

Using Incident Analysis to Improve Patient Safety

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Incident analysis overview

Benefits of incident analysis — *The reasons for doing it*

Teams need a systematic and effective way to analyse an incident or situation or a pattern of incidents or situations in order to learn how to prevent the incident from happening again. A method teams can use is incident analysis to help teams and the organization understand in detail why an incident, event or situation happened and identify and implement actions needed to **prevent the same incident** from happening again or to reduce the probability that the same incident or situation will happen again. The benefits of analysis are in the box.

Benefits of analysis of an incident

Guide

Analysing an incident can help staff and a healthcare organization to:

- **describe the incident** completely and **objectively**
- **identify and preserve** for further analysis **information, materials or equipment** involved in the incident
- **analyse the processes or systems** used in the organization that relate to the incident, particularly the differences between how people think a system or process works and how it actually works
- figure out **if the processes or systems involved can be improved** and if so, how
- find **true causes** of the breakdown in systems or processes that caused the incident
- identify **factors** that could have **contributed** directly or indirectly to the occurrence of the incident
- decide on **ways to prevent the recurrence** of the same or a highly similar incident in the future (or strengthen the probability that there will be a positive response to the same potential incident) and implement those ways.

In addition:

- The **tools** used in incident analysis **can be used in other situations** to contribute to improvements in patient care or service.
- The approach indicates to staff that the organization will **not automatically blame the individuals** involved in an incident. The intent of the analysis is to look objectively and systematically at the incident in detail and identify its true causes and contributing factors.
- The organization can **cumulate evidence** about the factors that lead to incidents that harm or could harm a patient, member of staff, other people or the organization **and act to address the factors.**

Analysis terms and questions — *Being clear about what to analyse*

Incident analysis should help teams to ‘get to the bottom’ of the circumstances that led or contributed to an incident and take appropriate and effective action to prevent the recurrence of the incident or minimize the probability of recurrence. Definitions of incident analysis are in the box.

Term	Meaning	Definition
Incident analysis (root cause analysis)	<p>A structured retrospective analysis of an incident or situation that aims to identify its true causes and the actions needed to eliminate them, using a wide range of approaches, tools and techniques to uncover causes¹</p> <p>A structured methodology for identifying causal or contributing factors underlying an adverse event or other critical incident and acting on the factors²⁻⁴</p>	

Incident analysis is designed to answer these basic questions about an incident or a situation that has caused or could cause harm.²

- **What** happened?
- **Why** did it happen?
- **What can be done to prevent it** from happening again?

In addition, the analysis should answer the following question:⁵

- **Has the risk of recurrence of the incident actually been reduced?**

The methodology can be used for any problem, situation, circumstance or shortcoming for which analysis is needed to find causes in order to identify the action needed to achieve improvement.

How incident analysis fits into patient safety — *Delivering patient care to avoid harm*

Patient safety programmes are established in healthcare organizations to drive the reduction of actual or potential harm to patients. One aspect of a patient safety programme is the reporting and analysis of incidents or situations that have or could have led to harm to a patient, other person or the organization. Terms used frequently are in the box on the next page.

Term	Meaning	Definitions
Adverse event	An unintended injury caused by clinical intervention as distinct from the disease process sufficiently serious to lead to temporary or permanent impairment or disability in a patient; ⁶ an event or omission arising during clinical care and causing physical or psychological harm to a patient ⁷⁻⁸	
Incident/patient safety incident	An unintended event during the care process, no matter how seemingly trivial or commonplace, that resulted, could have resulted, or still might result in harm to a patient ⁹⁻¹⁰	
Significant event	Any event thought by anyone in the healthcare team to be significant in the care of patients or the conduct of the service or the organization ¹¹	
Near miss	A situation in which an event or omission, or a sequence of events or omissions, arising during clinical care fails to develop further, whether or not as a result of compensating action, thus preventing harm to a patient ⁷⁻⁸	

Definitions of the term patient safety recognize the role of analysis of events that have or could have an adverse effect on a patient, as described in the box.¹²⁻¹⁵

