

A C C I D E N T S

-in medical practice-

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❑ Human beings always make mistakes, therefore, making every effort to prevent errors and provide **safe and high-quality health care** is the most important mission of health care organizations.

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Learning objectives....

At the end of this lecture, students are expected to:

- ❖ **Develop** a general understanding about accidents; understanding the Accident Process
- ❖ ***Construct Safe Behaviour & Preventive Behaviour***
- ❖ **Realise** the importance of **risk assessment**
- ❖ ***Conceive the basic concepts of risk and danger, causal factors***
- ❖ **Internalise** the importance of **surveillance** system in order to proper analysis
- ❖ **Diagnose** the **root causes** and learn high level of preventability almost 98%!



Medical / Healthcare accidents-1

- ❑ **A healthcare incident** is an unintended or unexpected event that harmed a patient or caregiver or has the potential to harm them.
- ❑ *Incidents or errors occur for various reasons or **root causes**, such as system design flaws, lack of administrative oversight, poor training, **digression** from protocols, miscommunication, and more.*
- ❑ Some incidents are preventable, which means there is a multitude of examples of incidents in healthcare that, when properly evaluated, can ultimately contribute to better quality care and help **reduce harm**.

<https://www.patientsafety.com/en/blog/type-of-incidents-in-healthcare>

Medical / Healthcare accidents-2

❑ **The statistics are striking** : Globally, 4 in 10 adults have experience with ***medical errors***, either personally or in the care of someone close to them, according to the Institute for ***Healthcare Improvement***.

According to the WHO, the occurrence of **adverse events** due to **unsafe care** is likely **one of the 10 leading causes of death and disability** in the world.

<https://www.patientsafety.com/en/blog/type-of-incidents-in-healthcare>



Categories of incidents

Many incidents involving patients and healthcare professionals can be categorized into six groups:

1. Incidents related to administrative issues or planning include:

- Incorrect agreements and/or conventions
- Mix-up of patient data in medical records
- Lack of a resuscitation statement or referral in place

2. Incidents related to patient examination include:

- Delayed/incorrect examination results
- Incorrect examination application
- Digression from protocols and working agreements

3. Incidents related to the treatment of the patient include:

- Contracting an infection (think for example, of COVID-19)
- Fall incident, eg because the patient falls out of bed or is not mobile enough for a toilet visit
- Wrong diagnosis and/or incorrect treatment plan

4. Incidents related to the dispense of medication include:

- The wrong dose of prescription indicated
- Wrong medication supplied
- Incomplete or incorrect medication handoffs

5. Incidents related to internal communication include:

- Communication issues regarding the intake, transfer, and discharge of a patient
- Miscommunication or misunderstanding of orders

6. Incidents related to healthcare workers include:

- Needle, cutting, and splashing incidents <https://www.patientsafety.com/en/blog/type-of-incidents-in-healthcare>
- Aggression by patients or their families



Medical accidents-1

- ❑ Generally speaking, when an accident occurs in an industry, every effort possible is made to prevent a recurrence, thereby **minimizing the risk** of recurrence of the same type of accident within that industry.
- ❑ *In health care, however, accidents of the same type repeatedly occur in the same hospital.*
- ❑ One might even suspect that it is impossible to learn from mistakes in medicine.

**Common
Medical Errors
That Lead to
Birth Injuries
and Defects**

READ MORE



Medical accidents-2

- ❑ Confronted with this situation, there is apprehension that doctors in a **team practice may lose the trust** that the other team members have always placed in them.
- ❑ To improve this situation, hospitals must make efforts systematically to change **health care risk management** so that medical **malpractice** can be prevented.



What Are the 4 D's of Medical Negligence?

