

Wednesday, January 22nd, 2025

Patient Safety and Continuous Quality Improvement: Focus on Root Cause Analysis

Learning Objectives

- Summarize the steps to conduct a root cause analysis
- Identify potential contributing factors to a patient safety event
- Apply system-based theory and human factors engineering principles to advance patient safety

This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada and approved by The Canadian Society of Nephrology. You may claim a maximum of 1 hour (credits are automatically calculated).

Moderator




Ruchi Kumra
BSP, PharmD, MSc(QIPS)
Winnipeg, MB

Speaker



Certina Ho
RPh, BScPhm, MSt, MEd,
PhD
Toronto, ON

The webinar will begin shortly



We begin by acknowledging the traditional custodians of the land on which we virtually meet today. While we are gathered from various locations, it is important to recognize the Indigenous peoples who have stewarded and continue to care for the lands and waters across the world.

We honor their rich cultures, histories, and contributions, and we pay respect to their Elders, past, present, and emerging. In the spirit of respect and solidarity, we commit to learning from and supporting Indigenous communities in their efforts for justice, sovereignty, and healing.

We also encourage all participants to reflect on the traditional lands and peoples of the places they are connecting from today.

LAND ACKNOWLEDGMENT

Certina Ho,

RPh, BScPhm, MIST, MEd, PhD
Toronto, ON

Dr. Ho is an Assistant Professor, Teaching Stream, at the Leslie Dan Faculty of Pharmacy and the Director, Educational Program Evaluation and Scholarship at the Department of Psychiatry, Temerty Faculty of Medicine, University of Toronto.

She also holds faculty appointment at the School of Pharmacy, University of Waterloo, and the Michael G. DeGroot School of Medicine, McMaster University. Her teaching and research involve patient/medication safety and quality improvement, as well as educational program evaluation and scholarship.

Dr. Ho retains her affiliation with the Institute for Safe Medication Practices Canada as a Medication Safety Advisor, with a focus on community pharmacy reporting and learning. After graduating from the University of Toronto, Dr. Ho worked in a variety of pharmacy practice settings, including community, corporate office, drug information, and provincial pharmacy regulatory authority before her recent academic career in higher education.

Since December 2018, Dr. Ho has been serving on the Board of Directors of the Canadian Council on Continuing Education in Pharmacy (CCCEP) as the representative of the Association of Faculties of Pharmacy of Canada (AFPC).



Disclosure Statement

- I have no affiliation (financial or otherwise) with a pharmaceutical, medical device, or communications organization.
- I do not have a relationship with a for-profit and/or a not-for-profit organization to disclose.

Acknowledgements

This webinar includes content prepared by:

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Learning Objectives

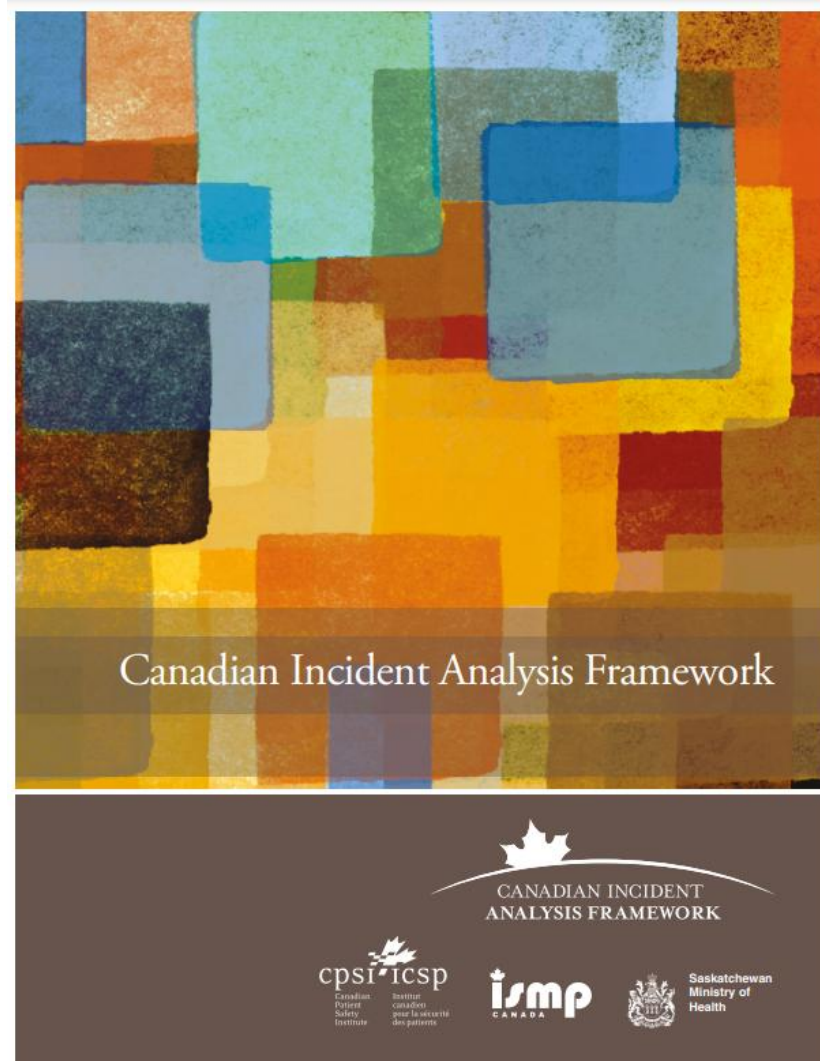
By the end of the webinar, participants should be able to:

