Today’s Host

Lizzie Grimm, Project Assistant, Institute for Healthcare Improvement
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
Tracy Jacobs, BSN, RN, Director, Institute for Healthcare Improvement (IHI), currently directs IHI's work with Improving Patient Care, a wide-reaching improvement program within the Indian Health System, and the ongoing “Achieving Excellence in Primary Care” call series. She has worked on several large IHI collaborative improvement projects, including the Transforming Care at the Bedside inpatient-focused initiative and a ten-year collaborative initiative with the Health Resources and Services Administration's Federally Qualified Health Centers focused on improving chronic disease and preventive care services for the nation's underserved populations. Ms. Jacobs has 12 years of experience in health care quality improvement.
Today’s Agenda

- Check-in on Homework from Last Session
- Topic: Measurement of Adverse Events
- Homework for Next Session
Our Intent – Overall Program Aim

- Understand the discipline of patient safety and its role in minimizing the incidence and impact of adverse events, and maximizing recovery from them
- Create a culture of safety amongst frontline healthcare teams that protects all
- Active participants/homework assignments
- Applying the theory in practice
- Sharing the learning
Expedition Objectives

At the end of the Expedition each participant will be able to:

- Describe background and context of patient safety
- Identify tools which will help to improve communication and teamwork, essential to building culture
- Apply a range of simple tools and improvement methods for engaging staff in improving patient safety and measuring improvement
- Identify strategies for managing conflict management, including: appropriate assertion and critical language
- Describe strategies for involving patients and family members in preventing harm
Schedule of Calls

Session 4 – Measurement of Adverse Events
Date: Thursday, April 11, 1:00 PM – 2:00 PM ET

Session 5 – Tools and Techniques for the Frontline Staff
Date: Thursday, April 25, 1:00 PM – 2:00 PM ET

Session 6 – Engaging Patients and Families in Preventing Harm
Date: Thursday, May 9, 1:00 PM – 2:00 PM ET
Annette J. Bartley RGN, BA (Hon) MSc, MPH, Programme Director, The Health Foundation's Safer Patient Network, UK, is a registered nurse with over 30 years of health care experience. In 2006 she was awarded a one-year Health Foundation Quality Improvement Fellowship at the Institute for Healthcare Improvement, during which time she also completed an MPH at Harvard University. Ms. Bartley was faculty lead for the Welsh pilot of Transforming Care at the Bedside (TCAB) and now advises the Welsh Assembly Government as TCAB spreads across Wales. She is a founding member of the Welsh Faculty for Healthcare Improvement and serves as faculty for the IHI TCAB Collaborative, the Wales 1,000 Lives plus Transforming Care programme, the South West Quality and Patient Safety Improvement programme, the National Tissue Viability pressure ulcer prevention pilot programme for Quality Improvement Scotland, and the Kings Fund hospital pathways programme.
Meet as a team and consider how you currently measure adverse events /harm in your unit/ department/ organization.

What tools do you use?
Who collects the data?
Who analyses the data?
How timely is feedback?
Who develops any required action plans?
Is the data locally owned?
Work for Action Period (cont)

The elevator speech

- Imagine you have just walked into the elevator with your chief executive officer
- You want to share your patient safety project with them and seek their support
- Succinctly describe your patient safety project within 2 minutes
- Incorporate the overall purpose of what you are doing, the key aims and objectives, and details of the actions.
- Seek support for what you need
- Practice – to ensure you share the key message and make the maximum impact in a short
Has Anyone Tested Any of Following?

- Elevator speech
- SBAR
- ISBARD- Introduction and discussion
- CUSS
- Safety Huddle
- Briefings /Debriefings
- Safety Cross
Measurement of Adverse Events
Session Objectives

By the end of this session participants will be able to:

• Define harm, error and adverse events
• Identify a range of methods and tools for measuring harm
• Develop strategies for measuring harm
• Analyze and utilize the data to reduce harm, prevent adverse events in the clinical setting and improve patient safety
Harm

Every system is perfectly designed to produce the results it gets
Paul Batalden

- We have systems of care designed to produce certain levels of harm
- In many cases these levels of harm have become acceptable as a property of the system
- All harm is theoretically preventable
Make the Connections

- Improvement in health care quality and safety can be notable when measurement criteria are clear, evidence is strong, and policy and interventions are focused.
- Leaders need supplemental streams of information to support them to identify patient safety issues and to guide appropriate action.
Why Measure Harm?

- The underpinning philosophy of healthcare is to ‘first do no harm’, and therefore an indication of the level of harm already in a system (baseline) and a measure of the impact of changes on the amount of harm in that system is vital.

- Secondly, if you are to improve a process and thus reduce harm you need to understand both the level of harm already in the system and also the nature of the problem, namely what is the type of harm and where is it occurring?
Understand Why You Are Measuring

Research?  Judgment?  Improvement?

