



Course: Knowledge is the Enemy of Unsafe Care

Topic: Learning from error



Summary

Medical error is a complex issue, but error itself is an inevitable part of being human (See ‘Why applying human factors is important for patient safety’ hand out). Learning from error can occur at both an individual and an organizational level through incident reporting and analysis. Barriers to learning from error include the existence of a blame culture that applies a person-centred approach to investigation. A systemic approach is required for organizational learning and system change. Root cause analysis (RCA) is a highly structured systemic approach to incident analysis that is generally reserved for the most serious patient harm episodes.

Errors and outcomes are not inextricably linked

Patients have bad outcomes in the absence of any medical error. Some treatments have well-recognized complications that can occur. In other cases, numerous errors may not lead to bad outcomes because they are recognized in time and appropriate steps are taken to counteract any damage that may have been caused. But there is no doubt that the nature of the outcome usually influences our perception of the error, often due to the phenomenon of “hindsight bias,” in which knowledge of the outcome of a situation influences our perception (usually unfavourable) of the standard of care before and during the incident in question.

What is an error: “When someone is trying to do the right thing, but actually does the wrong thing” (*B. Runciman*) In other words, there is a non-deliberate deviation from what was intended. *J. Reason*, defined errors as “planned sequences of mental or physical activities that fail to achieve their intended outcomes, when these failures cannot be attributed to the intervention of some chance agency”.

Violation: A deliberate deviation from an accepted protocol or standard of care.

Human Factors principles

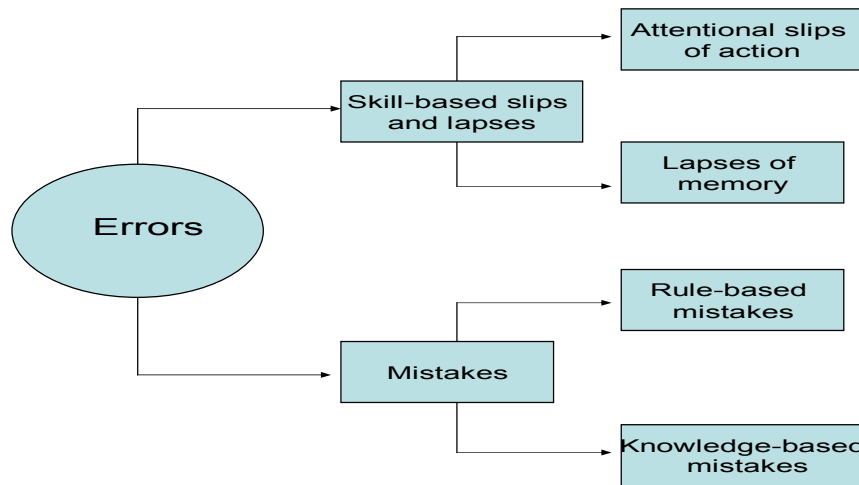
- The reality for health-care workers is that the same mental processes that lead us to make “silly mistakes” outside the workplace are also in play when we are at work.
- Error is the inevitable downside of having a brain! One definition of “human error” is “human nature (See ‘Why applying human factors is important for patient safety’ hand out.
- The patterns of errors that occur in health-care settings are no different from the situations that exist in other industries. What is different about health care is that there remains an element of a culture of infallibility that denies the prevalence of error.
- Another unique feature of health care-associated errors is that when failure occurs (omission or commission), it is the patient(s) who suffer.

Two types of ‘error’

Errors occur because of one of two main types of failures:

- **Actions do not go as intended:** is a so-called error of execution and may be further described as being either a slip, if the action is observable, or a lapse, if it is not. An example of a slip is accidentally pushing the wrong button on a piece of equipment. An example of a lapse is a memory failure, such as forgetting to administer a medication.
- **The intended action is the wrong one:** a failure that occurs when the intended action is actually incorrect is clearly a ‘mistake’. A mistake is a failure of planning. This can be either rule-based, when the wrong rule is applied, or knowledge-based, when a clinician does not take the correct course of action. An example of a rule-based mistake would be getting the

diagnosis wrong and so embarking on an inappropriate treatment plan. Knowledge-based mistakes tend to occur when providers are confronted with unfamiliar clinical situations.