- Summarize the **steps** to conduct a root cause analysis (RCA)
- Identify potential **contributing factors** to a patient safety event
- Apply **system-based theory** and **human factors engineering principles** to advance patient safety

Agenda

- Introduction to Root Cause Analysis (RCA): The 5 **Ws**
- Steps to Conduct a Root Cause Analysis: **How-to**
- Application of Learning: **Case Scenario** (If Time Permits)

Canadian Incident Analysis Framework



Incident Analysis Collaborating Parties. *Canadian Incident Analysis Framework*. Edmonton, AB: Canadian Patient Safety Institute; 2012; **39-45, 89-91**. Available from: <https://www.healthcareexcellence.ca/media/gilnw3uy/canadian-incident-analysis-framework-final-ua.pdf>

The 5 Ws of a Root Cause Analysis (RCA)

- WHAT is an RCA?
- WHY is an RCA important?
- WHO should be involved in an RCA?
- WHEN should an RCA be conducted?
- WHERE should an RCA be conducted?

What is an RCA?

- An RCA is an analytical process used to conduct a **comprehensive**, system-based review of **critical incidents** - *incidents resulting in serious harm (loss of life, limb, or vital organ) to the patient, or when there is an evident need for immediate investigation and response*

(Ref: Definition of Terms. ISMP Canada. Available from:
<https://ismpcanada.ca/resource/definitions-of-terms/>)

- An RCA includes:
 - Timeline
 - Contributing factors
 - Recommendations
 - Action plan
 - Evaluation plan

Why is an RCA important?

- An RCA provides an accurate understanding of the factors that may have contributed to an incident, which is a key starting point for solution development.

Who should be involved in an RCA?

- An RCA should be conducted by an **interdisciplinary team** to optimize each individual's unique perspective and experience.
- Invaluable to involve **frontline staff** in an RCA

When should an RCA be conducted?

- An RCA is reserved for complicated and **critical incidents** that resulted in major/catastrophic harm or had a significant risk of harm.

Where should an RCA be conducted?

- The RCA process is applicable to **any health care setting** in which an incident has occurred.

Check-in 😊

Why is it important to conduct an RCA and identify contributing factors?

- A. An understanding of potential contributing factors is a key starting point for solution development
- B. An RCA prevents us from jumping to solutions that are based on our own biases
- C. Frequently, solutions become apparent once contributing factors are identified
- D. All of the above

Check-in 😊

An RCA should be conducted for **all** incidents, irrespective of patient harm.

