Assessing Adverse Health Events: *Measurement Tools*

Paula Beard

Director of Operations, CPSI

Provincial Forum on Adverse Health Event Management May 26, 2008

St. John's NL

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Understanding Unanticipated Outcomes

Organizational Responsibility

- Trigger Tools
- Event Analysis
- Peer Review
- Failure Mode Effect Analysis

External Review

- Regulatory Review
- Coronial Reports/Reviews/Inquiries
- Public Inquiries

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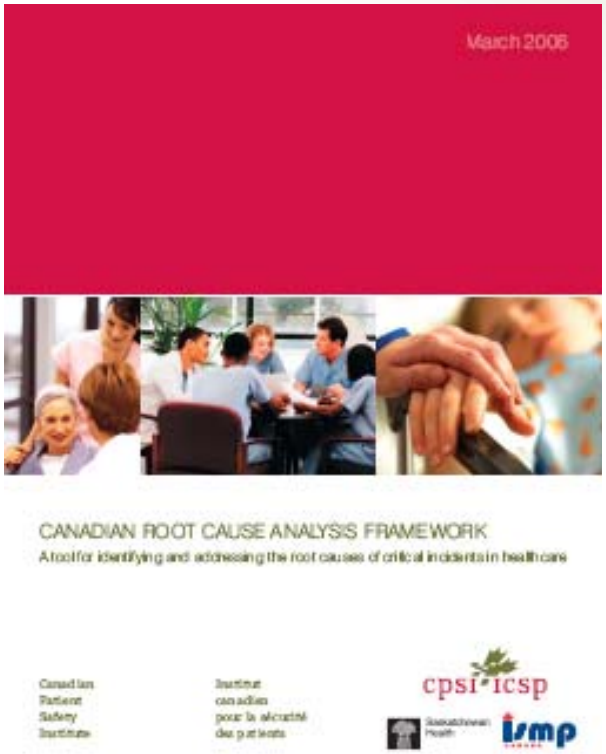
Trigger Tools

- Signals for detecting likely adverse events.
  - Examples
    - naloxone (excluding the E.D.)
    - INR>3
    - Administration of Vitamin K
- Utilized for retrospective reviews.
- Has been employed in real time (in 1 community hospital 1000 triggers identified in 6 months led to approximately 25% being acted upon by physicians. These events would not necessarily been identified through other means).
- Can be used in conjunction with event analysis

-AHRQ Glossary

Canadian Root Cause Analysis Framework Document



Available at: www.patientsafetyinstitute.ca

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WHO High 5s Event Analysis

- Emerging body of knowledge but no international standard available
- Event analysis process varies across countries
- High 5s event analysis model accommodates the legal issues within the countries, is criteria based, explicit and simple for institutions to understand and use.

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Event Analysis: Goals

To determine:

- what happened
- why it happened and
- what can be done to reduce the likelihood of a recurrence

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Components of Event Analysis

- Gather Information
- Initial Understanding
- Additional Information
- Literature Review
- Final Understanding and Timeline
- Determine Root Causes
- Formulate Causal Statements
- Develop Actions

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Event Analysis

To be credible, an must include:

1. Participation by the leadership of the organization and those most closely involved in the processes & systems
2. Address all conclusions of possible causation with continued analysis or recommendations for reducing risk
3. Include consideration of relevant literature and other sources of information
4. Document the rationale for “not applicable” or “no problem” conclusions or for the lack of a recommendation to address any identified underlying cause

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WHO High 5s (4 levels)

Four level event analysis framework

1. Checklist Event Analysis
2. Basic Event Analysis
3. Comprehensive Event Analysis
4. Independent Event Analysis

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Checklist

Coordinated by the Patient Safety Manager

One page structured template

- Usually conducted for ‘No / Low Harm’ events
- Includes key elements of a thorough and credible investigation but conducted within a short time frame
- Often conducted in collaboration with staff and physicians local to the event
- Identifies contributing factors as well as remedial action(s) taken (if any)
- Includes a method for sharing lessons learned
- Documentation includes the completed template and any flowcharts, or other related materials

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Basic

Conducted by Patient Safety Manager

Completion of the full event analysis process by a small ad hoc group (includes staff and physicians local to the event)

- Usually conducted for ‘Moderate Harm’ events
- Includes key elements of a thorough and credible investigation but conducted within a moderate time frame
- Involves a degree of delving and analysis
- Includes identification of contributing factors, a short term action plan (with defined defined steps for monitoring implementation) as well as a method for sharing lessons learned
- Documentation includes a short report using a structured template (4 to 6 pages) and other related materials

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Comprehensive

‘Facilitated’ by Patient Safety Manager

Completion of full event analysis process by a multidisciplinary medium to large ad hoc group (includes staff and physicians local to the event, recognized independent external experts, consultants not involved in event)

- Usually conducted for ‘Severe Harm / Death / Critical Events’
- Includes all elements of a thorough and credible investigation conducted over a longer time frame (maximum of 90 days)
- Includes identification of contributing factors, an action plan (with defined steps for monitoring implementation as well as evaluation of effectiveness) and a robust method for sharing lessons learned
- Documentation includes a full report with appendices and other related materials

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Independent

Completion of the full investigation process by an independent agency / organization

- Usually conducted as per legislative requirements and/or for events attracting high media attention
- Includes all elements of a thorough and credible investigation
- Includes identification of contributing factors, an action plan (with defined steps for monitoring implementation as well as evaluation of effectiveness) and a robust method for sharing lessons learned
- Documentation includes a full report with appendices

Aggregate

Completed quarterly

- Utilized for high impact and higher volume events causing significant harm or death including:
  - falls
  - Attempt Suicide while in care

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Peer Review

- Generally a function of the Medical Advisory Committee
- Addresses issues of diagnosis and treatment choices
- Most often single discipline but new interdisciplinary models emerging

Failure Modes Effects Analysis (FMEA)

Prospective attempts to predict "error modes.“

- the likelihood of a particular process failure is combined with an estimate of the relative impact of that error to produce a "criticality index."
- the probability of failure is combined with the consequences of failure, this index allows for the prioritization of specific processes as quality improvement targets.

-ARHQ Glossary

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Failure Modes Effects Analysis (FMEA)

Example:

- An FMEA analysis of the medication dispensing process on a general hospital ward might break down all steps from receipt of orders in the central pharmacy to filling automated dispensing machines by pharmacy technicians.
- Each step in this process would be assigned a probability of failure and an impact score, so that all steps could be ranked according to the product of these two numbers.
- Steps ranked at the top (ie, those with the highest "criticality indices") would be prioritized for error proofing.

AHRQ Glossary

Contact Information

Paula Beard, Director of Operations Canadian Patient Safety Institute

Phone: (780) 498-7270 or

Toll free (866) 421-6933

Fax: (780) 409-8098

Email:pbeard@cpsi-icsp.ca

www.patientsafetyinstitute.ca

The Canadian Patient Safety Institute would like to acknowledge funding support from Health Canada. The views expressed here do not necessarily represent the views of Health Canada.

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