



The Patient Safety
Education Program™
CANADA

Module 16: Canadian Incident Analysis Framework

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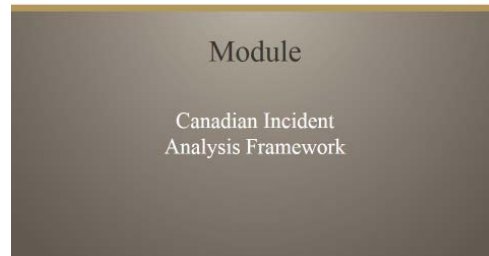
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Abstract

Slide 1



In healthcare, patient safety incidents that impact the lives of patients and families, as well as providers and organizations, can and do occur. In recent years, considerable focus on patient safety has been aimed at different levels: the culture of patient safety within healthcare organizations, the knowledge associated with patient safety (methods and research), analysis of safety incidents (with resulting learning and improvements) and sharing and communicating these with others. Greater understanding of the complexities and limitations of healthcare has also surfaced (e.g. interconnections between services and care, resource demands to implement improvement initiatives, increased visibility of patient safety and the impact of stringent budgets on quality of care).

The Canadian Incident Analysis Framework (the framework) is a resource to support those responsible for, or involved in, managing, analyzing and/or learning from patient safety incidents in any healthcare setting with the goal of increasing the effectiveness of analysis in enhancing the safety and quality of patient care. The framework provides methods and tools to assist in answering the following questions:

- What happened?
- How and why it happened?
- What can be done to reduce the likelihood of recurrence and make care safer?
- What was learned?

This module presents the methods and resources included in the framework which are designed to support organizational learning, quality improvement, a safe and just culture and to improve the success of analysis in enhancing the safety of patient care. The module also discusses “the incident management continuum” which emphasizes how incident analysis is part of the multitude of processes and activities that take place in the aftermath of an incident.

Keywords

Patient/family centered care, safe and just culture, systems thinking, complexity theory, incident, analysis, concise, comprehensive, multi—incident, common causes, special causes, recommendation, actions, hierarchy of effectiveness, priority, monitor, implementation, impact

Teaching methods

Interactive lecture, small group discussion,

Objectives

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Knowledge requirements

- Understand
 - core concepts of patient safety, systems thinking and complexity theory
 - importance of incident analysis
 - core concepts and best practices of:
 - comprehensive analysis
 - concise analysis
 - multi incident analysis
 - development and management of recommended actions

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Performance requirements

- Use a range of tools and techniques to conduct incident analysis
- Select the appropriate method for incident analysis
- Develop actionable recommendations
- Monitor implementation and effectiveness of recommended actions

The learning objectives of this module are to increase knowledge and skills on how to use incident analysis methods and tools, based upon the Canadian Incident Analysis Framework. This includes understanding the core concepts of patient safety, the various analysis methods, patient engagement and the different tools and techniques to prepare, conduct and close the loop of an incident analysis with the outcome of improving the care and safety of patients.

Knowledge requirements

The knowledge elements include an understanding of:

- core concepts of patient safety;
- importance of incident analysis and management;
- incident analysis methods:
 - comprehensive analysis,
 - concise analysis, and
 - multi incident analysis;
- development and management of recommended actions; and
- sharing learnings.

Performance requirements

The performance elements include the ability to:

- use a range of tools and techniques to conduct incident analysis;
- select the appropriate method for incident analysis;
- develop actionable recommendations;
- monitor implementation and effectiveness of recommended actions; and
- share learnings.

Incident case

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Incident case

- Winter - LTC home: 75 yr old female resident
- Supper: noticed resident was not in dining room
- Search the building: no resident
- Code Yellow called
- Found by police: 2 km away on highway
 - resident was cold and confused
 - poor outcome; removal of toes
 - family contacted two days later

During the winter, with the average temperatures of -20°C at night, a dietary aide noticed at dinner time that Mrs. Jones, a 75-year old female resident with insulin dependent diabetes and dementia, was not in the dining room, at the Loving Home Place, a long term care and assisted living residency.

A care aide was asked to look for her but could not find her within the facility. After a four hour search on the grounds, a Code Yellow was called. On notifying the police, it was learned that Mrs. Jones had been found, cold and confused, walking on a highway two kilometers away and that police were trying to determine where she lived.

Mrs. Jones was taken to a local emergency department for assessment and treatment. She was found to have hypothermia and in the stages of diabetic shock. As a result of this

incident, she had to have two of her toes on her right foot removed. Her daughter was contacted two days later, after the incident.

Introduction

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Introduction

- ❑ Despite best efforts/intentions, harm occurs
- ❑ Patients/families/providers are impacted
- ❑ Impact can last for long time
- ❑ Competing demands in healthcare
- ❑ Incidents are rarely systematically reviewed
- ❑ Positives can come from difficult situations
 - improvements for patient care/safety
 - reduce the risk of similar harm to others

Despite best efforts and intentions, patients are sometimes harmed and, in some cases, die as a result of the care that was intended to help and heal them. While patients and their families bear the primary burden of this harm, well-intentioned healthcare providers and healthcare organizations are also impacted as a result of incidents. The impact can extend for months and even years, affecting personal health, relationships and careers. Anger, frustration and complicated grieving can result when communication and information is not forthcoming and where there are gaps in learning and improvement.

In healthcare settings where there are so many competing demands on providers, incidents are often discussed, but rarely are they systematically reviewed. Incident analysis can provide a mechanism for something positive to come from these very difficult situations, thereby assisting patients, families and providers in understanding what happened and what improvements could be made to reduce the risk of harm to other patients in the future.

The Canadian Incident Analysis Framework is a resource to help support individual and organizational learning, as well as quality improvement, in response to a patient safety incident(s). Organizations may also choose to use the framework to support quality improvement processes.

Patient and family relationships

The partnerships between patients, families and healthcare providers are one of the most important parts of our care. When patients need care, they will often feel very vulnerable. Patients/families may also be frightened, upset and uncomfortable. Healthcare settings are generally not that familiar to them. The conversations that they have with healthcare providers about the health and care plan, including possible risks and outcomes, both before and after care or treatment, help reassure them and allay some

of the fears that they may have. The open sharing of information helps strengthen the trust between the care team and the patient/families and improves the safety and experience of the patient's care.

Safety and patient family-centered care first

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Safety and patient family-centered care first

- Care received is safe
- Patients/families treated with respect
- Provide information to help understand and make reasonable decisions
- Communicate openly and honestly
- Patients/families are involved; partners in care

When patients/families need the healthcare system, it is expected that the care will be safe and that it will be sensitive to the needs and wishes of the patient and family. This is aligned with both the provider/organization commitment to first do no harm and with the principles of patient safety and family-centered care, which include:

- the care that is received is safe;
- patients/families are treated with respect;
- patients/families are given information that they need to help understand and make reasonable decisions about their healthcare;
- patients/families are able to communicate openly and honestly with healthcare providers; and
- patients/families, as able, are involved with the healthcare team as partners in the care.

See PSEP – Canada Module 7: Patients as Partners: Engaging Patients and Families for further information on engaging patients and families.

Engagement in unexpected situations

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Engagement in unexpected situations

- Explain what unexpected event/change happened
- Apologize that it happened
- Help understand how and why it happened
- Explain what will happen next and commit next steps to patient/family
- Include the patient/family in the fact gathering process

When things don't go as expected - when conditions change or when harm occurs, the principles of safety and patient/family -centered care are even more important. Whether it is believed at the time to be a complication, an error, an oversight, a safety incident or a case of "we don't know right now", patients and families need the healthcare system to support them and commit to finding out what happened and to making improvements. For patients/families, disclosure, learning and making improvements for the safety of the next patient are the most important parts of this process.

When unexpected situations occur, patients/families need the healthcare system and care providers to:

- explain what unexpected event or change happened;
- apologize for the fact that it happened;
- help understand how and why it happened;
- explain what will happen next and commit to the patient/family in these next steps; and
- include them in the fact gathering process, enabling them to contribute what is known from the patient's perspective.

Patient engagement in analysis

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Patient engagement in analysis

- Speak to patient/family; as soon as possible
- Use plain language
- Be compassionate
- Acknowledge; unexpected incident has happened
- Be responsive and open
- Explain the process
- Provide contact information

To help understand what happened, healthcare providers need to speak to patient/family as soon as possible. In speaking with the patient/family members, use the following approach:

- speak as soon as possible, even if there is no new information;
- use plain language; speak so the patient/family will understand;
- be compassionate; show that you care about the patient/family and what has happened;
- acknowledge; that something unexpected has happened;
- be responsive and open; not responding or delaying the openness creates more fear and erodes trust;
- explain the process; what will happen next, what is the care plan and how the situation will be reviewed;
- involve the patient/family in the fact gather stage; this will further validate respect for their point of view as the expert in the patient experience; and
- provide contact information at the time of the acknowledgement; this will make it easier for the patient/family and ease communication, understanding and trust.

Patient/family could be the first ones to see, feel or sense something that isn't right. They will understand that the "how and why" it happened may not be fully known at the time of the initial disclosure and that more information and time may be needed to gather more facts.

