



CANADIAN INCIDENT ANALYSIS FRAMEWORK

Developing and Managing Recommended Actions

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3.6.6 Developing and Managing Recommended Actions

Developing and managing recommended actions involves a series of activities at several levels of the organization aimed to determine, “What can be done to reduce the risk of recurrence and make care safer?” The success of the recommended actions is dependent on the quality of findings identified in the previous analysis step (how and why it happened). 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. Note that in rare instances, analyses may not generate any new recommended actions (in particular, concise analyses).

Develop Recommended Actions

The analysis team has a foundational role in the development of recommended actions. Findings identified in the previous analysis step (how and why it happened) are reviewed by the team and actions proposed to address the contributing factors that allowed the incident to occur. Use of analysis diagrams (like the constellation diagram) supports teams in evaluating the best leverage points for recommended actions. The analysis team is generally responsible for proposing recommended actions, suggesting an order of priority, and consulting with others before the analysis report is handed off to those responsible for validating and implementing the actions.

Key features of effective recommended actions

Healthcare leaders and those involved in analysis in Canadian healthcare organizations expressed the need for a tool to help build more robust and precise recommended actions. The list of key features presented below, is a guide that can be adapted by teams and used locally. 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 (*Figure 3.9*).⁶⁵
- Offer a long-term solution to the problem.
- Are written using the “SMART”⁶⁶ format:
 - Specific – tackle a clearly defined issue and have a clear scope;
 - 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, 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 (see *Section 2.2* for a description of system levels). If, for example, in a medication error incident one of the recommendations is to change the label design, the responsibility for implementation lies outside the organization where the incident occurred, making this a national or international effort.
- Assign responsibility at the appropriate level in the organization.
- Have a greater positive than negative impact on other processes, resources and schedules (balancing measures should be in place to ensure that unintended consequences are known and understood).

- Are based on evidence that shows the impact of this or similar action. Consider research literature, similar recommendations implemented in the organization (e.g. from accreditation, patient complaints) or externally (e.g. from the *Global Patient Safety Alerts*).¹³ Aim to use the highest level of evidence available (randomized controlled trials are the highest, followed by controlled observational studies, uncontrolled studies, opinion of experts and opinion of peers).^{67, 68}
- Provide enough context (explanation, facts) to ensure that if the action is implemented, those responsible will understand the rationale behind it.

One of the benefits of using human factors principles to assist in identifying contributing factors is that the same approach can be used to identify and evaluate the effectiveness of recommended actions. In other words, identifying systems-based contributing factors correctly should lead to systems-based solutions.

Figure 3.9: HIERARCHY OF EFFECTIVENESS

When recommending actions, many possible categories of options with varying degrees of effectiveness are available. The team should be apprised of this range (see below, listed in order from most effective to least effective) and encouraged to recommend the most effective solution that is reasonable and/or possible given the circumstances. Note that items such as training and policy development are necessary components, but when used alone, do not change the underlying conditions that lead to the incident.

From a human factors standpoint, the strongest interventions are “physical rather than procedural and permanent rather than temporary.”⁶⁵ Organizations may find the assistance of human factors engineers or ergonomists helpful in determining if the proposed actions will be effective from a human factors perspective.

OPTIONS FOR CHANGE:^{37,65,69}

1. Forcing Functions and Constraints
2. Automation/Computerization



HIGH LEVERAGE - MOST EFFECTIVE

(e.g. installing grab bars; ensuring that devices intended for use by different routes of administration lack connectivity)

3. Simplification/Standardization
4. Reminders, Checklists, Double Checks



MEDIUM LEVERAGE

(e.g. restricting the number of types of a device; reducing reliance on memory and vigilance; build-in redundant cues)

5. Rules and Policies
6. Education and Information



LOW LEVERAGE - LEAST EFFECTIVE

(e.g. education sessions, memos, etc.)
(while these are important, when used alone they will not result in sustained practice change)

In many cases, a systems-based recommended action involves a change or improvement to a process or protocol, work areas, software, order forms or equipment. A “mistake-proofing” step assists teams to determine whether the recommended action(s) will have the desired effect(s). In this step, team members assess whether the recommended action, if implemented, would have prevented the incident or mitigated the harm. It is also an opportunity to consider the potential for introducing unintended consequences to processes (e.g. creating unnecessary steps or added workload, possibly leading to unsafe work-arounds).