The answer to this question will guide your entire quality measurement journey!
Consider the Underpinning Principles

- Acknowledge the scope of the problem in your unit/department/organization and make a clear commitment to developing change systems.
- Recognize that most harm is caused by bad systems and not bad people.
- Acknowledge that improving patient safety requires everyone on the care team to work in partnership with one another and with patients and families.
Be Clear About the Terminology

- The terms harm, error and adverse events are often used interchangeably.

- Harm is an outcome that affects a patient's health and or quality of life.

- An Adverse event is an event which results in unintended harm to the patient and is related to the care and or services provided to the patient rather than the patient's underlying medical conditions.

Canadian Disclosure Guidelines
IHI Definition of Harm

Unintended physical injury resulting from or contributed to by medical care that requires additional monitoring, treatment or hospitalization, or that results in death.
Accepting the Harm Burden

Adverse Event vs. Error

- The “Error” definition bears upon concept of preventability, and is therefore process-focused
- “Adverse event” describes harm to the patient, and is thus outcome focused
- Relationship between errors and adverse events:

![Diagram showing the relationship between errors, adverse events, and mortality. Adverse events are a subset of errors, and both contribute to mortality.]
Errors:

- Failure of a planned action to be completed as intended
  - Error of execution
- Use of a wrong plan to achieve an aim
  - Error of planning
An adverse event is harm to the patient from the viewpoint of the patient

Ask yourself

“Would I be happy if the event happened to me?”
Components of Reducing Harm

1. Measuring Harm
2. Understanding Causes
3. Identifying Solutions
4. Evaluating Impact
5. Translating Evidence into Safer Care
What Are You Trying to Accomplish?

- Reduce adverse events on unit A by…% by April 2013
- Reduce adverse event across hospital B by Dec 2013.
- Reach 95% Harm free care as defined by four specific harms (VTE, HAPU, CAUTI, Falls) by March 2014
- We need to be able to understand where harm lies first and then understand whether the changes we make result in improvement?
Moving Your Dot

- It won’t happen if…
  - You quietly contemplate the findings and keep the information to yourselves
  - You only use the information to report

- It requires a deeper understanding of harm

- And… appropriate & timely action
Events per 1,000 Days

Events per 1,000 Days

Date
June-Sept 04

Events/1000 Days

Events/1000 days

0
20
40
60
80
100
120

Jul-04
Aug-04
Sep-04
Oct-04
Nov-04
Dec-04
Jan-05
Feb-05
Mar-05
Apr-05
May-05
Jun-05
Jul-05
Aug-05
Sep-05
Oct-05
Nov-05
Dec-05
Jan-06
Feb-06
Mar-06
Apr-06
May-06
Jun-06
Jul-06
Aug-06
Sep-06
Understanding Harm

- Staff Incidence/event Reporting
- Root Cause Analysis
- Serious Incident Review
- Global Trigger Tool
- Mortality Reviews
- Patient Feedback
- Data for Improvement
Adverse Events in British Hospitals: a Preliminary Retrospective Record Review
Vincent C et al BMJ 2001;322:517-519

- Review of 1014 medical and nursing records
- 110 (10.8%) experienced an adverse event
- 46% were judged preventable
- A third of the adverse events led to moderate or greater disability or death
- Each led to an average 8.5 additional days in hospital
- Additional direct costs of £290,268
- Extrapolated to the whole of the UK:
  - 3 million bed days (potentially £1 billion) lost to adverse events
Adverse Event / Incident Reporting

- Traditional reporting of errors, incidents, or events does not reliably occur in the best of cultures in healthcare.
- Voluntary methods frequently underestimate events and concentrate on what is interpreted as being preventable.
- Tools like the Global Trigger Tool easily identify events without complex technology.
- Can be integrated into a good sampling methodology.
Incident reporting - Root Cause Analysis

**Pro’s**

- A rigorous, confidential approach to answering:
  - What happened?
  - Why did it happen?
  - What are we going to do to prevent it from happening again?
  - How will we know that our actions improved patient safety?

**Cons**

- Too late
- After the event
- Local ownership?
- Closing the loop
- Timeliness of feedback
- Timeliness of preventative action
Measurement of Harm

Measures of harm can be grouped into:

Those that focus on specific types of harm

- The Harvard Medical Practice Study
- Medicare Patient Safety Monitoring System
- Agency for Healthcare Research and Quality Patient Safety Indicators

Those that focus on all harm

- The Global Trigger tool (IHI) and its derivatives which expedite record review by focusing on triggers-clues which increase the likelihood that the patient experienced harm
What Are Trigger Tools?