More information regarding guidelines to assist in the disclosure process can be found within the Canadian Disclosure

Guidelines. www.patientsafetyinstitute.ca/English/toolsResources/disclosure

Remember that the goal for the patient, the family and the healthcare providers is to make the system safer for patients through understanding, learning and improvement.

Patient engagement post-analysis

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Patient engagement post-analysis

- Meet with patient/family in person
- Time/place that works best for patient/family
- Ask for the patient/family's perspective about the incident and suggestions for learnings and improvements
- Talk with the patient/family about next steps

After the analysis has been completed, ensure that you meet with the patient/family in person, if this is so desired by them, at a time and place that is agreeable to them. Keep

the commitment of the follow up date/time and if a delay is expected, inform the patient/family along with the reason for the change. If there is any information or reports that can be shared ahead of time ensure they are sent in advance of these meetings, so the patient/family can review them and come prepared with their own questions.

At the meetings, remember these discussions can be very emotional for the patient/family - see Appendix F: Checklist for Effective Meetings with Patient(s)/Families of the framework <http://www.patientsafetyinstitute.ca/English/toolsResources/IncidentAnalysis/Documents/Canadian%20Incident%20Analysis%20Framework.PDF>.

Ensure that the experience is an easier one by the following:

- ask about the perspective of the patient/family regarding the incident,
- ask for the patient/family's suggestions for learning and improvements, the patient and family view is a valuable resource for finding effective solutions as they have experienced failures in care and in the system first hand, and
- talk with the patient/family about next steps and how they can continue to be informed or involved in developing or promoting these improvements.

By involving the patient and family before, during and after the analysis process, it shows a continuing commitment to their safety and the safety of other patients.

Partners in building trust

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Partners in building trust

- Involve patients and families in improvement processes
- Patients and families have important insights, information and experiences to share
- Patients and families are committed partners in the safety and quality of their care

As new ways of incorporating safety and quality into healthcare practices are being considered, involve patients and families in the process. Work with patients and families to ensure their experiences and suggestions for improvement are beneficial for all and especially for the patient and family.

Patients and families have important insights, information and experiences to share and are committed partners in the safety and quality of their care.

Principles and concepts of incident analysis

The following principles are the building blocks that form the foundation for effective incident analysis as well as incident management (incident management includes the

various actions and processes required to conduct the immediate and ongoing activities following an incident; incident analysis is part of incident management). Organizations are encouraged to develop, support and communicate these principles on an ongoing basis.

Principles

Safe and just culture

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Safe and just culture

- Open and fair
- Accountability
- Reporting of incidents is required/encouraged
- Supports opportunities for safety training and preparedness
- Flexibility and resilience are required
- Promotes understanding, learning and improvement

Patient safety requires that healthcare organizations build and maintain a safety culture. Safety culture is frequently defined as the product of individual and group values, attitude, competencies and patterns of behaviour that determine the commitment to and the style and proficiency of an organization's health and safety programs. More information about culture and patient safety can be obtained from the PSEP – Canada Module 5: Organization and Culture.

A safety culture is comprised of many things, including:

- openness,
- fairness,
- accountability,
- reporting of incidents are required and encouraged,
- supporting opportunities for safety training and preparedness,
- promoting understanding, learning and improvement, and
- flexibility and resilience.

But importantly, it includes the principles of patient and family centered care.

Organizations

- Communications founded on mutual trust
- Shared perceptions of the importance of safety
- Confidence in the efficacy of preventative measures
- Consistency and fairness
- Team approach
- Confidentiality

Organizations with a positive safety culture are characterized by:

- communications founded on mutual trust,
- shared perceptions of the importance of safety, and
- confidence in the efficacy of preventative measures.

Organizations, to be able to support a safety culture, must also consider the following principles:

- Consistency and fairness; it is paramount that all healthcare providers clearly understand how their organizations will approach incidents and their analysis. The process must be applied fairly and consistently otherwise the organization has the risk to drive incident reporting underground due to a fear of negativity and personal repercussions.
- Team approach; enables the success of incident analysis. The patient/family and key individuals who were directly involved in the incident should all have meaningful roles in the process. Utilize a facilitator and clinical leader who can operationalize the process, to share primary accountability for conducting the analysis.
- Confidentiality; in a confidential environment is where incident analysis will be the most effective. Legislation that protects discussions related to the quality of care exists in many provinces/territories to facilitate an environment of open sharing of opinions. Some organizations may also require the analysis team to sign a confidentiality agreement. Regardless of legislation- confidentiality related to the patient's identity and care details is mandatory.

The incident analysis process is most effective when it is conducted within a safety culture because providers know they will be treated fairly and will be held accountable for their actions and behaviours.

Culture cannot be implemented solely based upon policy or procedure rather; it needs to be consistently fostered over time and by example at all levels in the organization. Leadership is especially important in the initial stages of building a safety culture.

Ultimately, everyone in the organization has a role in helping to build and maintain a safety culture

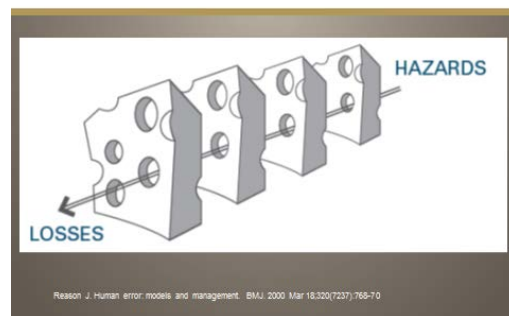
Concepts

There are several concepts used throughout the framework that are intended to ensure that incident analysis and management reflects the complexities of the current healthcare system, while remaining practical. The following concepts will support a deeper understanding of how incidents occur in healthcare and assist the framework users in developing and focusing improvement strategies with greater precision.

Swiss Cheese Model

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Reason's Swiss Cheese Model



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Swiss cheese model & organizations

- Defenses, barriers and safe guards are permeable
- Incident occurs when there is an alignment of unsafe acts and dormant system conditions
- Humans are fallible and errors are expected
- Ask the How and the Why; defenses that failed
- Higher reliable organizations have fewer harmful incidents; anticipation to negate outcomes by being prepared

James Reason's Swiss Cheese Model is one of the foundational concepts which supports all aspects of incident management, and includes:

- defenses, barriers and safe guards that exist in a system are not impermeable;
- systems can be penetrated when unsafe acts and dormant system conditions are aligned to create the opportunity for an incident;
- humans are fallible and errors are to be expected, even in the best organizations;
- ask the how and why re: defenses that failed within the system as a whole; and
- higher reliable organizations have fewer harmful incidents because they continuously anticipate negate outcomes and are prepared.

Systems thinking and human factors

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Systems thinking

- ❑ Coming together of parts, interconnections and purpose
- ❑ Can be mechanical (e.g. car) or adaptive (e.g. organization)
- ❑ Adaptive systems:
 - Have low degree of predictability
 - Are complex; help or harm

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Systems thinking vs. blame-free culture

- ❑ Systems thinking is not a “blame-free” culture
- ❑ Emphasizes analysis of the entire system of care instead of a rush to blame individuals
- ❑ People are part of the system

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Applying systems thinking

- ❑ Internal incident reporting systems are not equivalent to patient safety programs
- ❑ Reporting systems should be only one part of an overall patient safety program
- ❑ The focus of the reporting should be on identified hazards and near misses

A system is described as the coming together of parts, interconnections and purpose. Systems can be mechanical (e.g. cars, airplanes) or adaptive (e.g. organisms, organizations).

Adaptive systems:

- have low degree of predictability; all of the parts of the system do not respond in the same way each time, and
- are complex; additional factor(s) can decrease predictability- which can help or harm.

Patient safety experts are strongly advocating for a way of thinking that views human error as a symptom of broader issues within a poorly designed system, such as an adverse physical or organizational environment. Systems thinking is not a “blame-free” culture, rather it emphasizes the need to analyze the entire system of care as opposed to rushing to blame individuals. People are part of the healthcare system. It should be noted however, that disregard for professional responsibility is grounds to hold an individual accountable.

Internal incident reporting systems are not the equivalent to safety programs. Reporting systems should be only one part of an overall patient safety program with the focus of reporting on identified hazards and near misses.

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Human factors

- Interaction between humans and the world around them
- Focuses on system vs. individual
- How and why re: incident analysis
- Identifies disconnects between people
tools & technology
environment

Human factors examine how humans interact with the world around them. Using this approach can help determine how and why things go wrong. It is a discipline dedicated to uncovering and addressing any disconnects between:

- people,
- tools and technology, and
- environment.

Human factor knowledge can be:

- useful when asking questions about the incident,
- important when asking questions about the incident,
- help the focus of the analysis team to be on the system vs. the individual, and
- always included in effective incident analysis.

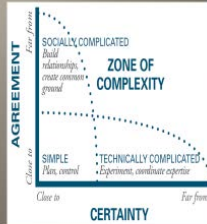
When people use tools and work in environments that do not support them, errors or near misses can occur. Human factors, with systems thinking, impact all levels of patient safety incident management. See PSEP – Canada Module 2: Human Factors Design: Applications for Healthcare for more information on Human factors.