Consideration needs to be given to evaluating the impact of the actions before implementation. One way to do this is to conduct one or more of the methods described in *Appendix N*: cognitive walkthrough, heuristic evaluation or usability testing. The method selected will depend on the complexity of the sub-system being changed and the potential severity if the recommended action fails or introduces unintended consequences. In general, if the consequences are potentially more severe, it should be evaluated with usability testing or a combination of the methods, and the recommended action modified and improved before implementation. Failure Mode and Effects Analysis (FMEA)^{59, 60} is another prospective analysis technique that can be used to evaluate the impact of a proposed process change.

The initial focus is on the **elimination** of risk to patients. If there are no actions that can be applied to eliminate the risk, the team should seek the most appropriate controls to reduce the possibility of recurrence. It is important to note that applying a **control** means that although checks will be in place, there still is a chance of reproducing the same or related circumstances that led to the original incident. There are occasionally circumstances under which a team may choose to **accept** one or more identified factors without further intervention. The frequency and/or severity of the incidents may not be significant, or it may be that one or more of the identified factors cannot be altered. For example, in reviewing an incident related to lack of timely access to tertiary care, the team would have to accept the fact that this level of service will not be made available in remote locations and focus attention on rapid transfer of patients when such services are needed (in other words, implement a control measure).

A few well thought out high-leverage recommendations will ultimately be more effective than a lengthy list of low-impact actions.

Suggest an order of priority for recommended actions

The need to prioritize the recommended actions is the result of several practical factors:^{10,14}

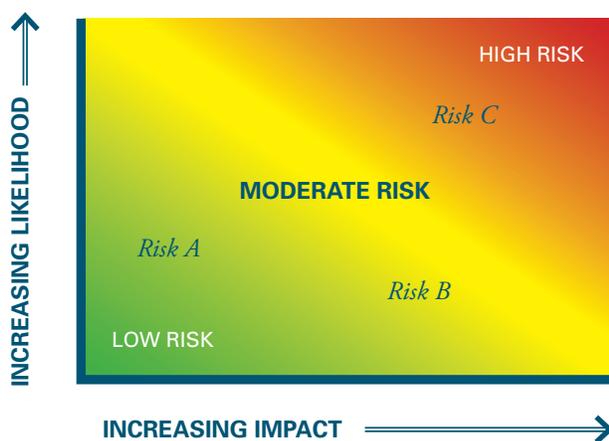
- » Related to the organization:
 - o Abundance of recommendations from multiple sources generated from accreditation, patient complaints, insurance claims, coroner reports and others;
 - o Limited resources (budget, staff time) to ensure good follow through of quality improvement and risk management initiatives; and
 - o Additional priorities and strategies described in strategic plans.
- » Related to the external environment:
 - o A variety of external pressures and requirements influence operations

- including: required organizational practices, regulatory and policy requirements;
 - o Public reporting and compliance with certain indicators; and
 - o Reports of similar incidents publicly available.
- » Related to the characteristics of the recommended action itself (degree of change required).