- Developed by the IHI
- Reliable and valid tool that measures harm related to or from the delivery of care
- Takes focus off of what is considered to be preventable “Triggers are defined as occurrences, prompts, signals, or flags found on review of the medical record that “trigger” further investigation to determine the presence or absence of a adverse event.”

Background and Development

- 1990 – Computerised triggers for adverse drug events (ADE) and concurrent intervention
- 1994 – ADE review identifies 14 triggers accounting for majority of events
- 1999 – ADE trigger tool developed for the IHI Idealized Design of the Medication System
- 2002 – ICU adverse event trigger tool developed for IHI Idealized design in ICU
- 2004 – Global trigger tool testing and spread to US and other international patient safety projects
The IHI Global Trigger Tool

● The IHI Global Trigger Tool for Measuring Adverse Events is a tested, proven, and sensitive tool to measure harm. In a recent study, detected ten times more confirmed, serious events than other methods.*

A recent study compared three methods to detect adverse events in hospitalized patients, using the same patient sample set from three leading hospitals.

It found that the adverse event detection methods commonly used to track patient safety in the United States today—voluntary reporting and the Agency for Healthcare Research and Quality’s Patient Safety Indicators—fared very poorly compared to other methods and missed 90 percent of the adverse events.

The Institute for Healthcare Improvement’s Global Trigger Tool found at least ten times more confirmed, serious events than these other methods. Overall, adverse events occurred in one-third of hospital admissions. Reliance on voluntary reporting and the Patient Safety Indicators could produce misleading conclusions about the current safety of care in the US health care system and misdirect efforts to improve patient safety.
The IHI Global Trigger Tool

- Establishes a baseline of adverse events.
- Types of adverse events can be catalogued and prioritized.
- Resources can be focused on those events causing great harm.
- Effect of interventions can be monitored when adverse event rate is measured over time.
Key Learning

- The global trigger tool gives you the ability to measure harm in a simple and cost effective manor.
- Build it into existing roles (audit, risk, safety)
- Remember the most important information deals with the adverse event you find and not the “trigger”. Triggers are tools to find adverse event.
- This data can be used to create “will” in your organization for change and allows you to understand unique problems that you are facing.
Use of trigger tools as a measure of harm

Reliable process for selection and review of patient records:
- Apply exclusion criteria
- Ensure any sample is random
- Review all records
- Establish a team of experienced reviewers trained in the use of the tool
- Use the appropriate trigger tool for the clinical setting

A process for analysing the results of the review:
- Enter data gathered into trigger tool analysis template

A communication process for reporting/sharing the findings:
- Report findings to relevant teams/management
- Report at relevant meetings
- Share learning with clinical staff/students

A process for addressing themes/issues raised by the reviews:
- Root cause analysis
- Serious incident review
- Analyse process of care to identify reliability issues
Obtaining a Random Sample

The Relationship Between a Sample and a Population

Ideally a “good” sample will have the same shape and location as the total population but have fewer observations (curve A).
Trigger Tool Process

Random Charts

Triggers Reviewed

Positive Triggers Identified

No

End Review

Yes

Portion of Chart Reviewed

No

Yes

Adverse Event Found

End Review

Adverse Events per 1000 Patient Days

Harm Category Assigned

No

Yes
## Category of Harm*

<table>
<thead>
<tr>
<th>Code</th>
<th>Description of Harm</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Temporary harm, intervention required</td>
</tr>
<tr>
<td>F</td>
<td>Temporary harm, initial or prolonged hospitalization</td>
</tr>
<tr>
<td>G</td>
<td>Permanent patient harm</td>
</tr>
<tr>
<td>H</td>
<td>Life-sustaining intervention required</td>
</tr>
<tr>
<td>I</td>
<td>Contributing to death</td>
</tr>
</tbody>
</table>

*from NCC MERP Index

Harm is always considered from the viewpoint of the patient
Trigger Tool Top 10 Tips

For consistency, accuracy and to gain maximum benefits when using a trigger tool ensure that:

1. You are using the correct Trigger Tool for the clinical setting.
2. The trigger tool methodology is adhered to at all times. This includes correctly applying the inclusion/exclusion criteria.
3. There is a robust process for sampling/identifying and pulling records.
4. There is a correct randomisation process.
5. All notes selected are reviewed – do not exclude large volumes or those that are difficult to get hold of as this will introduce bias and skew the results.
6. Those undertaking the reviews have a clinical background.
7. There is consistency in who undertakes the reviews.
8. There is consistency of approach amongst the reviewers.
9. You use it as an improvement tool - the analysis tools provide a list of summary indicators (for example, frequently occurring triggers, conversion from trigger to harm) which can be used to target areas for improvement.
10. You share /communicate the learning from the review with colleagues and senior leaders.
Other Trigger Tools