Situations associated with increased risk of error

- ***Inexperience***

It is very important that health-care providers do not perform a procedure on a patient, or administer a treatment for the very first time without appropriate preparation and supervision by experienced staff.

- ***Time pressures***

Time pressures encourage health-care providers to cut corners and take shortcuts when they should not. Not cleansing hands properly is an example of this, or a pharmacist not taking the time to properly counsel someone receiving medication.

- ***Contingency teams***

Contingency teams are formed for emergent or specific events (e.g. cardiac-arrest teams, disaster-response teams, obstetric-emergency teams, rapid-response teams). The members of a contingency team are drawn from a variety of core teams.

- ***Inadequate checking***

Checking saves thousands of patients from receiving the wrong medications. Pharmacists routinely check drugs and assist the other members of the health-care team in making sure each patient receives the correct dosage of the correct drug via the correct route.

- ***Poor procedures***

This includes inadequate preparation, inadequate staffing and/or inadequate attention to a particular patient. Some health-care providers may be required to use equipment without fully understanding how to use it. Watching someone use the equipment and then talking about the procedure for which it is used is very instructive.

- ***Inadequate information***

Continuous quality health care and treatment depends on each health-care professional recording the patient details accurately, in a timely way and in legible handwriting in the patient record (medical record, drug chart or other method used for storing patient information). It is crucial that health-care providers habitually check the information being recorded and ensure that the information they write is legible, accurate and up-to-date. Misinformation, incorrect and inadequate information are often factors contributing to adverse events.

Individual factors that predispose health-care providers to errors

- ***Limited memory capacity***

- The amount of information that many health-care providers are required to know today is far beyond that which can be memorized.
- The human brain is only capable of remembering a finite amount of information.
- Health-care providers should not rely on memory, when there are a number of steps involved.
- Guidelines, checklists and protocols have been developed to help health-care professionals provide care and service following the best available evidence.
- Learning to ask for help is an essential skill for health-care providers. Researchers have shown that medical and nursing students in their early years have deficiencies in basic clinical skills. This may be due to a reluctance to ask for help as students.
- **Fatigue**
 - Memory is affected by fatigue. Fatigue is a known factor in errors involving health-care practitioners.
 - In recognition of the problems caused by fatigue, many countries have already or are in the process of reforming the excessive hours worked by doctors.
 - The connection between sleep deprivation due to long shifts and medical errors is strong. A study found that interns made more serious mistakes when they worked frequent shifts of 24 hours as compared to when they worked shorter shifts.
 - Other studies show that sleep deprivation can have similar symptoms to alcohol intoxication.
- **Stress, hunger, illness**
 - When health-care providers feel stressed, hungry or ill, they will not function as well as when they have none of these issues. It is very important for health-care providers to monitor their own status and well-being. They should be mindful of the fact that if they are feeling unwell or stressed, they are more likely to make errors. Burnout in new nurses has led to errors and to nurses leaving the profession. Stress and burnout are related.
 - There are many mnemonic devices to help health-care providers monitor themselves.

