IHI Expedition: Preventing Obstetrical Adverse Events

Deb Bell-Polson, MSN, RNC-OB
Peter Cherouny, MD
Sue Gullo, RN, BSN, MS

These presenters have nothing to disclose

Expedition Coordinator

Kayla DeVincentis, Project Coordinator, has worked at IHI since 2009, starting as an intern in the Event Planning department. Since then, Kayla has contributed to the STAAR Initiative, the IHI Summer Immersion Program, and the IHI Expeditions. Kayla obtained her Bachelor’s in Health Science from Northeastern University and brings her interest in health and wellness to IHI’s Health and Fitness team.
WebEx Quick Reference

- Welcome to today’s session!
- Please use Chat to “All Participants” for questions
- For technology issues only, please Chat to “Host”
- WebEx Technical Support: 866-569-3239
- Dial-in Info: Communicate / Join Teleconference (in menu)

When Chatting…

Please send your message to
All Participants
Our Expedition Director

Sue Leavitt Gullo, RN, BSN, MS, Managing Director, Institute for Healthcare Improvement (IHI), brings 30 years of health care experience to her current roles, which include work in IHI's national and international patient safety work, and IHI's faculty for leadership and patient safety. She is the Director of the Perinatal Improvement Community and The Safer Patient Project in Denmark. Prior to joining IHI, Ms. Gullo was the Director of Women’s Services at Elliot Hospital in New Hampshire. Her prior nursing roles included experience in the frontline clinical areas of maternal-child health, oncology, and medical-surgical nursing. Ms. Gullo has also been active as national faculty in obstetrical care for the last 15 years. Her involvement with IHI dates back to 1995 as a participant in the IHI Breakthrough Series on Improving Maternal and Neonatal Outcomes and continued as IHI faculty until she joined the IHI staff in 2005.

Ground Rules

• We learn from one another – “All teach, all learn”
• Why reinvent the wheel? - Steal shamelessly
• This is a transparent learning environment
• All ideas/feedback are welcome and encouraged!
Schedule of Calls

Session 1 – Introduction to Obstetrical Adverse Events  
Wednesday, May 30, 1:00 PM – 2:30 PM ET

Session 2 – Structure and Process for System Redesign  
Date: Wednesday, June 13, 1:30 PM – 2:30 PM ET

Session 3 – Executing Oxytocin Bundles  
Date: Wednesday, June 27, 1:30 PM – 2:30 PM ET

Session 4 – Designing Reliable Processes  
Date: Wednesday, July 11, 1:30 PM – 2:30 PM

Session 5 – Using the Perinatal Trigger Tool to Identify System Harm  
Date: Wednesday, July 25, 1:30 PM – 2:30 PM

Session 6 – Results Report-out and Advanced Bundles  
Date: Wednesday, August 8, 1:30 PM – 2:30 PM

Faculty

Deb Bell-Polson, MSN, RNC-OB, is a Masters prepared Perinatal Nurse with 22 years of experience. Most recently has worked as a Clinical Nurse Manager leading a multidisciplinary team that has had great success in the IHI Perinatal Community. We had proven results in changing culture for quality and safety and achieving 95% compliance on the Elective Induction and Augmentation bundles as well as the Vacuum Bundle. Also serves on a regional Quality and Safety Network guidelines team that is working to set regional standards for care in the Northern New England region. Is most recently a part of a state wide Committee to review cases of Sudden unexplained infant Deaths and work to prevent them in the future. When not working I keep busy with my family of three sons and a wonderful husband.
Faculty

Peter Cherouny, MD, Professor of Obstetrics and Gynecology, University of Vermont College of Medicine, has strong clinical interests in obstetric health care quality improvement and is currently serving as Chair of the Institute for Healthcare Improvement's Perinatal Improvement Community. He was also the lead author of the IHI white paper, "Idealized Design of Perinatal Care." He has been Chair of Quality Assurance and Improvement and Credentialing for the Women's Health Care Service of Fletcher Allen Heathcare for the last 15 years. His recent research and work in obstetric quality improvement is as Chair of the March of Dimes collaborative, "Improving Prenatal Care in Vermont," and as co-investigator of the MedTeams project.