Complexity Science

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Complexity

- Zone of complexity
 - low degree of certainty
 - low level of agreement
- Certainty
 - technical complexity
- Agreement
 - social complexity



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Types of complexity

- Simple
 - high level of agreement, close to certainty
 - e.g. collecting a blood sample via venipuncture
- Complicated
 - many possible interactions but in a patterned way
 - e.g. patient admission process
- Complex
 - low agreement, high degree of certainty difference
 - e.g. transferring a patient between organizations

Complexity science examines the behaviour of adaptive systems, which is related to the degree of interconnectedness among the many parts of the system.

Complexity science includes the following:

- zone of complexity: area where there is low degree of certainty and low level of agreement about outcomes,
- certainty: level of technical complexity, and
- agreement; level of social complexity.

There are three areas where an incident may land regarding complexity.

- Simple: Systems that have few interactions and are extremely predictable. The same action produces the same result. There is a high degree of agreement and close to certainty
 - Example: collecting a blood sample through venipuncture
- Complicated: Systems that have many moving parts or tasks in a process where it may result in many possible interactions but operate in a patterned way.
 - Example: patient admission process
- Complex: Systems that may operate in a patterned way but the interactions are continually changing. Low level of agreement and a high degree of difference in certainty

- Example: transferring a patient between organizations

Sphere of influence

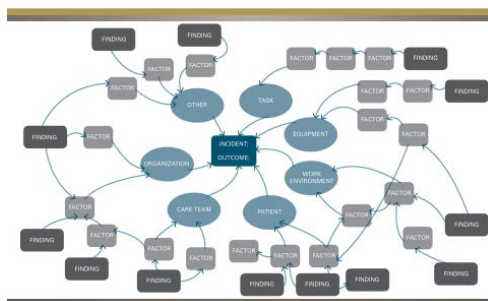
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Sphere of influence

- ❑ Number and strength of interconnections between parts of a system
- ❑ One contributing factor could be influenced by any number of other factors
- ❑ Use Constellation diagram to visualize the connection between an incident and factors contributing to the incident
- ❑ Not meant to be a linear relationship

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Constellation diagram



Sphere of influence refers to the number and strength of interconnections between the parts of the system. A particular contributing factor could be influenced by any number of other factors.

The concept of sphere of influence is demonstrated in the analysis of incidents with the use of a constellation diagram.

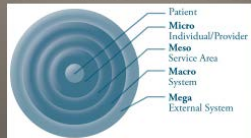
The constellation diagram helps those responsible for the analysis to visualize the incident and factors that contributed to the incident. The sphere of influence is visualized by connecting the contributing factors that influence one another. It is not meant to be linear in its representation.

System levels

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System levels

- Micro: individual/provider, e.g. clinical team
- Meso: service area, e.g. cardiac program
- Macro: system, e.g. healthcare organization
- Mega: external e.g. government/licensing



Systems are generally viewed by the following four levels, though each organization may look at these levels in a slightly different way as there may be some variation across healthcare sectors.

- Micro (Individual/Provider): the point where the care providers interact with the patient (e.g. clinical team)
- Meso (Service Area): the level responsible for the service areas/clinical programs providing the care (e.g. cardiac program)
- Macro (System): the highest strategic level of the system, including all intersecting areas/programs (e.g. integrated healthcare organization)
- Mega (External); the level outside of the organizational boundaries that influences the behaviour of more than one system (e.g. Ministry of Health- provincial/federal governments)

There are multiple connects within and among the four levels, reinforcing the need to consider these levels in order to understand and better manage patient safety incidents.

Conditions that influence

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Conditions that influence

- May be specific to incident and/or system
- Internal
 - incidental data, patient complaints
 - resources available
- External
 - regulations, requirements, preferred practices
 - evidence from literature
 - demands from patients, public, media

Context can include a combination of relevant internal and external conditions, specific to the incident and the system that influence the incident analysis process.

Internal conditions:

- Incident data, such as historical reports from the internal reporting system, patient complaints
- Short and long term strategic priorities
- Resources available including leadership support and coordination

External conditions:

- Regulations, requirements, preferred practices
- Evidence from literature
- Information from public patient safety reports/databases (e.g. Global Patient Safety Alerts www.globalpatientsafetyalerts.com/English/Pages/default.aspx)
- Anticipated demands from patients, public, media and other stakeholders

In incident analysis, complexity should be considered when selecting an incident analysis method, analyzing contributing factors and building recommendations.

Leading practices

Incident analysis goals

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Incident analysis goals

- Determine what happened
- How and why it happened
- What can be done to reduce risk of recurrence and make care safer
- What was learned

The primary objective of incident analysis and management is to learn from the incident in order to reduce the risk of recurrence and make care safer for future patients.

The goals of incident analysis are to determine:

- what happened,
- how and why it happened,
- what can be done to reduce the risk of recurrence and make care safer, and
- what was learned.

Incident analysis key features

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Incident analysis key features

- ❑ Timely
 - begin as soon as possible, after the incident
- ❑ Inter-disciplinary
 - involve experts from the frontline
 - involve patient and family
- ❑ Objective
 - impartial

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Incident analysis key components

- ❑ Detailed description of incident
- ❑ Analysis of underlying systems
- ❑ Formalized recommended actions
- ❑ Documentation of findings and recommendations
- ❑ Follow through to identify and share learnings

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Credibility

- ❑ Patient/family, providers/staff are involved
- ❑ Organizational leadership is involved
- ❑ Review of relevant literature/best practices
- ❑ Creation of evaluation plan
 - assess implementation of recommended actions
 - assess impact of recommended actions

An incident analysis should begin as soon as possible after the incident. It will involve interdisciplinary experts from the frontline services, as well as the patient or family. Above all, it is meant to be an objective and impartial look at what occurred.

A thorough incident analysis must include:

- a detailed description of the incident being analyzed,
- analysis of underlying systems through a series of questions,
- formalized recommended actions related to improvements in processes or systems,
- documentation of the findings and recommended actions, and
- follow through to identify and share learnings.

To be credible, the incident analysis must include:

- participation from the patient/family and providers/staff associated with the incident,
- participation from the leadership of the organization as well as those most closely involved in the care processes related to the incident,
- consideration of relevant literature and other sources of information, and
- creation of an evaluation plan to assess implementation of recommended actions and impact achieved.

Avoiding cognitive traps

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Cognitive traps: what to avoid

- Oversimplification of contributing factors
- Overestimation of the likelihood of occurrence
- Overrating the significance of factors and actions
- Misjudging the relevance of facts/dates
- Premature completion of analysis process
- Overconfidence in the interpretation of known information

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Avoiding cognitive traps

- Decision making aides
 - Guiding questions
 - Constellation diagram

Cognitive biases are implicit mechanisms that influence reasoning and decision making and as a result impact the analysis process. Bias can influence the team in a number of ways, resulting in the following:

- oversimplification of what contributed to the outcome;
- overestimation of the likelihood of the outcome;
- overrating the significance of some factors and actions;
- misjudging the prominence or relevance of facts/date;
- premature completion of the analysis process; and
- overconfidence in the interpretation of known information.

Awareness of bias needs to be cultivated in those leading and participating in the analysis; every effort should be made to recognize and reduce the influence of bias.

Techniques that can be used to reduce the influence of bias include using guiding questions and the constellation diagram, as decision aids these tools will help explore the multiple categories of contributing factors and understand their interconnections.

Before the incident

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Before the incident

- Plan
 - have policies, procedures in place
- Resources
 - identify what is required to manage incident review
- Leadership
 - support visible at all levels of the organization
- Culture
 - safe and just culture; reinforce expectations

Organizations can best handle the situation of acting quickly on a patient safety incident by having the following in place:

- Planning - having policies and procedures in place to describes the steps and responsibilities for various actions;
- Resources – identifying the resources required to manage a patient safety incident review, such as policies, procedures, checklists, skills;
- Leadership support visible at all levels of the organization; and
- A safe and just culture, to reinforce expectations.

Resilient Organizations

Slide 32

Resilient organizations

- Have a preoccupation with failure
- Reluctance to simplify
- Sensitive to operations
- Commitment to resilience
- Deference to expertise

Organizations that continuously build and maintain resilience in their structures, functions and way of thinking about incidents are better prepared to manage the unexpected.

Five attributes characterize these organizations:

- preoccupation with failure, and to avoid failure we must look for it and be sensitive to early signs of failure;
- reluctance to simplify, so as to understand the more complete and nuanced picture of an incident to avoid over-simplification, labeling and clichés;
- sensitivity to operations, as systems are not static and linear but rather dynamic and nonlinear in nature, which means it becomes difficult to know how one area of the organization's operations will act compared to another part;
- commitment to resilience, as the organization must maintain function during high demand events; and
- deference to expertise, credibility is a necessary component of expertise as is the mutual recognition of skill levels and legitimacy.

For an organization to be considered resilient it must:

- absorb strain and preserve function despite adversity,
- maintain the ability to return to service from untoward events, and
- learn and grow from previous episodes.

The incident analysis framework

Incident analysis as a part of incident management

Slide 33

Incident analysis framework

- Use to help in analyzing, managing and learning from patient safety incidents
- Not for all types of analyses including:
 - results of a criminal act
 - where intention was to cause harm
 - acts related to substance abuse by provider/staff
 - suspected patient abuse of any kind

The purpose of the incident analysis framework is to help those responsible for, or involved in analyzing, managing and/or learning from patient safety incidents determine what happened; how and why it happened; what can be done to reduce the risk of recurrence and make care safer; and what was learned. Incident analysis cannot be addressed in isolation from the multitude of activities that take place after an incident

(incident management). While there is some variation in how healthcare organizations manage patient safety incidents, the base steps are consistent. There is interconnectivity between the identified activities and some may take place simultaneously.