Term	Meaning	Definition
Patient safety	<p>A discipline in the healthcare sector that applies safety science methods toward the goal of achieving a trustworthy system of healthcare delivery</p> <p>The prevention of harm to patients through application of a system of care delivery that:</p> <ul style="list-style-type: none"> • prevents errors • learns from errors that do occur • minimizes the incidence and impact of, and maximizes recovery from, adverse events • builds on a culture of safety that involves healthcare professionals, organizations and patients <p>The freedom from accidental harm due to medical care or from medical error</p>	

The emphasis in patient safety is to implement evidence-based practices to reduce the probability of incidents or situations occurring that result or could result in harm to patients. The term is defined in the box on the next page.¹⁵⁻¹⁶

Term	Meaning	Definition
Patient safety practice	A type of process or structure whose application reduces the probability of adverse events resulting from exposure to the healthcare system across a range of diseases and procedures	

A recent review of the strength and quality of evidence on patient safety identified 10 practices that are ‘strongly encouraged’ and 12 that are ‘encouraged’ for adoption. The practices are primarily aimed at hospital care and are in the box.¹⁶

Recommended patient safety practices	Evidence
Strongly encouraged	
Preoperative checklists and anaesthesia checklists to prevent operative and postoperative events	
Bundles that include checklists to prevent central line-associated bloodstream infections	
Interventions to reduce urinary catheter use, including catheter reminders, stop orders or nurse-initiated removal protocols	
Bundles that include head-of-bed elevation, sedation vacations, oral care with chlorhexidine, and subglottic-suctioning endotracheal tubes to prevent ventilator-associated pneumonia	
Hand hygiene	
‘Do not use’ list for hazardous abbreviations	
Multicomponent interventions to reduce pressure ulcers	
Barrier precautions to prevent healthcare-associated infections	
Use of real-time ultrasound for central line placement	
Interventions to improve prophylaxis for venous thromboembolisms.	
Encouraged	
Multicomponent interventions to reduce falls	
Use of clinical pharmacists to reduce adverse drug events	
Documentation of patient preferences for life-sustaining treatment	
Use of informed consent to improve patients’ understanding of potential risks of procedures	
Team training	
Medication reconciliation	
Practices to reduce radiation exposure from fluoroscopy and computed tomography scans	
Use of surgical outcome measurements and report cards	
Rapid response systems	
Utilization of complementary methods for detecting adverse events or medical errors to monitor for patient safety problems	
Computerized provider order entry	
Use of simulation exercises in patient safety efforts.	

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Incident analysis method

Incident analysis stages — *A summary of the method*

In incident analysis, a team analyses an incident by systematically carrying out the stages in the box. The stages are represented by the acronym **S-O-L-V-E-D**.

Stages in incident analysis	Guide
<ol style="list-style-type: none">1. S Seek all the facts related to the incident or situation and prepare a chronology including:<ul style="list-style-type: none">• exactly what happened• where did it happen• when did it happen• who was involved by role not by name• how did it happen, that is, the exact sequence of what happened.2. O btain, preserve and interpret, as needed, materials associated with the incident including:<ul style="list-style-type: none">• information• equipment or devices• drugs, supplies or materials.3. L earn the processes or systems that are relevant to the incident. Analyse the step-by-step way of handling the task or work related to the incident, including:<ul style="list-style-type: none">• how each process or system is authorized to be carried out• how each process or system is usually carried out• how each process or system was carried out in the incident.4. V alidate the analysis and identify problems and the true root causes of the breakdown in processes or systems and any contributing factors. Consider all of the following:<ul style="list-style-type: none">• patient care processes or systems involved• organizational or management processes or systems involved such as: human resources or staffing or skills gaps; equipment or supplies shortcomings; lack of, incomplete or untimely information or communications; cultural influences; or human factors• processes or systems that are outside the immediate control of the service.5. E stablish and implement action needed to reduce the probability of recurrence of the incident. Focus on actual causes and contributing factors. Implement actions that are effective and feasible in sustaining an improvement in patient safety.6. D etermine the effectiveness of the actions taken. Plan and carry out measurement of the effect of the actions taken.	