Perinatal Trigger Tool
Perinatal Measurement - The Chasm

- No consensus nationally - no mandatory reporting at this time (that may be changing with CMS)
- Administrative Data Set versus Record Review.
- Combination of all methods? Resource utilization vs. a correct balance.

**IHI has chosen the Perinatal Trigger Tool for its harm outcome measure**

Conventional Serious Event Identification

- Voluntary Reporting
- Retrospective or concurrent bedside reviews
- Abstraction of events from observational databases
Identification of Patient Harm

Direct Chart Review- Use of Trigger Tools

Adverse Events Detected by Clinical Surveillance on an Obstetric Service

Alan J. Forster, MD, FRCPC; Irene Fung, Sharon Caughey, MD, FRCPC,
Lawrence Oppenheimer, MD, FRCPC; Cathy Beach, Kaveh G. Shojania, MD,
and Carl van Walraven, MD, FRCPC, MS.

OBJECTIVE: Adverse events are adverse patient outcomes resulting from medical care. We performed this study to estimate the rate of adverse events and potential adverse events—errors that have a high likelihood of causing patient harm—occurring during obstetric care.

METHODS: This was a prospective cohort study of an obstetric unit in a teaching hospital. We included patients admitted consecutively to the hospital. A trained observer monitored patients for 72 triggers, which were predefined occurrences deemed likely to indicate an potential adverse events were most commonly “system” problems, such as unavailable staff or operating rooms, or poor fetal outcomes, such as trauma to the newborn.

CONCLUSION: Serious adverse events occur infrequently on an obstetric service. However, important quality problems are common and should be targeted for improvement.

(Clinical Practitioner 2006;50:1073–80)
LEVEL OF EVIDENCE: II-2
Despite these encouraging findings, we did observe that 5% of patients experienced an important quality problem (i.e., an adverse event or potential adverse event). These occurrences concern us because many had the potential to cause severe harm to the mother or baby or both. It is even more worrying that 87% of these quality problems were due to errors (preventable adverse events and potential adverse events). System problems such as poor team work, protocol violations, and staff unavailability appear to be the most important types of problems, whereas technical proficiency and therapeutic decision making seem relatively less important.

Methodology and rationale for the measurement of harm with trigger tools

R K Resar, J D Rozich, D Classen

The growing recognition of harm as an unwelcome and frequently unrecognized byproduct of health care has initiated focused efforts to create highly reliable organizations for safe healthcare delivery. While debate continues over the exact magnitude of harm, there is a general acceptance of the need to improve our ability to deliver care in a safer manner. A major barrier to progress in safety has been the ability to effectively measure harm consistently and thus develop effective and targeted strategies to prevent its occurrence. This has resulted in a shift from initiatives focused exclusively on analysis of errors to those targeting events linked to harm. There is a growing recognition of a distinction between harms and adverse events as they often represent unique concepts fostering different strategies for improvement of safety. Conventional approaches to identifying and quantifying harm such as individual chart audits, incident reports, or voluntary administrative reporting have often been less successful in improving the detection of adverse events. As a result, a new method of measuring harm—the trigger tool—has been developed. It is easily customized and can be readily taught, enabling consistent and accurate measurement of harm. The history, application, and impact of the trigger tool concept in identifying and quantifying harm are discussed.

**INSTITUTE FOR HEALTHCARE IMPROVEMENT**

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*Distinction between errors and adverse events*
Detection of adverse events in surgical patients using the Trigger Tool approach

F A Griffin, D C Classen

ABSTRACT
Background: Most studies of healthcare complications identify surgery as a major contributor to the overall burden of complicated care that leads to injury or death. Indeed, surgical adverse events account for one-half to three-quarters of all adverse events in these studies. Despite the intensive current focus on improving medical quality and safety, only a minority of quality improvement efforts are focused on surgery. This study reports on the development and testing of a Trigger Tool to detect adverse events among patients undergoing inpatient surgery.