The framework is not appropriate for all types of analyses.

It is recommended not to use the framework for the following types of incidents:

- events thought to be a result of a criminal act,
- purposely fully unsafe acts (e.g. where intention was to cause harm),
- acts related to substance abuse by provider/staff, and
- events involving suspected patient abuse of any kind.

Learning from experience can prevent harmful mistakes from reoccurring. Safety is enhanced by learning from failure.

When to use the framework

Slide 34

When to use the framework

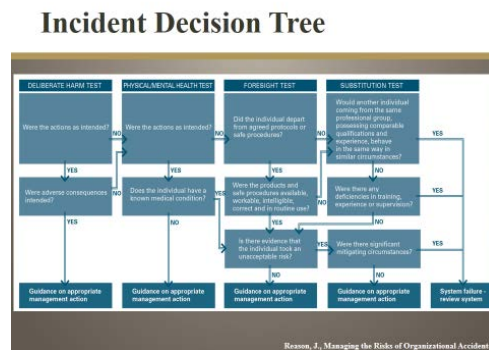
- Incident analysis process can occur in parallel with other types of review processes
- Ensure the following:
 - integrity of the incident analysis is protected
 - Information is not shared from one process to another
 - all participants are aware of the distinction between the processes being reviewed

In circumstances where disciplinary or other administrative action will occur, the incident analysis process can still occur, in parallel if the following is observed:

- integrity of the incident analyses is protected,
- information cannot be shared from one process to another, and
- all participants are aware of the distinction between the two.

In most organizations there are generally two types of formal reviews:

- quality reviews and system improvement reviews of unexpected clinical outcomes and patient safety incidents, and
- proficiency and accountability reviews.



A useful tool to use to determine which type of review would be the most appropriate is the Incident Decision Tree - developed by the National Patient Safety Agency and based upon the culpability model of James Reason.

To use the tool:

- collect the facts;
- determine if an analysis is required;
- determine what type of review is appropriate; and
- triage questions to identify if an administrative review (i.e. performance/accountability review) is best:
 - deliberate violation of policy by the provider,
 - concern about the health of the provider,
 - dominant concern about lack of knowledge or skills by the provider, and
 - significant unprofessional conduct by an individual provider.

Occasionally providers will indicate that there is no need to analyze an incident because of the belief that the harm resulted from a known complication. It is important to understand that with advances in care some complications will over time become preventable and therefore would be classified as a patient safety incident.

Patient safety events can be coupled with complications and without conducting an incident analysis opportunities for learning and improvement may be lost.

Immediate response

Slide 36

Immediate response

- Patient/family and provider
- Report the incident
- Secure items
- Disclosure
- Reduce risk

A patient safety incident can be a very traumatic experience for the patient(s), and provider(s) involved. The following steps should be acted upon as the organization's immediate response to a patient safety incident.

Slide 37

Patient/family/provider support

- First priority for care and support
- Patient/others are safe, family & provider have support

1. Care and Support for Patient, Family & Provider

- Make sure the patient is safe
- Make sure the family has support
- Make sure other patients are safe
- Make sure the provider(s) or others involved are safe and supported

Slide 38

Report the incident

- Trigger for chain of internal notifications; targets different levels within the organization based upon the nature of the incident
- Different organizations have different approaches, practices and tools

2. Report the incident

- Organizations will have different approaches, practices and tools for incident reporting
- Reporting is a trigger for a chain of internal notifications, that depending on the nature of the incident will target different individuals/units/levels within the organization for action
- Communication internally and externally should be a continuous process that is maintained through the analysis phase and closes with sharing of learning

Slide 39

Secure items

- Any items related to the event for review/testing by analysis team
- Items are labelled and placed in a designated secure/protected/restricted access area
- Secure health records, with controlled access

3. Secure items

- Any items related to the event need to be secured for testing and for review by the analysis team (examples; biomedical equipment, IV solutions, medications, packaging, garments)
- Items should be labeled and placed in a designated secure, protected location where access is restricted
- Photographs of items, and workspace, may also be helpful
- Secure health records, with controlled access

Slide 40

Disclosure

- Begin disclosure process with patient and family as soon as possible; even if no new information is available
- Reference: Canadian Disclosure Guidelines

4. Disclosure

- Representatives of the organization should begin the disclosure process with the patient/family as soon as possible

- Ongoing process with multiple “disclosure conversations” may occur over time
- Reference- the Canadian Disclosure Guidelines (2011)

Slide 41

Reduce risk

- Immediately reduce the risk of any imminent recurrence locally
- Follow up with additional actions after a more thorough analysis

5. Reduce Risk

- Immediately reduce the risk of any imminent recurrence locally
- Follow up with additional actions after a more thorough analysis
- Patients and families should be informed of immediate actions

Prepare for analysis

Slide 42

Prepare for analysis

- Preliminary investigation
- Select method of analysis
- Identify the team/approach
- Coordinate meetings
- Conduct interviews
- Conduct incident analysis
- Develop & manage recommended actions
- Close the loop

The following are the steps on how organizations can prepare for analysis of a patient safety incident.

Slide 43

Preliminary investigation

- Fact finding
- Variation on the process
 - individual / organization / jurisdictional
- Conducted by trained individuals
- Decide on what type of incident analysis method

1. Preliminary Investigation:

- Fact finding; assists in determining the need of analysis as well as what type(s) are the most appropriate
- Variation on the process of fact finding is at an individual, organizational and jurisdictional level
- Individuals responsible for preliminary level of analysis should be provided with education on incident analysis and human factors principles, and have access to the organization's tools for identification of key trends in incidents, including contributing factors

2. Select an analysis method:

- Determined after it has been confirmed that a quality review is required
- Three types:
 - Concise
 - Comprehensive
 - Multi-incident
- Decision is jointly made with operational leaders, clinical leaders and safety leaders; per organization's policies and procedures
- Each incident analysis method has a systematic process
- Person/team is assigned as being accountable for the analysis

Slide 44

Building the team

- Facilitator - expert in analysis
- Leaders - operational duties, supports & understands analysis
- Providers/staff
- Patient/family

3. Identify the team and team approach:

- Team includes:
 - Facilitator (expert in analysis)
 - Leader (operational responsibilities, supports and understands analysis)
- Share responsibility for conducting, coordinating and reporting on the analysis
- Clearly define the roles and responsibilities of everyone who will participate in the analysis

Success of an analysis depends on the involvement of those who provided care as well as the patient/family.

Benefits of including providers, patient and family in the initial process of information gathering are:

- Open and sincere partnership that can result in healing, regaining trust in each other and the system and improve the wellbeing of all
- The team may discover new information not previously known by all members of the care team
- Those involved have an opportunity to help reveal information that may lead to solutions to make care safer

Slide 45

Coordinate meetings

- Coordinated by facilitator
- Ground rules
 - respect for individuals
 - respect for opinions expressed
 - equality participation for all
 - ask questions to clarify not challenge
 - decisions by consensus
 - respect for the confidentiality of the discussions

4. Coordinate meetings:

Usually coordinated by the facilitator, ideally in a comfortable, private setting, with ground rules for discussions and ensuring needed information is readily accessible.

Suggested ground rules:

- Respect for individuals
- Respect for opinions expressed
- Equality participation for all
- Respect for the confidentiality of the discussions

- Ask questions to clarify rather than challenging others
- Decisions by consensus

The principle of confidentiality must be stressed and maintained at all times during the analysis. A confidential agreement reinforces that information shared within the team is not be transmitted or disclosed outside of the communication mechanisms stipulated by the organization's policies or government legislation.

Slide 46

Interviews

- Conduct as soon as possible
- Be clear about the purpose
- Share what will be done with information
- Use open ended questions
- Allow individuals to tell their story
- Capture interview in a comfortable way
- Interview one person/time
- Be sincere in thanking people

5. Plan for and conduct interviews:

Interviews are key to collecting information for analysis and also help to support those directly involved in the incident. An interview is often the first opportunity that a patient, family member or provider has had to share their detailed perspective about the incident.

Interviews:

- Can cause anxiety, so be respectful and supportive
- Should be conducted as soon as possible, as memories fade quickly and can be distorted in discussions outside of the interview

In conducting the interview:

- Be clear about the purpose
- Share what will be done with the information collected
- Use open ended questions
- Allow individuals to tell their story
 - Seek clarification after they are finished
- Record the interview in a comfortable way
 - Digitally recording the interview is not recommended, as it causes greater anxiety, which will require permission
- Interview one person at a time
- Sincerely thank people for their participation

Goal of all analysis

Slide 47

Goals of all analysis

- What happened
- How it happened
- Why it happened
- What to do to reduce risk of reoccurrence
- What was learned

All incident analysis methods aim to determine:

- What happened?
- How and why it happened?
- What can be done to reduce risk of recurrence?
- What was learned?