- A. True
- B. False

How to Conduct a Root Cause Analysis

Goals of Analysis:

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

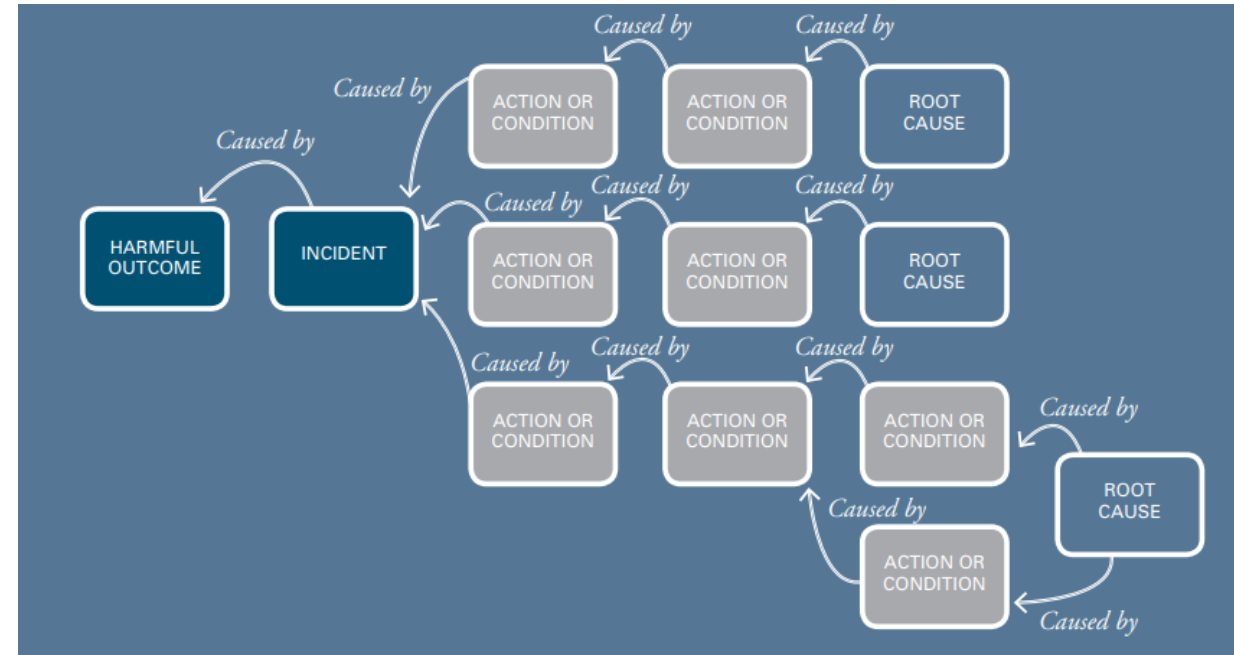
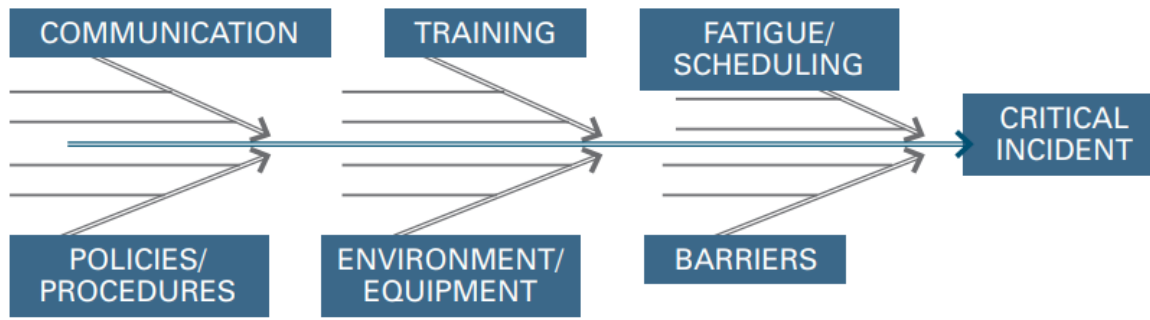
What happened?

- Gather information
 - Review incident report
 - Conduct interviews
- Create a detailed timeline
- Review supporting information

How and why did it happen?