Methods: Rather than relying on traditional voluntary reporting for safety outcome measures such as incident reporting, a new decision-support methodology and methodology is described. The IH Institute for Healthcare Improvement (IH) has employed a new method for the detection of surgical adverse events (SAEs). This approach, commonly referred to as the “Trigger Tool,” identifies adverse events using a form of retrospective record review that has been developed and implemented in many areas of care.

Results: During a 12-month IH Perioperative Safety Collaborative, 11 hospitals voluntarily submitted data from surgical inpatient record reviews. In 654 patients, 138 SAEs were detected in 125 records for a rate of 16 SAEs per 100 patients or 14.6% of patients; 61 (44%) of these events contributed to increased length of stay or readmission and 12 (8.7%) events required life-saving intervention or resulted in permanent harm or death. Hospital review teams reported variability that most of the events (78%) were either not previously recorded or had not been detected or reported via existing mechanisms.

Conclusions: The IH Surgical Trigger Tool may offer a practical, easy-to-use approach to detecting safety problems in patients undergoing surgery; it can be the basis not only for assessing the frequency of adverse events in an organisation, but also determining the impact of interventions that focus on reducing adverse events in surgical patients.

THI Global Trigger Tool for Measuring Adverse Events
Second Edition

Authors:
Frances A. Griffin, RRT, MPA: Director, IH
Roger K. Ross, MD, Senior Fellow, IH
Harm vs. Error

By concentrating on the events actually experienced by patients, a hospital can begin to foster a culture of safety that shifts from individual blame for errors to comprehensive system redesign that reduces patient suffering.

To address the clear need to quantify adverse patient outcomes, the IHI Global Trigger Tool focuses on the identification of harm or injury to the patient.
The IHI Global Trigger Tool includes all adverse events—that is, events which are unintended consequences of medical care, whether preventable or not.

Review Team

- 2 Primary Review Nurses, 1 Physician overseer
- 20 random records per month
- No more than 20 minutes per record
Determination of an Adverse Event

• Documentation that the patient experienced harm from medical care should be present for an adverse event
• In determining whether an adverse event has occurred, consider that an adverse event is defined as unintended harm to a patient from the viewpoint of the patient

METHODS

The Trigger Tool methodology is designed for retrospective review of a random sample of closed (abstraction completed) patient records using a list of “triggers”—items in the record that serve as clues to a possible adverse event, defined as unintended physical injury from medical care.

Reviewers are not expected to read the record from front to back; they are instructed to look solely for triggers, and to spend no more than 20 min per record. The presence of a trigger (“positive trigger”) does not necessarily indicate that an SAE has occurred; rather, a reviewer’s discovery of an SAE “triggers” a check on other portions of the record to determine whether an SAE has occurred.
The distinguishing characteristic of an adverse event, according to this methodology, is that it is an unintended consequence of the medical care the patient received, not part of the natural progression of disease.

All adverse events meeting this description that are discovered during review are counted, regardless of whether specific triggers led to their detection.

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**Categories for Harm**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category E</td>
<td>Temporary harm to the patient and required intervention</td>
</tr>
<tr>
<td>Category F</td>
<td>Temporary harm to the patient and required initial or prolonged hospitalisation</td>
</tr>
<tr>
<td>Category G</td>
<td>Permanent patient harm</td>
</tr>
<tr>
<td>Category H</td>
<td>Intervention required to sustain life</td>
</tr>
<tr>
<td>Category I</td>
<td>Patient death</td>
</tr>
</tbody>
</table>
Trigger Tool Impact on Care

Perinatal Teams

Perinatal Community Results

Positive Triggers n=25
Top Ten from Results

Positive Triggers to Harm
T22- Other

- Majority fetal related injury
- Readmission for mother
- Shoulder Dystocia
- Cesarean Section