Regardless of the method used, the basic principles and steps in the analysis process are the same, however the difference is:

- level of detail, and
- scope of review

Slide 48

Types of analysis

- Comprehensive
- Concise
- Multi-incident

The three types of methods are:

- Comprehensive: used for complicated and complex incidents that result in catastrophic/major harm or risk of harm. Significant amount of time and resources are required.
- Concise: used for localized incidents that are with no, low or moderate severity of harm. Analysis is completed within a short amount of time by one or two individuals.

- Multi-incident: used for reviewing several incidents at once instead of one by one, grouping them in themes. Severity of harm is usually no, low or medium, as well as near misses. This method can be also used to review a group of comprehensive and/or concise analysis.

Selecting a method of incident analysis

Slide 49

Selecting the method

- Severity of incident
- Probability of incident
- Complexity of the factors
- Event of the impact, to the organization
- Contextual factors

When selecting a method to analyze incidents, the following criteria should be considered:

- severity of incident,
- probability of recurrence,
- complexity of the factors that appear to influence the incident,
- event of the impact of the incident on the organization, and
- contextual factors (i.e. initial findings, frequency of occurrence, regulations).

Slide 50

Safety assessment score

UNITED STATES VETERANS AFFAIRS
SAFETY ASSESSMENT CODE MATRIX

PROBABILITY \ SEVERITY	CATASTROPHIC	MAJOR	MODERATE	MINOR
Frequent	3	3	2	1
Occasional	3	2	1	1
Uncommon	3	2	1	1
Remote	3	2	1	1

The severity of the incident should not be the only criteria for selecting an analysis method because there are situations where an incident with a high safety assessment score may be more appropriately analyzed with a concise analysis and other situations where an incident with a low score requires a comprehensive analysis. Useful tools to

assist with this are the Safety Assessment Score (Figure 3.4) and the Criteria to Consider in Selecting an Incident Analysis Method (Figure 3.3) found in the Framework.

Comprehensive analysis method

A detailed or comprehensive analysis of a single incident is generally undertaken when:

- permanent harm or death has occurred,
- there is a significant risk of permanent harm/death,
- incident is complicated,
- incident is complex,
- area impacted is at micro, meso or macro level, and
- contextual pressures are high.

What happened?

Slide 51

Comprehensive: what happened

- Gather information
- Review incident report
- Review additional information
- Create a detailed timeline
- Review supporting information

- Gather information
 - First priority is for the team to gather information relevant to the incident. This stage of the process is intended to answer the “What happened” question.
 - The gathering of facts must be thorough and there must be a systematic process of assessing information needs as well as to ensure the analysis is both thorough and credible. It is recommended that the organization use a template or checklist.
- Review incident report
 - First formal summary of information related to an incident
 - Represents the initial understanding
 - Other sources of information that may trigger a comprehensive analysis include; patient concerns, audits, coroner’s reports
- Review additional information
 - Review the health record in detail
 - Interview all providers who were directly/indirectly involved in the incident
 - Interview patient and family members
 - Visit location of where incident occurred (if possible)

- Secure items that may have been involved in the incident (e.g. labels, devices, syringes)
- Create a detailed timeline
 - Provides information in a narrative, chronological description
 - Provides a detailed understanding of collated information from various sources
 - Fills in the gaps of the initial understanding
- Review supporting information
 - Review existing policies and procedures
 - Establishes the documented organizational expectations related to care
 - Provides a baseline to evaluate current organizational practices in relation to current evidence and leading practice guidelines
 - Other resources; previously reported incidents (e.g. The Global Patient Safety Alerts repository)

How and why it happened

Slide 52

Comprehensive: how & why

- Contributing factors and relationships
- Systems theory and human factors
- Diagramming
- Summarize findings

As the team begins to understand the incident circumstances, contributing factors and relationships will begin to emerge.

- Contributing facts and relationships
 - Use guiding questions (see Appendix G in the Framework) to provide a starting point for analysis as it relates to answering the “how and why it happened” question
 - Recognize all system issues that may have contributed to the incident
 - Focus on the meso, macro, and mega levels of the system to identify all contributing factors
 - Key questions: what was THIS influenced by, what else affected the circumstances
- Systems theory and human factors

Applying systems theory and the principles of human factors can assist in answering questions by focusing the analysis on the systems based contributing

factors. Human factors provide the tools, methods and theories to answer these questions.

- Focus on the interaction between the human and the system and to look for the factors that influence that interaction (e.g. equipment, task, work environment)
- Three human factors methods:
 - Cognitive walkthrough- “think out loud” while simulating the tasks; easiest and most cost effective
 - Heuristic evaluation-audit carried out on various parts of the systems (e.g. equipment, paper forms, computer systems) that were used in the tasks during the incident
 - Usability testing- observation of the human-system interaction with equipment/processes, provides important information about how the human-system interaction occurs in a “real world” setting
- Diagramming
 - Tool that can help the team work through the questioning process
 - Helps the teams to identify and understand the inter-relationships between and among contributing factors
 - Shifts the focus away from individual performance and toward system performance and underlying factors
 - Examples are: Ishikawa (Fish bone) diagram, tree diagram, constellation diagram
 - Constellation diagram-blending of Ishikawa and tree diagram
- Summarize findings
 - Summary of what was found after the analysis
 - Clearly articulates the contributing factors
 - Provides backbone for development of recommended actions
 - Statement of findings
 - Assign to a sub group of the analysis team and review with the full team
 - Develop draft statements which are later finalized by analysis leaders
 - The statements of findings describe the relationships between the contributing factors and the incident and/or outcome. The statements focus on the contributing factors and should be as specific as possible (note that there could be a group of factors that together contributed to the incident or outcome).
 - The suggested statement format is as follows: The contributing factor(s), within the context of the incident, increased/decreased the likelihood that this outcome would occur.

What can be done to reduce the risk of recurrence and make care safer?

- Develop recommended actions
- Suggest an order of priority
- Prepare and hand-off report for endorsement by leadership as appropriate
- Manage recommended actions
- Delegate recommended actions for implementation and empower implementations

What was learned?

- Identify what was learned from the incident so others can take appropriate steps to provide safeguards in their own settings
- Share within the organization; patient/family, those involved in the incident, the analysis team and others as needed
- Share outside the organization; key to preventing additional harm and making care safer, for example repositories such as the Global Patient Safety Alerts

Concise analysis method

Slide 53

Concise analysis

- Commonly used for incidents that resulted in no or low harm to the patient
- New incidents for which a comprehensive analysis was recently completed
- Timely and accurate action on a larger number of incidents
- Focuses on facts, key contributing factors, actions for improvement and evaluation

A concise incident analysis is consistent with the principles and methodology of incident analysis including a systems approach and consideration of human factors. A concise approach is most commonly used for incidents or concerns that resulted in no or low harm to the patient. It may also focus on a new incident for which a comprehensive analysis was recently completed. Using a concise analysis method, meets the need for a timely and accurate action on a larger number of incidents. It is a conscious and deliberate decision to focus primarily on the four aspects below.

- The agreed upon facts
- Key contributing factors and findings
- Actions for improvement (if any)
- Evaluation

What happened?

Slide 54

Concise: what, how and why ...

- Obtain sufficient information to understand
- Have informal discussions
- Analyze information to identify contributing factors
 - system theory and human factors
 - describe the incident and outcome
 - briefly explore categories re: guiding questions
 - define relationships between contributing factors
 - identify findings

Slide 55

... Concise: what, how and why

- Summarize findings
- Recommended actions
 - Known or easily identifiable evidence-based actions for improvement
 - Shared learnings
 - General lessons should be disseminated

Obtain sufficient information to understand what happened in order to understand how and why it happened. The reviewer may have informal discussions with the patient, family member(s), provider(s), manager and or expert(s) in the process(es) and examine the equipment involved in the incident.

How and why it happened

Analyze information to identify contributing factors and the relationships among them

- use system theory and human factors;
- describe the incident and the outcome;
- use the guiding questions (see Appendix G in the Framework) to briefly explore all the categories;
- define relationships between potential contributing factors; and
- identify findings (can be highly relational).

Reduce the risk of recurrence and make care safer

Summarize findings and determine if there is sufficient data to develop recommended actions. Are there known or easily identifiable evidence-based actions for improvement?

If no, is there sufficient knowledge and expertise to develop local solutions for testing, evaluation and formulization?

If yes, processed with formalizing recommended actions and consult with the applicable decision maker for decision and action.

It will be the facilitator or other person(s) designated by the organization to formulize the action plan and ensure that an evaluation strategy is in place to determine if recommendations were implemented and sustained, as well as if there was any known impact to the safety of patients within the targeted care process(es).

Determine if a multi-incident analysis is required to effectively understand the applicable risks to patients. Track and document all key decisions and the action plan/evaluation strategy if applicable.

What was learned?

Concise analysis can contribute important knowledge regarding a larger number of incidents and their contributing factors. The general lessons should be disseminated and findings and/or recommended actions should flow into the higher organizational level for prioritization of risks and actions for improvement within the organization.

