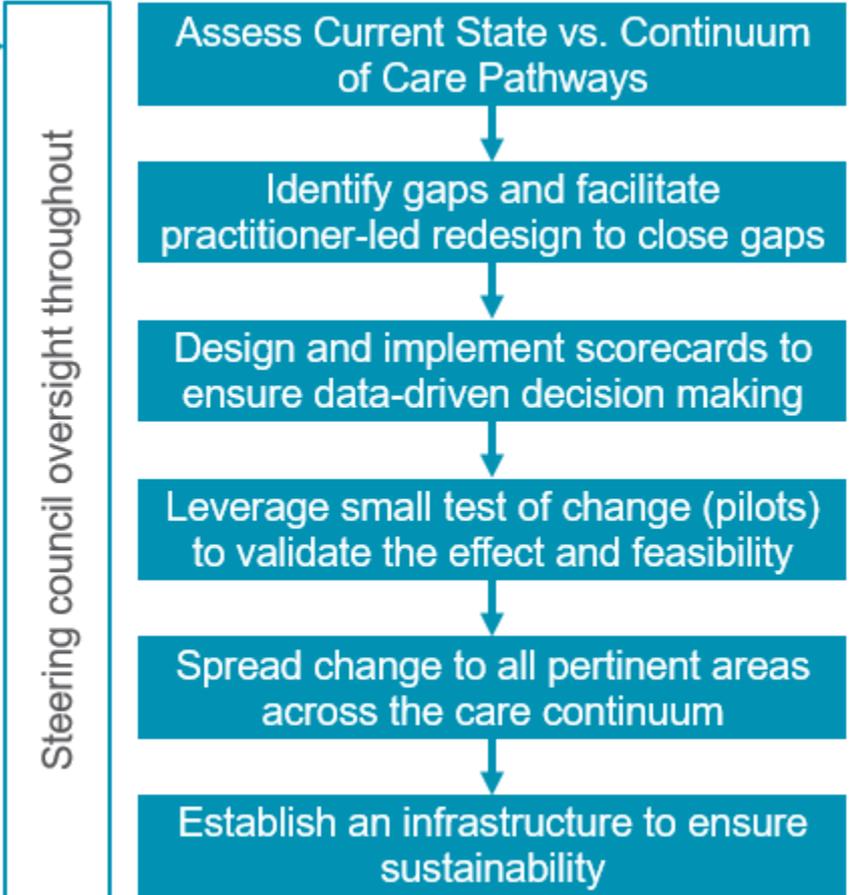
- ✓ **Clear** advantage compared to current ways
- ✓ **Compatibility** with current systems and values
- ✓ **Simplicity** of change and its implementation
- ✓ **Ease of testing** before making a full commitment
- ✓ **Observability** of the change and its impact

Sustainability: Path to Improvement



Using prioritized analytics

REPEAT



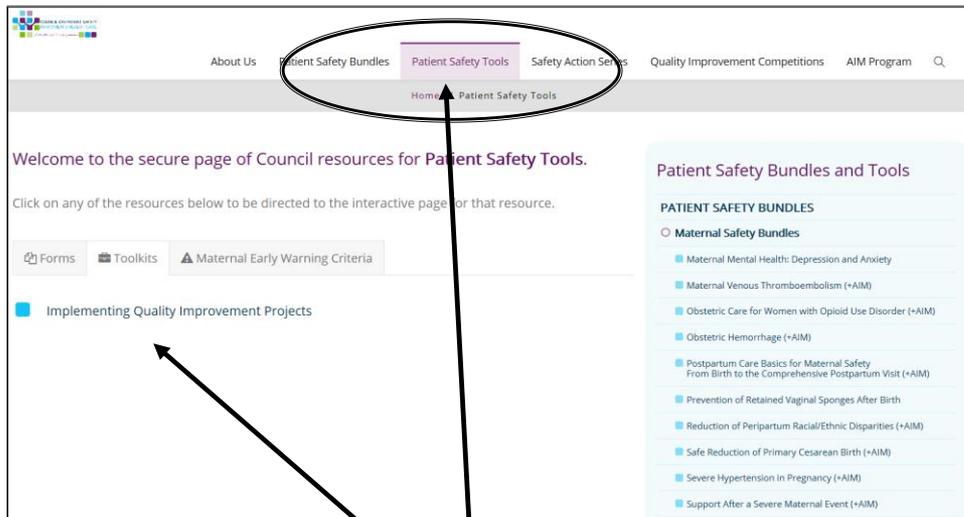


“Without continual growth and progress, such words as improvement, achievement, and success have no meaning.”





Council on Patient Safety Resources



Quality Improvement Toolkit



The cover features the Council on Patient Safety logo at the top left, which includes a colorful geometric design and the text 'COUNCIL ON PATIENT SAFETY IN WOMEN'S HEALTH CARE' and 'safe health care for every woman'. The main title 'Implementing Quality Improvement Projects' is written in a large, purple, sans-serif font. Below it, the word 'Toolkit' is written in a smaller, green, sans-serif font. At the bottom right, the text 'V1 Released May 2016' is displayed in a small, blue, sans-serif font.



Questions



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Premier Performance Partner
Manager, Women and Infants
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Thank You



References and Resources

[Kotter's 8 step Model of Change – Management Study Guide](#)

[Lean Enterprise Institute](#)

[AHRQ High Reliability](#)

[AHRQ Toolkit for Improving Perinatal Safety](#)

[TJC High-Reliability Health Care: Getting There from Here](#)

[IHI uses the Model for Improvement](#)

[MindTools: Management Training and Leadership Training, Online](#)

[Council on Patient Safety in Women's Healthcare Quality Improvement Toolkit](#)

[IHI Prevent Obstetrical Adverse Events](#)

[Applying a Science-Based Method to Improve Perinatal Care: The Institute for Healthcare Improvement Perinatal Improvement Community](#)

[Making Sense of Implementation Theories, Models and Frameworks](#)

Action For Better Healthcare: Premier Inc. Blog:

www.actionforbetterhealthcare.com/

Council on Patient Safety | Women & Mothers' Health Care:

<https://safehealthcareforeverywoman.org/>

The Global Burden of Disease Study:

<https://www.thelancet.com/gbd>

Severe Maternal Morbidity in the United States:

<https://www.cdc.gov>

USA Today, Deadly Deliveries:

<https://www.usatoday.com/deadly-deliveries/interactive/how-hospitals-are-failing-new-moms-in-graphics/>

National Network of Perinatal Quality Collaboratives:

<https://www.cdc.gov/reproductivehealth/maternalinfanthealth/nnpqc.htm>

Review to Action, Report From Nine Maternal Mortality Review Committees:

http://reviewtoaction.org/sites/default/files/national-portal-material/Report%20from%20Nine%20MMRCs%20final_0.pdf