- Analyze information to identify contributing factors and the relationship(s) among them:
 - Use systems theory and human factors
 - Use diagramming (e.g., tree diagram, fishbone diagram, cause-and-effect, or an Ishikawa diagram, constellation diagram)
- Summarize findings

Diagramming Examples



Incident Analysis Collaborating Parties. Canadian Incident Analysis Framework. Edmonton, AB: Canadian Patient Safety Institute; 2012; 39-45. Available from: <https://www.healthcareexcellence.ca/media/gilnw3uy/canadian-incident-analysis-framework-final-ua.pdf>

Check-in 😊

- Reasons for incidents are multi-factorial. Which of the following might you want to consider when analyzing an incident? Select **all** that apply.
 - A. System or process design
 - B. Workflow design
 - C. Human factors principles
 - D. Workarounds
 - E. All of the above

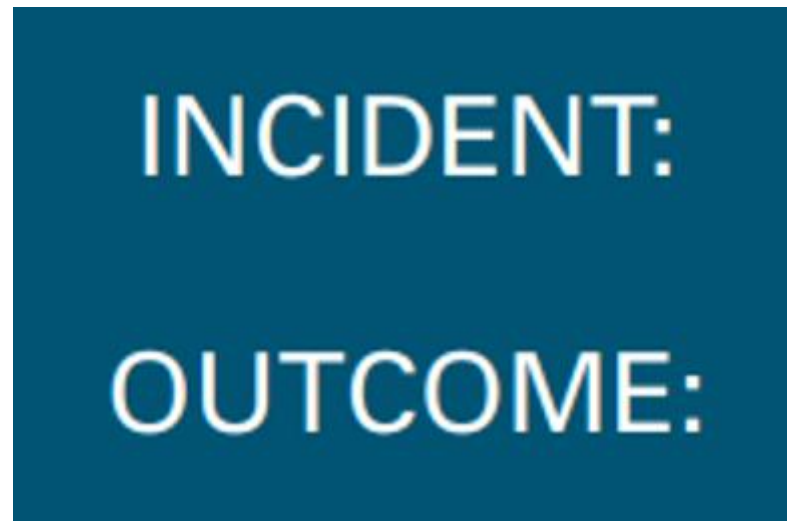
Constellation Diagram

5 steps to create a constellation diagram:

1. Describe the **incident** and the **outcome**
2. Identify potential **contributing factors**
3. Define **inter-relationships** among potential contributing factors
4. Identify the **findings**
5. Confirm the findings with the **team**

Step 1:

Describe the incident and the outcome



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Step 2:

Identify potential contributing factors

- Task
- Equipment
- Work environment
- Patient
- Care Team
- Organization
- Other

Step 2: Identify potential contributing factors



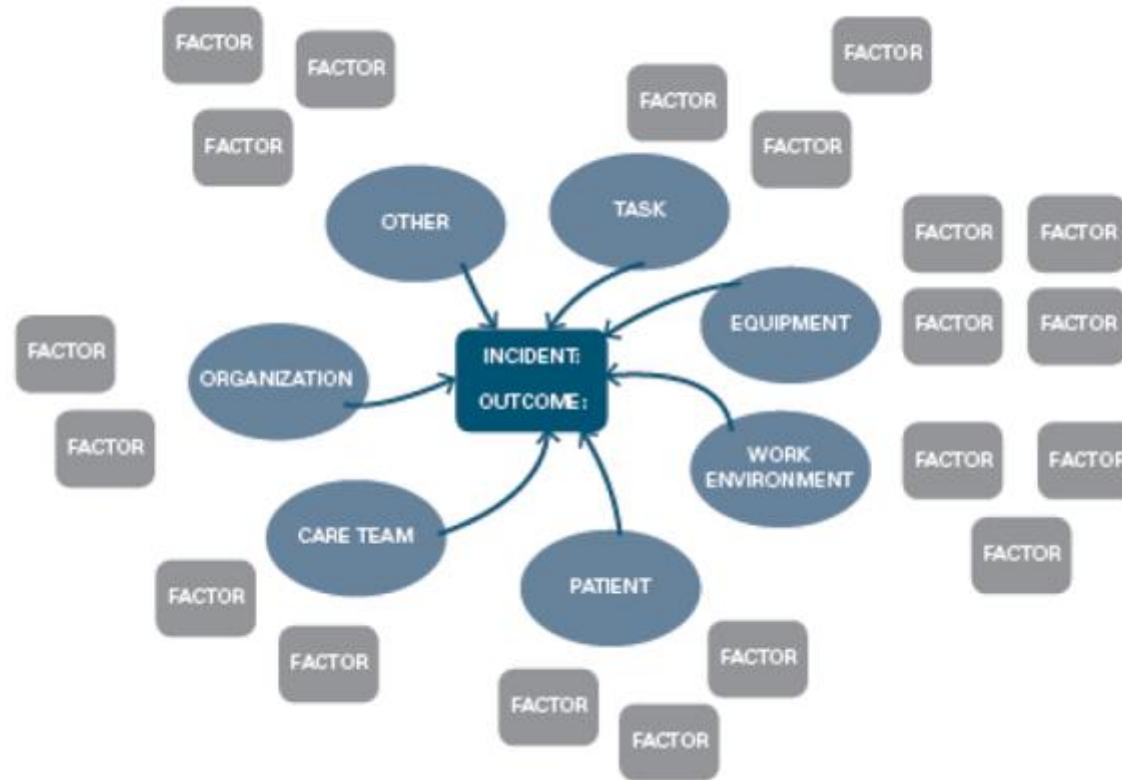
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Step 2:

Identify potential contributing factors

- Tips to identify potential contributing factors:
 - Use the **guiding questions** to brainstorm contributing factors
 - Incident Analysis Collaborating Parties. Canadian Incident Analysis Framework. Edmonton, AB: Canadian Patient Safety Institute; 2012; **89-91**. Available from: <https://www.healthcareexcellence.ca/media/gilnw3uy/canadian-incident-analysis-framework-final-ua.pdf>
- For each potential factor, ask:
 - How and why did this happen?
 - What was this influenced by?
 - What else influenced the circumstances?

Step 2: Identify potential contributing factors



Incident Analysis Collaborating Parties. Canadian Incident Analysis Framework. Edmonton, AB: Canadian Patient Safety Institute; 2012; 39-45. Available from: <https://www.healthcareexcellence.ca/media/gilnw3uy/canadian-incident-analysis-framework-final-ua.pdf>

Step 3: Define inter-relationships among potential contributing factors



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Step 4:

Identify the findings

- Formulate “causal statements” to summarize findings
 - A = Antecedent
 - B = Behaviour/Bridge
 - C = Consequences
- This set of circumstances increased/decreased the likelihood that these consequences would occur.

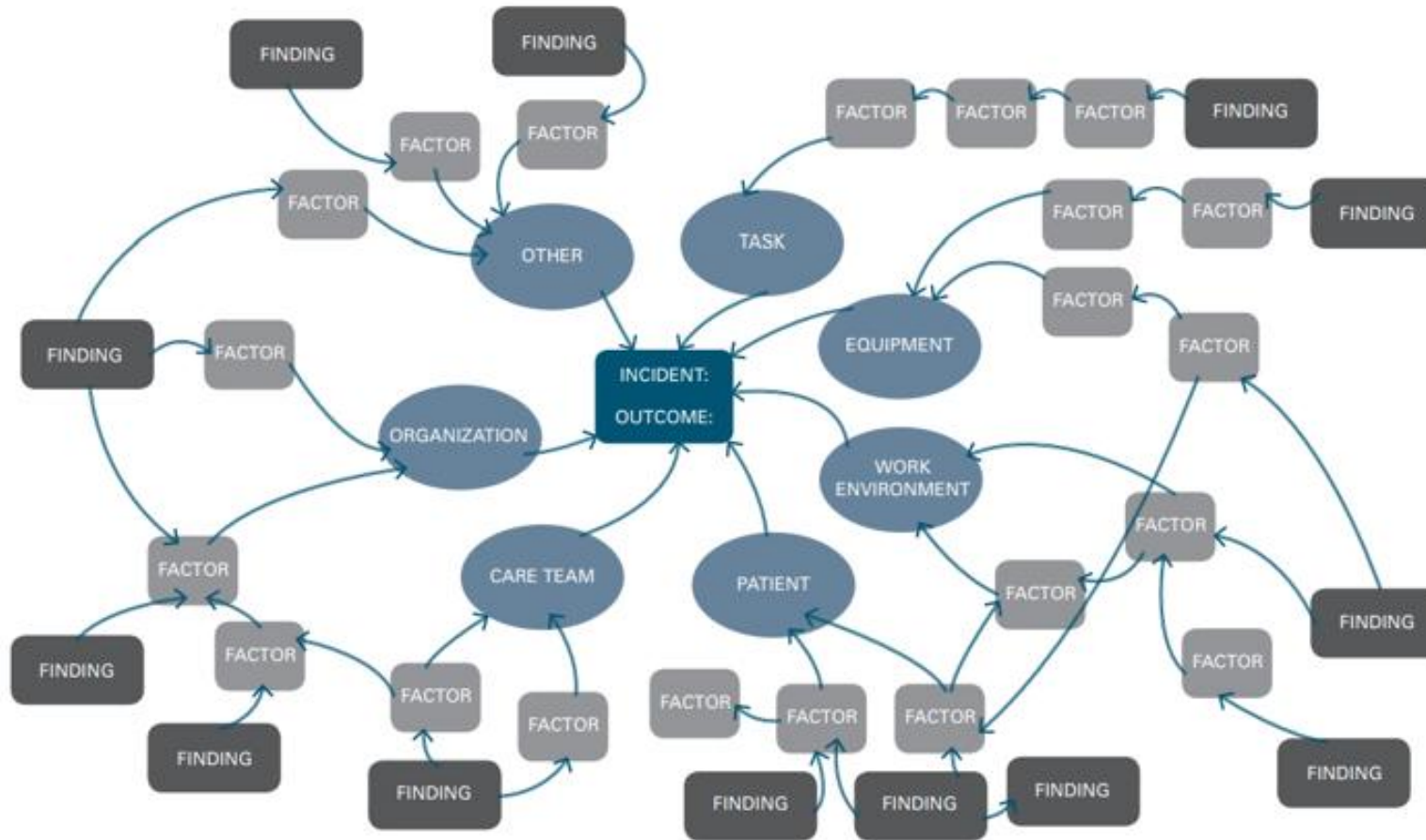
Step 4:

Identify the findings

Example of a causal statement from a fatal incident where hydromorphone was administered instead of morphine:

“Look-alike and sound-alike drug names and the cultural norm to use abbreviated drug names **increased the likelihood** that (through the impact of confirmation bias) **hydromorphone would be selected and administered instead of morphine as intended.**”