Multi-incident analysis method

Slide 56

Multi-incident analysis

- ▢ Analysis of multiple incidents identified by a theme
 - similar composition group
 - cluster, aggregate, meta-analysis
 - Pre-determined theme
 - quantitative and qualitative data
- ▢ Potential to reveal trends or patterns of contributing factors or recommended actions

Many organizations require a method of analysis when there are multiple incidents that are identified by a particular theme (e.g. a group of individual patient safety incidents, similar in composition and/or origin that caused no harm or lesser degrees of harm).

For the purpose of the Incident Analysis Framework, an analysis of multiple incidents is called “multi-incident analysis”. These types of analysis could also be referred to as a cluster, aggregate and meta-analysis, where common features such as a pre-defined theme, involvement of an interdisciplinary team including frontline providers and possibly a patient representative and the use of both quantitative and qualitative methodologies are included in the analysis.

A benefit of multi-incident analysis is that they have the potential to reveal trends or patterns of contributing factors that were not previously predictable. These analyses can also reveal previous recommended actions that were or were not effective.

Prepare for analysis

Slide 57

Multi-incident process

- Determine theme and inclusion criteria
- Gather applicable data
- Review literature
 - include other reporting and learning systems
- Obtain expert opinion
- Develop analysis plan
 - quantitative and qualitative analysis elements

The steps in conducting a multi-incident analysis are below.

- Determine the theme and inclusion criteria (e.g. identify the characteristics if no or low harm incidents to be analyzed [no harm to catastrophic harm] or multi-patient incidents or identify a theme for multiple completed analyses to be reviewed).
- Gather applicable data
 - If applicable, conduct interviews with provider(s), patients/families, and others with knowledge of the incidents and/or care processes involved in the incidents
- Review literature and obtain expert opinions to collect additional background and contextual information to lend perspective to the analysis
 - Review other reporting and learning systems (i.e. Global Patient Safety Alerts) to see if similar incidents have been studied by other organizations
- Develop the analysis plan which will include both quantitative and qualitative analysis elements

What happened?

Slide 58

Multi-incident: what, how and why

- Review previous incidents; comprehensive & concise
- Process map
 - identify quantitative system weaknesses
- Identify contributing factors/similarities
- Recommended actions
- Shared Learnings

Review the patient safety incidents and/or previous comprehensive and concise analysis to look for common trends, patterns and issues. This will include comparing and contrasting timelines, contributing factors and recommended actions from previous incident analysis.

Process mapping, a tool frequently used to support improvement methodology (i.e. Failure Modes and Effects Analysis, Lean/Six Sigma) can also be used to support the identification of system weaknesses when conducting an analysis of multiple incidents.

Use quantitative analysis to look at the frequency of system issues or failure points and if applicable, recommended actions. This is also referred to as descriptive statistics and will include such classifications as severity of harm, type of incident, and patient diagnoses.

How and why it happened

The qualitative analysis involves focusing on the identified contributing factors as well as similarities that may not have been apparent through individual incident review. Narrative descriptions are particularly helpful for this portion of the review. As common patterns are identified, the team may need to further sub-categorize to clarify trends or issues.

When a group of comprehensive and/or concise analysis is reviewed both the contributing factors and the recommended actions may be included in the qualitative analysis.

Reduce the risk of recurrence and make care safer

Develop recommend actions that will lead to system improvement, giving consideration to available supporting information, including evidence-based guidelines and leading practices. Identify both short term and long term strategies. Consider the order of priority for implementation as it relates to organizational context and resources.

It is helpful for the team to consider a measurement and evaluation strategy before forwarding recommend actions to applicable decision makers for final decisions and delegation for implementation.

What was learned

The findings (contributing factors, trends and themes), recommended actions and their outcomes should flow into and be coordinated with the organization's risk management and improvement processes, including processes for communicating and sharing learning.

Developing and managing recommended actions

Slide 59

Develop recommended actions

- Dependent on quality of findings
- High leverage for greater effectiveness
- Use analysis diagrams (e.g. constellation map)
- Analysis team creates, operational leaders validate and implement

Developing and managing recommended actions involves a series of activities at several levels of the organization. The success of the recommended action is dependent on the quality of findings identified in the analysis system. It is important to consider that a few well thought out high leverage recommendations will ultimately be more effective than a lengthy list of low impact actions. As well, in rare instances, analysis may not generate any new recommended actions.

In developing the recommended actions, the use of analyses diagrams (i.e. constellation map diagram) assists the analyses team in evaluating the best leverage points for recommended actions.

Typically it is the analysis team that is responsible for creating the proposed recommended actions and suggesting the order of priority. However the analysis team should consult with others before the analysis report is handed off to those responsible for validating and implementing the actions.

Key features of effective recommended actions

Slide 60

Effective recommendations ...

- Addresses the risk that was identified
- Utilizes the most effective solution
- Long term solution
- SMART (Specific, Measurable, Attainable, Realistic, Timely)

Slide 61

... Effective recommendations

- Targets actions at appropriate system level
- Assigns responsibility at appropriate level
- Positive impact vs. negative impact
- Evidence- based
- Provides context to ensure action/implementation

Healthcare leaders in organizations have expressed the need for a tool to help build more robust and precise recommended actions. The following list presents key features that can be used as a guide in developing recommended actions.

Effective recommended actions:

- address the risk associated with the findings identified during the analysis;
- utilize the most effective solution that is reasonable or possible given the circumstances;
- offer a long term solution to the problem;
- are written in the SMART format:
 - Specific- addresses a clearly defined issue and has a clear cope,
 - Measurable- can demonstrate impact on process and outcomes,
 - Attainable- can be achieved with available resources,
 - Realistic- do a reality check to predict if it will be accepted and implemented, and
 - Timely- have a timeframe for implementation;
- target the actions at the right level of the system and ensure the action is appropriate for that level;
- assign responsibility at the appropriate level in the organization;

- have a greater positive than negative impact on other processes, resources and schedules (e.g. balancing measures);
- are evidenced-based (e.g. research literature, similar recommendations implemented); aim to use the highest level of evidence available (e.g. randomized controlled trials vs. opinions of peers); and
- provide enough context to ensure that if the action is implemented those responsible will understand the rationale.

Hierarchy of effectiveness

Slide 62

Hierarchy of effectiveness



When recommending actions, many possible categories of options with varying degrees of effectiveness are available. From a human factors perspective, the strongest, most effective interventions are those that are physical vs. procedural; permanent vs. temporary.

The Hierarchy of Effectiveness range is below.

- High leverage (most effective)
 - Forcing functions and constraints
 - Automation/computerization
 - Example: ensuring devices intended for use by different routes of administration lack connectivity
- Medium leverage
 - Simplification/standardization
 - Reminders, checklists, double checks
 - Example: restricting the numbers of types of a device, build-in redundant cues
- Low leverage (least effective)
 - Rules/policies
 - Education/Information
 - Example: education sessions, memos- important but used alone will not result in sustained practice change

Order of priority

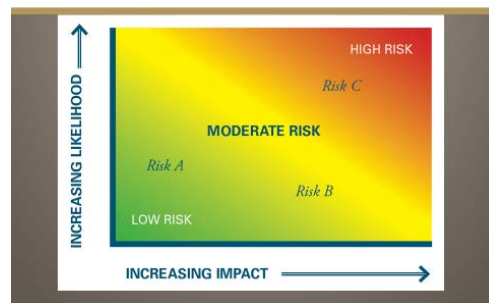
Slide 63

Order of priority

- Need to prioritize is a result of several practical factors
- Consider the following
 - If not implemented, what are the risks?
 - Which actions can be implemented immediately?
 - Are there existing mechanisms in place to implement?
 - Could current efforts in place in one area, apply to other areas?

Slide 64

Heat map tool



The need to prioritize the recommended actions is the result of several factors. These factors include what is related to the organization (e.g. limited resources, recommendations from other sources), related to the external environment (e.g. external pressures from regulatory bodies) and related to the characteristics of the recommended action itself (e.g. the degree of change that is required).

The analysis team is generally responsible for suggesting an order of priority and the desired timeline for completion of the recommended actions. The decisions are then later confirmed by the operational leadership team and then delegated for implementation. In setting the prioritization for the recommendations, consider the following questions.

- What are the risks if the recommended action is not implemented? A useful tool to use for this discussion is a Heat Map, where the level of placement likelihood and impact are used to determine the risk.
- What actions can be immediately implemented? Are they quick, safe patient care wins that will assist to empower the implementation team and others to continue?
- Are there existing efforts in place to implement the recommended actions? Building an inventory, such as a spreadsheet, table or database of current efforts can prove valuable for improvement.

Developing the draft of recommended actions

Slide 65

Developing the draft of recommended action

- Beneficial to consult with others, including patients, families, providers and subject matter experts
- Draft recommendations should be handed off to organizational leaders responsible for approval, allocating resources, empowering staff and monitoring implementation

It is beneficial to have the step of consulting with others to ensure that the recommendations are appropriate, the identified risks have been addressed and there is a high probability to reduce the reoccurrence of this or similar incidents. Consulting with patients and families provides a unique perspective on the incident and should be included where possible. Providers involved in the incident as well as subject matter experts should also be consulted. In requesting feedback, it should be clearly communicated that suggestions will be considered however, for many good reasons, may not be implemented.

The draft recommended actions should then be handed off to an operational leader or team, who will be responsible for the implementation; including approving the actions, allocating resources, empowering others and monitoring the implementation. This should be done through a formal report and an in person meeting. By having a clear record of analysis and any relevant supporting documentation, it will support confidence in decisions related to the analysis.

