



CANADIAN INCIDENT ANALYSIS FRAMEWORK

System Levels

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Labelling an incident as *complicated* or *complex* is one aspect to consider when deciding how it should be analyzed, and this determination should be made by consulting with those responsible for analysis. Additionally, incidents that appear to be *simple* early in the analysis process may be deemed *complicated* once more is known and the incident is better understood. It is important to refrain from making assumptions early in the process as to the degree of complexity without having a full understanding of the incident circumstances.

Sphere of Influence

Sphere of influence refers to the number and strength of interconnections between the parts of the system.³¹ A particular contributing factor could be influenced by any number of other factors. For instance, an incident may result from the failure to safely transfer a patient from a bed into a wheelchair. One contributing factor may be that the lift used to facilitate the patient transfer is new to the service area. Another contributing factor may be that training did not occur before the lift was put into operation. In this case, the lack of training and the new lift influenced one another. Additional contributing factors may be the unavailability of a trainer from the supplier and that the lift was moved into service sooner than planned to replace another unserviceable lift device. All of these factors (new lift, no training, no training available from the supplier, and the urgent replacement of an unserviceable lift), when taken together, create a confluence of factors that acted upon one another and contributed to the incident.

In incident analysis, the sphere of influence should be considered when analyzing and prioritizing contributing factors, especially when using the constellation diagram.

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 analysis to visualize the incident and factors that contributed to the incident; it is explained in detail in *Appendix H*. The sphere of influence is visualized by connecting the contributing factors that influenced one another. It is not intended to be linear in its representation. This step will support understanding of how a particular grouping of contributing factors, acting upon or in connection with one another, combined to produce a specific incident that may prove problematic for other patients in similar circumstances if not addressed.

In a complex incident, where elements constantly interact and influence each other, the constellation diagram and contributing factors identified should be considered a “snapshot” of the incident and the context. The role of the analysis team is to develop recommended actions to address the identified local factors; based on this snapshot view, decision-makers and leaders of the organization need to identify and act on findings that affect the organization as a whole.

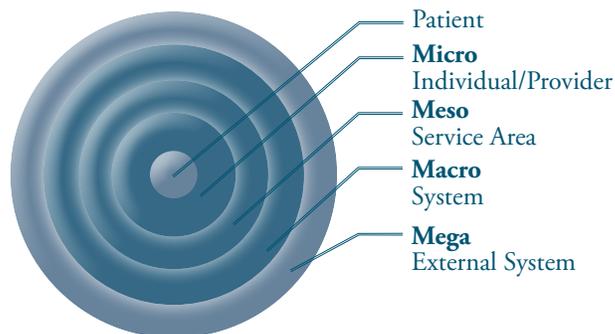
System Levels

Systems are generally viewed from various levels (stratification) because there are differences in goals, structures and ways of working in different parts of an organization. There is general agreement that the following four levels (three internal and one external to the organization) are representative of most systems,³² however, each organization may look at these levels in a slightly different way as there may be some variation across healthcare sectors (*Figure 2.3*).

In analysis, system levels should be considered when selecting the method of analysis, analyzing contributing factors, or prioritizing recommended actions.

It is important to maintain focus on the level where activities will predominantly take place and how that level is connected with (or influences) the neighbouring levels.

Figure 2.3: SYSTEM LEVELS



- **Micro** = The point where the care providers interact with the patient (e.g. the clinical team or service area that provides care).
- **Meso** = The level responsible for service areas/clinical programs providing care for a similar group of patients, typically part of a larger organization (e.g. a home care or a cardiac care program).
- **Macro** = The highest (strategic) level of the system, an umbrella including all intersecting areas, departments, providers and staff (e.g. boards, healthcare network, integrated health system or region that includes several organizations).
- **Mega** (external) = The level outside the organizational boundaries that influences the behaviour of more than one system. The different sectors of healthcare such as regulatory bodies, licensing organizations, professional groups, liability protection providers, provincial and federal governments, national patient safety and quality organizations, the healthcare industry and the community – all fall into this category.

There are multiple connections within and among the four levels, reinforcing the need to consider these levels in order to understand and better manage patient safety incidents. Understanding how a particular system works is important to ensure that the solutions are developed with support from the right individuals and targeted, with precision, at the appropriate level of the organization. For instance, a problem may exist within a specific micro-system, such as an emergency department. Ideally, any potential solutions would be developed with input from representatives of the department. Once developed and tested in the originating emergency department, the transferability of the solution is determined; a particular solution may or may not be transferable to other emergency departments (meso-system) or to all departments (macro-system). Expansion of implementation should proceed when improvements are measured and known in one area and should be implemented cautiously and measured in other areas of the system, as results can vary widely depending on the context.

Context

Merriam-Webster defines context as the interrelated conditions in which something exists or occurs: environment, setting.³³ Context can include a combination of relevant internal and external conditions³⁴ specific to the incident and system that influence the incident analysis process.

When conducting the analysis or managing the incident, teams need to consider internal factors, such as pressures and priorities generated from any of the following:

- Incident data (historical reports or recommendations/actions) from the internal reporting system, patient complaints, accreditation reports, insurance claims, civil litigation, etc.;
- Short and long-term strategic priorities and action plans; and
- Resources available (human and financial), including leadership support and coordination.

External pressures such as the following also require consideration:

- Regulations, requirements, preferred practices;
- Evidence from literature (e.g. the risk and frequency of the incident, its impact and cost, evidence-based interventions);
- Information from public patient safety reports/databases (e.g. *Global Patient Safety Alerts*,¹³ *ISMP Canada Safety Bulletins*³⁵); and
- Anticipated demands from patients, public, media and other stakeholders.

In incident analysis, context should be considered when selecting a method of analysis, analyzing contributing factors and prioritizing recommend actions.

Without a good understanding of the context, incident analysis may not have the desired impact because the recommendations generated are not crafted to fit the reality of the organization. In order to accurately perceive the context, the involvement of organizational leadership is essential.

2.3 LEADING PRACTICES

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.³⁶

Key features of incident analysis: ^{9, 37}

- Timely, beginning as soon as possible after the incident;
- Inter-disciplinary, involving experts from the frontline services, patient or family, and non-regulated staff where applicable (e.g. clerical, cleaning, maintenance staff); and
- Objective and impartial.

To be thorough, an incident analysis must include: ^{9, 37}

- A detailed description of the incident being analyzed;