- Surgical
- Intensive Care
- General Primary Care
- Paediatric
- OBGYN
- Mental Health
Key Learning Points

- A positive trigger does not always mean an adverse event
- Some adverse events are “minor or trivial’ and we do not count them
- We only count those events due to commission (not those due to omission)
- Chart reviews are limited to 20 minutes
- Charts should be reviewed separately by each reviewer
- The physician only reviews the consensus of the chart reviewers
Moving Your Dot

- It won’t happen if...
  - You quietly contemplate the findings and keep the information to yourselves
  - You only use the info to report

- It requires a deeper understanding of harm

- And… appropriate & timely action
Reducing Avoidable Harm Locally

Days since last... ___ days

New case identified
Admitted
/transferred with
No avoidable harm
Real Time Root Cause Analysis

- See it, Swarm it. Solve it!
- Adverse event occurs
- Incident recorded on safety cross and reported
- Team huddle together to review what happened
- Ask the five why’s?
- Why did this occur etc.
- Understand the root cause
- Identify timely solutions
- Feedback the incident and resultant action to staff on handover/safety briefing
Five Strategies for Successful Measurement

- Strategy 1: Use multiple measures
- Strategy 2: Choose appropriate statistics to plot.
- Strategy 3: Conserve resources through sampling and integration into daily work.
- Strategy 4: Plot data over time.
- Strategy 5: Develop excellent visual displays of measures.
Measurement for Improvement

1. Outcome Measures (voice of the customer or patient): How is the system performing? What is the result?

2. Process Measures (voice of the workings of the system): Are the parts/steps in the system performing as planned?

3. Balancing Measures (looking at a system from different directions/dimensions): Are changes designed to improve one part of the system causing new problems in other parts of the system?
Data for Improvement

Using Data to understand progress toward the team’s aim

Using Data to answer the questions posed on in the plan for each PDSA cycle
Key Factors
Patient Safety Improvement

- Leadership & Culture*
- Teamwork-Human factors
- Effective Inter-professional communication
- Improvement capacity and capability
- Local ownership of data
- Reliable care processes
- Partnership with patients and families
- Understanding of where harm lies

* [http://www.ted.com/talks/drew_dudley_everyday_leadership.html](http://www.ted.com/talks/drew_dudley_everyday_leadership.html)
Useful References


PDSA Cycle No 1:
Worksheet for Testing Change

**Aim:**
*(Overall goal you would like to reach)* 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>
<tbody>
<tr>
<td></td>
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</table>

**Plan**

<table>
<thead>
<tr>
<th>List the tasks needed to set up this test of change</th>
<th>Person Responsible</th>
<th>When to be done</th>
<th>Where to be done</th>
</tr>
</thead>
<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Predict what will happen when the test is carried out</th>
<th>Measures to determine if prediction succeeds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Do:</strong></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Study:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>What happened?</td>
</tr>
<tr>
<td>What did you learn?</td>
</tr>
<tr>
<td>What surprised you?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Act:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>What will you differently as a result of your test?</td>
</tr>
<tr>
<td>What will your next test be? When will it be?</td>
</tr>
<tr>
<td>Repeat the cycle</td>
</tr>
</tbody>
</table>

*Test over a wide variety of conditions, different patients, different staff, days, nights, secondary care/primary care.*
*Measure, collect enough data to tell you if your test was a success.*
*Keep testing until the changes you are making result in improvements.*
Questions?

Raise your hand

Use the Chat
Work for Action Period

- Understand where harm lies in your unit?
- Review the last five harm events on your unit
  - What happened? What surprised you? What will you do differently as a result?
- Use Safety Cross to measure specific harm e.g. Falls with harm, pressure ulcers, catheter associated infections.
  - Report progress at safety briefing/handover
- If an adverse events occurs use the See it, Swarm it, Solve approach to act in real time
- Undertake a global trigger tool review- review 20 sets of live case notes (additional guidance available on [http://www.ihi.org/knowledge/Pages/Tools/IHIGlobalTriggerToolforMeasuringAEs.aspx](http://www.ihi.org/knowledge/Pages/Tools/IHIGlobalTriggerToolforMeasuringAEs.aspx)).
Volunteers?
Progress Summary

- Content and background to patient safety
- Essentials of teamwork
- Effective communication
- Measurement of adverse events
- Tools and techniques for the frontline staff
- Engaging patients and families in preventing harm
Expedition Communications

- Listserv for session communications: SafetyExpedition@ls.ihi.org
- To add colleagues, email us at info@ihi.org
- Pose questions, share resources, discuss barriers or successes
Next Session

Session 5 – Tools and Techniques for the Frontline Staff
Date: Thursday, April 25, 1:00 PM – 2:00 PM ET