Validation of recommended actions

Slide 66

Validating decision making

3 steps to validate recommended actions:

- Confirm actions
 - merge with recommendations from other sources
- Assess Validity
 - Attainable, feasible, cost effective priority, alignment
- Approve and set guidelines for implementation

It is important the recommended actions are validated from a strategic and operational perspective. This will additionally support any decisions made regarding if and how

actions should be implemented and should be completed by the responsible individual(s). The following three steps are helpful in guiding such decisions:

Confirm actions

Merge actions from the analysis with recommendations from other sources. This builds on the inventory generated by the analysis team and aims to ensure that actions are considered in light of strategic and operational risks and priorities. Examples include using a simple spreadsheet, patient safety system or performance management system.

Assess validity

Validating the recommended actions should be to ensure the actions are:

- Attainable- where the resources, competencies and tools needed are available and if not, there is a plan to have them in place before implementation of the recommended actions
- Feasible- the culture, the readiness for change, technology, legislature and other contextual factors will support the action and not hinder or compete with it
- Cost effective- may need to conduct a cost-benefit analysis
- Aligned- with both the strategic and operational priorities of the organization

Approve and set guidelines for implementation

This is the final step for validation, with confirmation of the actions to be implemented and a guideline for implementation. Guidelines should be around the following criteria:

- Priority setting for the actions- what should be implemented first?
- Identify the system level target- should it be micro, meso, macro or mega?
- Timelines- when will it start and for how long?
- Accountability- who is the senior leader and implementation lead?
- Success measures- what are our milestones, key successes and how often do we report out?

Delegation and monitoring implementation

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Monitor implementation

- Utilize a tracking system to monitor implementation
 - supports organizational leaders/others
 - provides stakeholders with regular updates
- Translating the recommendations into actions with sustainable change is not easy
 - systematic collaborative approach
 - explicit leadership support
 - sufficient resources

Larsen's Scale

- Descriptive labels to identify the status of progress with each phase of implementation
 1. Considered and rejected
 2. Nothing done
 3. Under consideration
 4. Steps taken towards implementation
 5. Partially implemented
 6. Implemented as presented
 7. Implemented and adapted

The approved recommended actions are handed off to the team or individual(s) responsible to implement the action. This should be done during an in-person meeting to help ensure everyone has a common understanding and is clear on the purpose, objectives and direction of the actions.

Utilizing a tracking or monitoring system for recommended actions is advised as it will support organizational leaders and others to track the status of implementation. Tools that can assist with this are using an Excel spreadsheet, or project management software. With these software tools, a measurement tool for status of implementation is useful, such as the Larsen's Utilization Scale. This scale offers descriptive labels for the implementation status of each recommended action.

Follow through**Follow through**

- Successful implementation is related to a successful analysis
- Challenging if actions are
 - not focused on contributing factors
 - no clear objectives
 - not communicated clearly
 - not visibly supported by leadership

Implementation of recommended actions

The implementation of recommended actions is an important step in the incident management process, with its success contributing to the success of the analysis. However, implementation can be very challenging if the actions are not focused on the contributing factors, do not have clear objectives, are not communicated clearly during the hand over, and are not visibly supported by leadership.

The use of change management or improvement tools is helpful to facilitate implementation of recommended actions in ways that will support success. The Institute for Healthcare Improvement's (IHI) Model for Improvement is one approach that has been used successfully by many healthcare organizations around the globe.

The model has two parts.

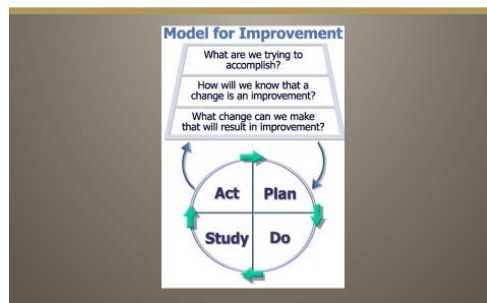
Part 1: three fundamental questions

1. What are we trying to accomplish?
2. How will we know that change is an improvement?
3. What changes can we make that will result in improvement?

Part 2: the Plan-Do-Study-Act (PDSA) cycle to test and implement changes in real work settings

Slide 70

PDSA model



The PDSA process of small cycles of change to implement quality improvements is one example of an activity that enables experimentation within a scientific approach.

Monitor/assess the effectiveness of actions

Slide 71

Monitor effectiveness

- Promotes organizational learning and staff commitment to improving care
- Some recommendations may not have desired effect
- Measurements – balance outcome and process measures

The purpose of implementing system changes is to make the system safer. However, some recommended actions, may not have the desired effect in practice. Thus the

effectiveness of the implemented recommended actions must be monitored to determine if the changes helped or hindered in making the system safer.

Monitoring the effectiveness of recommended actions requires measurement. The most useful measures of recommended actions are those that assess outcomes. Outcome measures provide direct evidence of the effectiveness of actions taken and not just the completion of preventative measures. However, outcome measures should be complemented with process measures that assess the extent to which recommended actions are implemented.

A balance of outcome and process measures allows the individual or group charged with monitoring the recommended actions to interpret their impact and to revise or reinforce if they fail to have the desired impact.

Measurement

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Measurement

- Small samples; “just enough” data taken frequently, clearly defined
- Collect data before changes are made; determine if due to improvements/sustainable
- Examples of data collected: intervention tracking, direct observation, chart review, surveys, run charts

The principal goal of measurement in monitoring recommended actions is improvement. Measurement for improvement emphasizes a practical approach with “just enough” data in small sequential samples. Small samples taken frequently can be more informative than large samples taken less often. Measures need to be clearly defined and the strategies for collecting these data need to be developed with the staff that will collect them. Collecting data on a process before changes are introduced is helpful in demonstrating whether the changes are improvements and whether the improvements are sustained over time. Examples include voluntary reporting, intervention tracking, direct observation of performance, chart review, computerized tracking and surveys.

Useful questions in designing data collection related to measuring recommended actions include:

- Have I defined the data so that I get exactly what I want?
- How accurate is it and does it matter?
- How can the data help me?
- Can I rely on it being consistent?

- What will I do with the data?
- Does my collection strategy work?
- How will I display the data I collect?

See PSEP – Canada Module 9: Methods for Improving Safety for more information on measurement and quality improvement processes.

Closing the loop

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Closing the loop

- Last element of incident analysis
- Share within the organization
- Share outside the organization

Sharing what was learned is the last element of the incident analysis framework. Sharing the learnings both within the organization (e.g. patients, families, staff, and the analysis team) and outside the organization is key to preventing additional harm and making care safer.

An example of sharing learnings within the organization is the use of feedback loops. This may be shared in multiple ways, including memos, storytelling, or safety huddles.

An example of sharing learnings outside of the organization is the use of feed-forward communication loops, such as Global Patient Safety Alerts and informing the public through public disclosure.

Summary

Slide 74

Summary ...

- Safe and just culture
- Patient and family-centered care
- Incidents have varying degrees of complexity
- Analysis: use system thinking
- Analysis: timely, interdisciplinary & objective

Slide 75

... Summary

- Contributing factors inform actions
- Recommended actions : SMART
- Measure/monitor implementation & outcomes
- Share the learnings; internal and external

Safe patient care is a fundamental aspect of providing quality healthcare services. The methods and tools presented in the Canadian Incident Analysis Framework have great potential to improve the safety of care processes in healthcare organizations. Key points to remember in using the framework are:

- the importance to aim to have a safe and just culture;
- ensure that the care provided is patient and family centered;
- incidents have varying degrees of complexity;
- in conducting incident analysis, using system thinking is key to success as well conducting the analysis in a timely manner, where it is interdisciplinary and objective;
- contributing factors inform recommended actions;
- recommended actions should be SMART;
- measure and monitor implementation of recommended actions and their outcomes; and
- sharing the learnings, both internal and external to the organization.

Striving to identify and address the underlying reasons why incidents occur will lead to a greater understanding of hazards in the system and, ultimately to a safer healthcare system for all. This is an integral part of moving the culture of the entire healthcare organization from blame to understanding, learning and improvement.

Potential pitfalls

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Potential pitfalls ...

- Do not to blame individuals involved in a patient safety incident
- Be careful about using hindsight in explaining an adverse event or patient safety incident
- Use the appropriate type of analysis for the appropriate purpose
- Avoid simplistic explanations for failures and faults

Slide 77

... Potential pitfalls

- Do not “shut down” communication between patients, families, providers, staff, leaders
- Be aware and avoid cognitive traps
- Avoid “over” development of recommendations
 - better to have a few that will greatly impact vs. many that will have little impact; its not about the quantity but about the quality of the recommended actions

1. Do not blame individuals involved in patient safety incident
2. Be careful about using hindsight in explaining an adverse event or patient safety incident
3. Use appropriate type of analysis for the appropriate purpose
4. Avoid simplistic explanations for failures and faults
5. Do not “shut down” communication between families, providers, staff and leaders
6. Be aware and avoid cognitive traps
7. Avoid “over” development of recommendations
 - Better to have a few robust actionable recommendations that will impact the outcome rather than having many recommendations that will have little impact

Pearls

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Pearls ...