The analysis team is generally responsible for suggesting an order of priority and desired timeline for completion of recommended actions. This is later confirmed by the senior team and delegated for implementation. The following criteria may assist in the prioritization process:

- If the recommended action is not implemented, what are the risks (the worst possible outcome) for the patient, providers, organization? If possible, illustrate this using the severity assessment score (*Section 3.6.2, Figure 3.4*) or a heat map⁷⁰ (*Figure 3.10*).
- Which actions can be immediately implemented? Consider if there are quick, safe patient care wins that will empower the implementation team and others to continue. (It is important to emphasize that small wins are steps in the right direction, not the final destination.)
- Also, consider if there are existing mechanisms (initiatives, programs or other improvement efforts) in place to implement the recommended action(s). Building an inventory (via a table, spreadsheet or other venue) of current efforts in place to address this or similar issues (contributing factors) can prove valuable for improvement. The searchable inventory could be a living document maintained and used by all levels in the organization.
- If possible:
 - o Recommend actions for different levels in the organizations and discuss what the most important action is at each level; and
 - o Estimate the resources (human and financial) and timelines needed to implement each recommended action.

Figure 3.10: EXAMPLE OF A HEAT MAP⁷⁰



An example of a tool that can be used to summarize the draft prioritized recommended actions is provided in *Figure 3.11*. For each column, enter a descriptor (high/medium/low or other as applicable), or a few short comments.

Figure 3.11: EXAMPLE OF TABLE TO SUMMARIZE AND PRIORITIZE RECOMMENDED ACTIONS

RECOMMENDED ACTION (category, identification, source)	RISK (severity assessment)	HIERARCHY OF EFFECTIVENESS (high, medium, low leverage)	PREDICTORS OF SUCCESS (alignment, existing mechanisms, quick wins)	SYSTEM LEVEL TARGETED (micro, meso, macro, mega)	STRENGTH OF EVIDENCE (note, if available, type)	SUGGESTED ORDER OF PRIORITY (or suggested timeframe)

Consult on the draft recommended actions

Where possible, a consultation step may be beneficial in order 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. Patients/families have a unique perspective on the incident and should be invited to provide their improvement ideas to the team. Providers from the area where the incident occurred, as well as experts should also be consulted. All providing feedback on potential actions should be advised that their suggestions will be considered, but for many good reasons, may not be implemented. These reasons should be explained to the contributor.

Prepare and hand-off report

A final task of the analysis team is to include the recommended actions and the corresponding rationale (the findings of the analysis) in a report that is provided to those responsible for approving the actions, delegating them for implementation, allocating resources, empowering and monitoring implementation (most frequently a senior manager or quality committee).

Having a clear record of the analysis and relevant supporting documentation will support confidence in decisions related to the analysis. If the steps, facts, evidence and supporting documentation are tracked throughout the analysis, the writing of the report should be relatively straightforward. The report will inform the basis for those responsible to make decisions regarding recommended actions. See *Appendix I* for a report template.

Frequently, the analysis team will disband once the report is handed off. To ensure appropriate follow-up, a tracking mechanism should be put in place to trace the implementation of recommended actions and their accompanying outcomes (see *Figure 3.12* for an example).

Manage Recommended Actions

The individual or group of individuals (potentially a senior leader or organizational quality committee) receiving the analysis report is responsible to ensure that the recommended actions are validated from a strategic and operational perspective, as well as delegate and empower the implementation of approved actions. This individual or group of individuals will generally be required to support decisions related to implementation of actions to organizational leaders and other stakeholders, while demonstrating good stewardship of available resources and considering the long-term well-being of the organization.

Validate actions from strategic and operational perspectives

The analysis report, including recommended actions, needs to be evaluated by the responsible individual(s) in order to decide if and how actions should be implemented. The following three steps may be helpful in guiding their decisions:

1. Confirm actions

To facilitate confirmation of the recommended actions, the responsible individual(s) may choose to begin by **merging actions from the analysis with recommendations from other sources**. This builds on the inventory generated by the analysis team (*Figure 3.11*) and aims to ensure that actions are considered in light of strategic and operational risks and priorities. Ideally a centralized inventory is created to capture current recommendations in the organization from all sources and their status (e.g. patient complaints, trigger tool findings, insurance claims, accreditation, coroner). The inventory can be housed in a simple spreadsheet or included in the organization's patient safety or performance systems.