HALT: Hungry, Angry, Late or Tired

IM SAFE: Illness, Medication, Stress, Alcohol, Fatigue, Emotion

- **Language**

Communication errors caused by language and cultural factors are relevant in many interactions between patients and their health-care providers that occur without an interpreter or common language.
- **Hazardous attitudes**

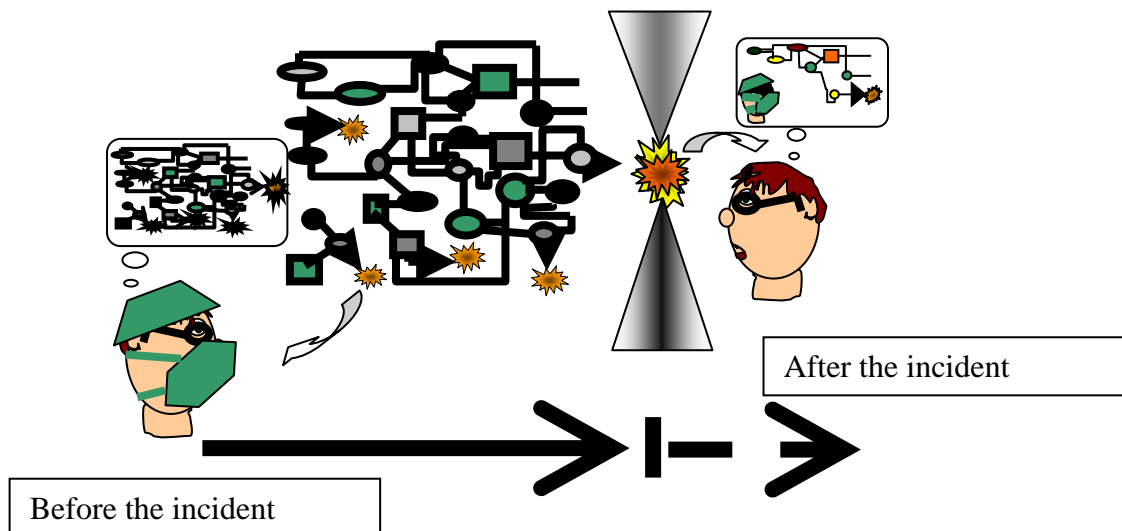
New health-care providers who perform procedures or interventions on patients without supervision might be said to display a hazardous attitude or those who do not practice hand hygiene.

Ways to learn from errors

1) Incident reporting

Incident reporting and monitoring involve collecting and analysing information about an adverse event that could have harmed or did harm a patient in a clinical setting. An incident-reporting system is a fundamental component of an organization's ability to learn from error. The lessons learned through the use of these procedures allow the organization to identify and eliminate “**error traps**”.

- Incidents are traditionally underreported, because the person approach to incident analysis is still pervasive in health care, whereby the frontline nurses, pharmacists, doctors, dentists or midwives —often the ones who report the incident— are criticized for their role in the incident.
- This situation is often exacerbated by the phenomenon of ‘**hindsight bias**’ (see below).



Organizational culture

- The frequency of the reporting of errors and the manner in which incidents are analysed—whether a systems approach or person approach is used—are heavily dependent on the leadership and culture of an organization.
- There is a correlation between the organizational culture of a health-care facility and the safety of patients being treated at that facility.
- Organizations or hospitals with a strong reporting culture are well placed to learn from errors because the staff members feel free to report problems without fear of reprimand.

Organizational culture: 'Shared values (what is important) and beliefs (how things work) that interact with an organization's structure and control systems to produce behavioural norms (the way we do things around here).
James Reason

Strategies for incident reporting

- Anonymous reporting (use of electronic anonymous systems)
- Timely feedback by leadership on actions to prevent same errors
- Public acknowledgment of successes of organization's reporting in lowering adverse events and errors
- **Anonymous reporting of near misses:** i) these are free lessons to learn from; ii) system improvements can be instituted as a result of the investigation but at no "cost" to a patient.

2) Root Cause Analysis (see separate sheet)

Health-care error is a complex issue; error is an inevitable part of the human condition.

- **Tips known to limit errors include: avoid reliance on memory; standardize common processes; simplify processes: use checklists or protocols; always be watchful.**

Learning from error can occur at both an individual and organizational level through incident reporting and analysis. Barriers to learning from error include a blame culture

- **A systemic approach is required for organizational learning**
- **Root Cause Analysis is a structured systemic approach to incident analysis reserved for the most serious incidences.**