- Healthcare is a system and this affects thinking about the individual workplace
- Failures are usually caused by bad processes rather than bad people
- Patients, families, staff involved in the incident can be your greatest source of support/suggestions for improvements
- Learn from previous incidents internal/external to the organization

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... Pearls

- Organizations can redesign healthcare services that prepare for failure and faults
- Complexity can impact on relationships
- Recommended actions should have a direct relationship to contributing factors
- Monitoring implementation and outcomes are key for accountability for individuals and organizations
- Active leadership engagement/support

1. Healthcare is a system and this affects thinking about the individual workplace
2. Failures are usually caused by bad processes rather than bad people
3. Patients, families and staff involved in the incident can be the greatest source of support and suggestions for improvements
4. Learn from previous incidents, internal and external to the organization; organizations learn from mistakes
5. Organizations can redesign healthcare services that prepare for failures and faults
6. Complexity can impact on relationships
7. Recommended actions should have a direct relationship to contributing factors: reconcile them
8. Monitoring implementation and outcomes are key for accountability for individuals and organizations
9. Active leadership engagement and support is key to success

Resources

Canadian Incident Analysis Framework (CIAF), Canadian Patient Safety Institute <http://www.patientsafetyinstitute.ca/English/toolsResources/IncidentAnalysis/Documents/Canadian%20Incident%20Analysis%20Framework.PDF>

Specific tools/templates include:

- One page comprehensive analysis pg. 39
- One page concise analysis pg. 46
- One page multi-incident pg. 51
- Team Management Checklist pg. 81
- Challenges and Strategies During the Incident Analysis Process pg. 82
- Analysis Team Membership, Roles and Responsibilities pg. 83
- Sample Analysis Team Charter pg. 85
- Sample Confidentiality Agreement pg. 86
- Checklist for Effective Meetings with Patient(s)/Families pg. 87
- Incident Analysis Guiding Questions pg. 89
- Creating a Constellation Diagram pg. 92
- Incident Report Template pg. 99
- Case Study - Comprehensive Analysis: Elopement from a Long-Term Care Home pg. 100
- Case Study - Concise Analysis: Medication Incident pg. 111
- Incident Reporting and Investigation Legislation pg. 118
- Legislative Protection for Quality of Care Information in Canada pg. 126
- Three Human Factors Methods that can be Used in Incident Analysis pg. 128

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Module 16 Trainer's Notes

Principal message

The single most important message your audience should come away with is that incident analysis for patient safety should be a systematic, collaborative fact finding, objective, approach with the goal to mitigate risk and improve patient care and outcomes.

Module overview

In healthcare, patient safety incidents that impact the lives of patients and families, as well as providers and organizations, can and do occur. In recent years, considerable focus on patient safety has been aimed at different levels: the culture of patient safety within healthcare organizations, the knowledge associated with patient safety (methods and research), analysis of safety incidents (with resulting learning and improvements) and sharing and communicating these with others. Greater understanding of the complexities and limitations of healthcare has also surfaced (e.g. interconnections between services and care, resource demands to implement improvement initiatives, increased visibility of patient safety and the impact of stringent budgets on quality of care).

The Canadian Incident Analysis Framework (the framework) is a resource to support those responsible for, or involved in, managing, analyzing and/or learning from patient safety incidents in any healthcare setting with the goal of increasing the effectiveness of analysis in enhancing the safety and quality of patient care. The framework provides methods and tools to assist in answering the following questions:

- What happened?
- How and why it happened?
- What can be done to reduce the likelihood of recurrence and make care safer?
- What was learned?

This module presents the methods and resources included in the framework which are designed to support organizational learning, quality improvement, a safe and just culture and to improve the success of analysis in enhancing the safety of patient care. The module also discusses “the incident management continuum” which emphasizes how incident analysis is part of the multitude of processes and activities that take place in the aftermath of an incident.

Preparing for a presentation

1. Assess the needs of your audience

Choose from the material provided in the syllabus according to the needs of your expected participants. It is better for participants to come away with a few new pieces of

information, well learned, than to come away with a deluge of information from which they can remember little or nothing.

2. Presentation timing

Allow sufficient time to collect participants' demographic data and complete the pre-test.

The suggested timing for each part of this module is:

Introduction	5 minutes
Incident case & discussion	10 minutes
Presentation	up to 120 minutes
Debrief about teaching methods	10 minutes
Summary	10 minutes
<u>Post-test & Evaluation</u>	<u>5 minutes</u>
Total	up to 160 minutes

3. Number of slides: 79

4. Preparing your presentation

The text in the syllabus was not designed to be used as a prepared speech. Instead, the text provides material you may want to use. The slides have been designed to support and prompt ideas for your presentation. Although the slides closely follow the text of the syllabus, they do not contain all of the content. Their use presumes that you have mastered the content. The bibliography is current.

You may want to make notes on the slide summary pages to help you prepare your talk in more detail and provide you with notes to follow during your presentation.

Remember that you can adjust the slides to suit your presentation content, your style, and to make it feel fully familiar and your own.

Practice your presentation using the slides you have chosen, and speaking to yourself in the kind of language you expect to use, until it is smooth and interesting and takes the right amount of time. The most accomplished presenters and teachers still practice prior to a presentation; don't miss this step.

5. Preparing a handout for participants

The syllabus text and slides in the **Participant's Handbook** were designed to be reproduced and provided to participants as a handout. Take the portion you need; they can be used in their entirety, module by module, or for just one specific topic. Please include the following in each set of handouts:

- **PSEP – Canada Front Cover Page;**
- **PSEP – Canada Acknowledgment Pages** (to acknowledge the source of the material);
- syllabus and slides for **your topic**; and
- appendix material as relevant.

6. Equipment needs (if needed)

- Slide projector and screen
- Flipchart and markers for recording discussion points

Test your equipment beforehand to ensure that it works.

Have a back-up plan so that if there is any equipment failure you can move without panic to your back-up plan. For instance, have in mind that:

- if the slides cannot be shown, you can refer to the hand out slides; and
- if flipcharts and markers are not available, you can have participants list items on their hand outs that you would have written up for all to see.

Making the presentation

1. Introduce yourself

If you have not already done so, introduce yourself. Include your name, title, and the organization(s) you work for. Briefly describe your professional experience related to the information you will be presenting.

2. Introduce the topic

Show the title slide for the module. To establish the context for the session, make a few broad statements about the importance of topic as a patient safety matter. Tell participants the format and time you will take to present the session. Identify the teaching styles that you intend to use.

3. Review the session objectives

Show the slide with the session objectives listed. Read each objective and indicate those that you are planning to emphasize.

4. Present the material

Recommended style: interactive lecture

An interactive lecture will permit you to engage your audience, yet cover your chosen material within the time. You can use as your interactive components the case provided to stimulate discussion and an interactive exercise.

Incident Case content

This is based upon the Case Study J from the Canadian Incident Analysis Framework (CIAF) - Comprehensive Analysis Elopement from a Long Term Care Home. See page 100 of the CIAF.

A teachable moment: discussion after the incident case

After the incident case review, ask the participants for their comments about the issues and the interaction they have just seen. To affirm what they contribute, consider recording the important points on a flipchart or overhead projector.

If the discussion is slow to start, you may want to ask more direct questions, like:

- Does this incident sound similar to incidents in your organization?
- How often do you think incidents like this, occur in healthcare?
- How many incidents like this, have occurred at your organization?
- Do you have a process in place, to review what happened when incidents occur?
- Does your organization have a patient safety team?
- What role can you as a frontline staff/middle level manager play in leading incident analysis for patient safety improvement in your organization?
- What do you think your and other organizations can learn from such incidents?

Use the discussion to set the stage for the material to follow. Do not let the discussion focus on a critique of the details of the incident case.

If the participants do not like something that was said or done acknowledge that there is always room for improvement and ask them how they would do it themselves.

Setting limits to discussion time

It is usually best to limit discussion of the incident case to no more than five minutes, then move on to the presentation. To help move on if the discussion is very engaged, try saying something like:

- let's hear two last points before we move on, and
- now that you have raised many of the tough questions, let's see how many practical answers we can find.

5. Key take-home points

1. Healthcare is a system and this affects thinking about the individual workplace
2. Failures are usually caused by bad processes rather than bad people
3. Patients, families and staff involved in the incident can be the greatest source of support and suggestions for improvements

4. Learn from previous incidents, internal and external to the organization; organizations learn from mistakes
5. Organizations can redesign healthcare services that prepare for failures and faults
6. Complexity can impact on relationships
7. Recommended actions should have a direct relationship to contributing factors: reconcile them
8. Monitoring implementation and outcomes are key for accountability for individuals and organizations
9. Active leadership engagement and support is key to success

7. Summarize the discussion

Briefly, review each part of the presentation. Recap two or three of the most important points that were discussed.

8. Debrief about the teaching method

Tell the group that it is time to consider the teaching method used, how it worked and what its limitations were. Ask them what other methods might work, and what methods would work best *for the topic* in their home institutions. Ask them to consider what method would work best *for themselves as facilitators* and for their *target audience*.

9. Post-test/evaluation

Ask the participants to complete the post-test questions for this module and evaluate the session.