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Yes/ NO</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>T1 Apgar less than 7 at 5 min</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T2 Admission to NICU and &gt; 24 hours</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T3 Maternal/ Neo Transport</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T4 Terbutaline</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T5 Naloxone</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T6 Infant Serum Glucose &lt;50</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T7 3d or 4th degree Laceration</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T8 Prolonged Decels</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T9 Blood Transfusion</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T10 Platelet count &lt;50,000</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T11 Abrupt medication stop (eg. Epidural)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T12 Hypotension/ Lethargy (Mom OD on Mag Sulphate)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T13 Transfer to higher level of care</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>T14 Unplanned return to Surgery</td>
<td>X</td>
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Using the Trigger Tool to Assess Harm

27 yo P-0- at 39+2 admitted for elective induction of labor
Ultrasound confirmation of gestational age at 10 weeks
Antenatal testing normal except elevated Downs Syndrome risk on screen
Further testing declined
Three hour delay in starting induction due to lack of personnel on busy LD

On admission, minimal contractions, EFW 3000 gms, Cat I FHT
Cervix-2/50/-1/firm/mid position

One dose misoprostol, resulting in tachysystole, followed by oxytocin after resolution of tachysystole
Epidural at 3 cm, persistent hypotension resulted with mild fetal bradycardia x 12 minutes.
Oxytocin off and on several times during persistent hypotension finally resolved after 3 doses ephedrine and IV fluids.
Using the Trigger Tool to Assess Harm

Progress to 7-8 cm after 14 hours
Persistent OP fetal position
Low grade fever for 2 hours (38.1)
To Cesarean section
Delivered 2950 g female, 5/8 Apgars, Art pH 7.14
EBL 1200 ml, high dose oxytocin and misoprostol administered with success

Postpartum
Febrile day 2, treated with 48 hours antibiotics
Breastfeeding difficult due to slow milk production
Discharged day 5

Neonatal
NICU for 30 hours for infection rule out and TTN
Discharged with mother

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<td>T15 Estimated Blood Loss &gt; 500ml</td>
<td>x</td>
<td>C/S blood loss 1200</td>
</tr>
<tr>
<td>T16 Specialty Consult</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>T17 Admin of Oxytocic Agents Post Delivery</td>
<td>x</td>
<td>“double dose” oxytocin and misoprostol</td>
</tr>
<tr>
<td>T18 Instrumented Delivery</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>T19 Administration of General Anesthetic for Delivery</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>T20 Cord Gases Ordered</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>T21 Gestational Diabetes</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>T22 Other</td>
<td>x</td>
<td></td>
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</table>

Total Adverse Events: T2, T8, T11, T12, T15, T17, T20, T22

Harm: Category E, F, G

Questions?

Raise your hand

Use the Chat
Storyboard Project

• Homework assignments for each call will build on each other to create a “storyboard” to present your progress.

Storyboard Explanation

• **Intent**: use this as an active tool over the year to describe your work plan and improvements - successes and barriers - and share your learning. Although you may not have all of the measures currently in place, we have included all of them in this template.

• “**Building**” **storyboard**” as you create the infrastructure to achieve your aim, you will continuously expand this template to share your journey.

• See notes on each slide for description of content.
Homework for Next Session

• Complete a trigger tool review on a sample of 20 term (37-41 weeks) Moms and Babies

• Update your storyboard
  —Complete as much as possible

Results Report-Out

Volunteers?

Storyboard Due August 1st
Expedition Communications

• If you would like additional people to receive session notifications please send their email addresses to improvementmap@ihi.org.

• We have set up a listserv for the Expedition to enable you to share your progress. To use the listserv, address an email to OBExpedition@ls.ihi.org.

Next Session

Session 6 – Results Report-out and Advanced Bundles

Date: Wednesday, August 8, 1:30 PM – 2:30 PM