It may be helpful to consider sorting the recommended actions by the main categories of contributing factors (task, equipment, work environment, patient, care team, organization, other) and including high-level key information about each recommended action (e.g. estimated risk for the organization, implementation status). An inventory will assist with the prioritization steps by ensuring that the recommended actions for this incident are aligned with and not competing with other ongoing efforts in the organization. Regular maintenance of such an inventory is required.

2. Assess validity

Validating the recommended actions is done to ensure that the actions are:

- Attainable (the resources, competence and tools needed are available – if not, there is a plan to put them in place before implementation starts).
- Feasible (the culture, readiness for change, technology, legislation and other contextual factors support the action and are not competing with it).
- Cost-effective (potentially a cost benefit analysis may be needed).
- Aligned with the strategic and operational priorities of the organization (implementation of the actions will not create a void in other areas or programs).

3. Approve and set guidelines for implementation

A final validation step includes confirmation of the actions to be implemented and high-level guidelines for implementation. Guidelines for implementation should focus around the following criteria and include a brief rationale:

- Set an order of priority for the actions – what should be implemented first?
- Specify the system level targeted (micro, meso, macro or mega). Consider if the recommended actions should be generalized to other areas of the system. For example, if the incident is related to the use of a concentrated form of an injectable medication in one area of a hospital, it would be beneficial to address the management of the medication in all areas of the hospital, and also to consider the management of similar concentrated

- injectable medications using the same intervention, at the same time.
- Timelines – start time and estimated duration.
- Accountability – include a senior leader and an implementation lead.
- Propose success measures, milestones and determine reporting frequency.

Once approved and validated, recommended actions are prepared for hand-off to the team and individual(s) responsible for implementation. There should be a process in place to share information about actions recommended and implemented with the patient and family as well as with the providers in the area where the incident occurred, organizational leaders, and others as needed. See *Section 3.8* for more information about learning and sharing.

Delegate recommended actions for implementation and empower implementation

The approved recommended actions are handed off to the team or individual(s) responsible to implement the action. If possible this should be done during an in-person meeting so everyone has a common understanding and is clear on the purpose, objectives and direction of the actions. Clarity is important because the senior leader and the team responsible for implementation will base their work plans on the information received about the recommended actions during the hand-off process. It is important to ensure follow-through and follow-up of the status of the actions.

The handover should not be a burden for the responsible individual(s) as it is based on the validation work done previously. Focus should now be on showing support and empowering the implementation team as there is potential that this effort may be met with resistance that is often inherent to organizational change.

Utilizing a tracking system for recommended actions is encouraged because it will support organizational leaders and others to track the status of implementation. Periodic status updates can be made available and include related actions that are being implemented. *Figure 3.12* provides an example of a tool to track the trajectory of recommended actions. An Excel® spreadsheet or Microsoft Project® software may also be helpful.

Figure 3.12: EXAMPLE OF A TOOL TO TRACK THE IMPLEMENTATION STATUS OF RECOMMENDED ACTIONS

CATEGORY	RECOMMENDATION	SOURCE AND ID#	DATE ENTERED	PROGRESS STATUS <i>(Figure 3.13)</i>	ORDER OF PRIORITY OR TIMEFRAME <i>(end date)</i>	TARGET AREA	RISK LEVEL	INDIVIDUAL RESPONSIBLE
TASK FACTORS								

Translating incident analysis recommendations into action and sustainable change is not easy. Real improvement will only occur when a systematic, collaborative approach is used that has explicit leadership support and sufficient resources. These resources must include quality improvement and patient safety facilitators who have received ongoing education in the applicable methodologies and have developed and honed their skills over many years of experience.

Figure 3.13: THE LARSEN SCALE

One of the tools to track progress status is the Larsen Scale.⁷¹ The scale offers descriptive labels for the status of the project.

Considered and Rejected
Nothing Done
Under Consideration
Steps Taken Toward Implementation
Partially Implemented
Implemented as Presented
Implemented and Adapted