Step 5: Confirm the findings with the team

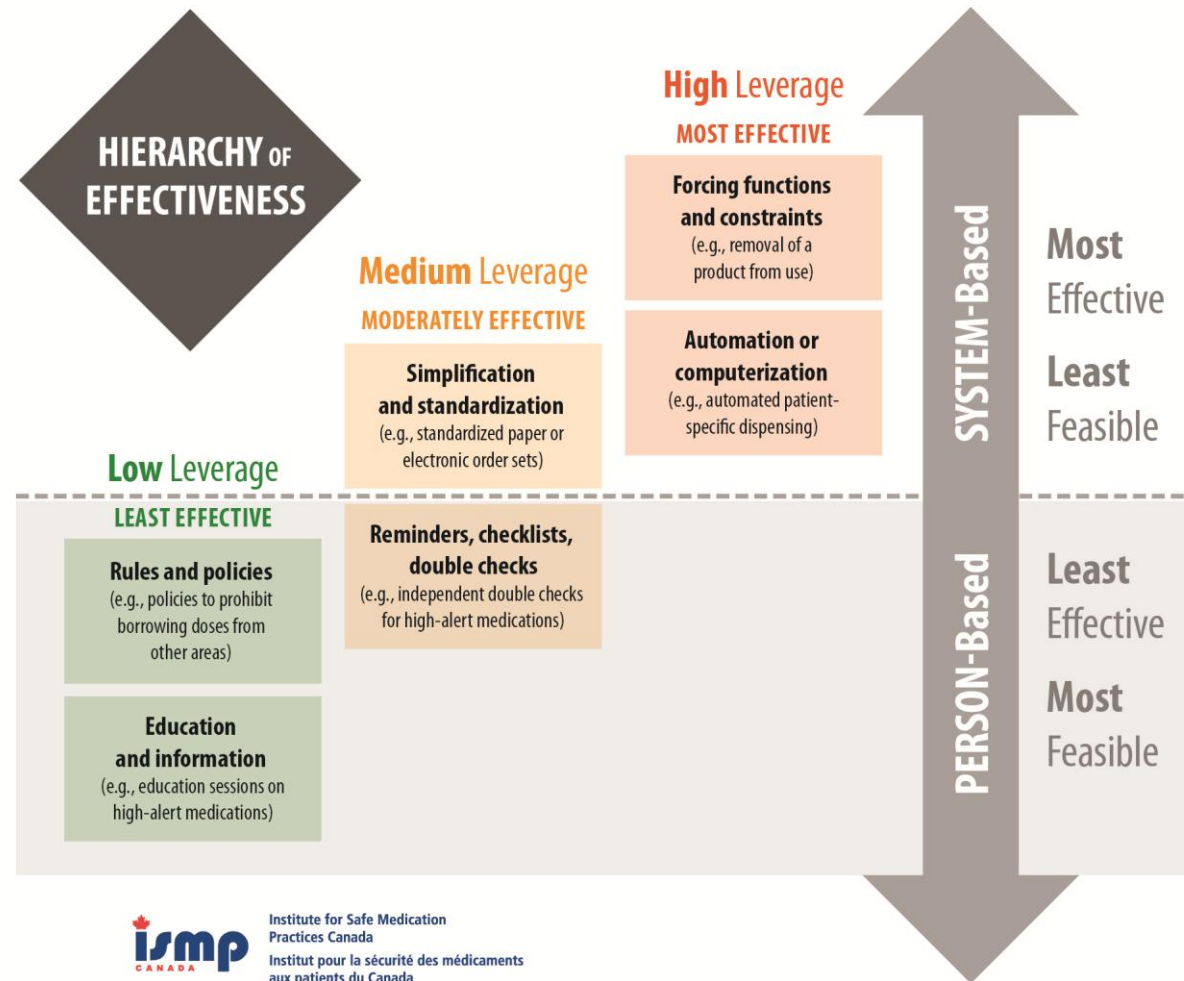


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What can be done to reduce the likelihood of recurrence?

- Develop recommended actions
- Suggest an order of priority
- Prepare and hand-off report for endorsement
- Manage recommended actions
- Delegate recommended actions for implementation

Develop an Action Plan | Error Prevention Principles



Designing Effective Recommendations. Ontario Critical Incident Learning 2013; 4: 1-2. Available from: https://www.ismp-canada.org/download/ocil/ISMPCONCIL2013-4_EffectiveRecommendations.pdf

Action Development

- These are “actions”
- Clear and concise
- Specifically address root causes
- Offer long-term solutions vs. temporary “workarounds”
- SMART: Specific, Measurable, Attainable, Realistic, Timely

Check-in 😊

Which of the following are NOT system-focused actions, and therefore unlikely to have a lasting effect on safety? Select **all** that apply.

- A. Pay more attention
- B. Drink coffee and stay alert
- C. Be more careful next time
- D. Just say sorry and move on
- E. All of the above

What was learned and how can the learning be shared?

- The ultimate purpose of a critical incident investigation is always to prevent similar occurrences and thus improve safety

Key Learning Points

- An RCA is an analytic process used to conduct a **comprehensive**, system-based review of **critical incidents**
- An RCA provides an accurate understanding of the potential contributing factors for solution development
- Goals of an RCA:
 - What happened?
 - How and why did it happen?
 - What can be done to reduce the likelihood of recurrence and make care safer?
 - What was learned and how can the learning be shared?

References

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- Wichman K, Greenall J. Using root cause analysis to determine the system-based causes of error. *Canadian Pharmacists Journal* 2006; May/Jun 139(3): 63-65. Available from: <https://www.ismp-canada.org/download/CPJ2006MayJun.pdf>

Q&A

THANK YOU

Evaluation survey will be sent to you after this webinar.
Please complete the evaluation in order to receive your certificate

1 hr - Section 1 –
Group Learning credits