Reich &
Binstock

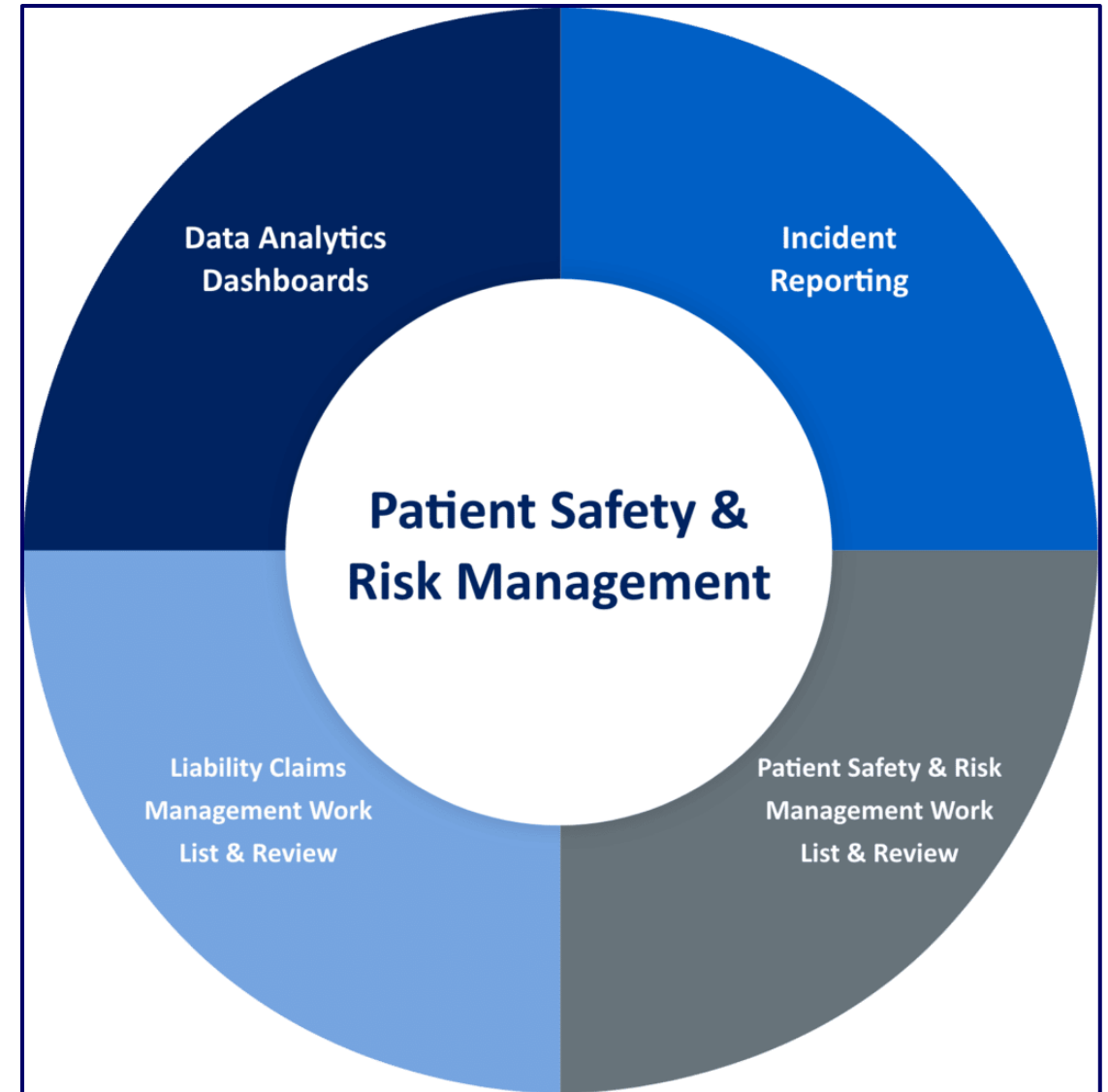
The 4 Ds of **medical malpractice** are **duty**, **dereliction** (*negligence or deviation from the standard of care*), **damages**, and **direct cause**. Each of these 4 elements must be proved to have been present, based on a preponderance of the evidence, for malpractice to be found.

What is the most commonly reported incident?

- Medication-related incidents are the most commonly reported incidents in healthcare.
- This includes administering the wrong dose, giving medication to the wrong patient, or omitting the dose.
- For example, a nurse may scan a medication barcode, get distracted, and then grab the wrong bottle and administer the **wrong medication**.
- Or, the wrong dose may be administered because a physician accidentally transposed two numbers when prescribing it.
- Another example** : A patient has a heart attack because they didn't receive their blood pressure medication on time, due to the emergency department becoming in undated following a mass casualty incident.

Incidents give insight into patient safety risks-1

- ❑ Learning why incidents occur can help organizations make improvements to prevent them from happening again.
- ❑ *But first, the healthcare system must prioritize incident reporting by providers, staff, and patients.*
- ❑ In fact, **risk management** and **patient safety** rely on healthcare's collective:



Incidents give insight into patient safety risks-2

- Willingness to report (near) incidents.*
- Ability to learn from mistakes.
- Efforts to enact necessary changes.
- Put safeguards in place to prevent medical errors, injuries, patient safety mishaps, and more.



EBOOK
Incident Management

Learn how to make the switch from reporting incidents to analyzing and optimizing healthcare processes.

Download eBook 

Incidents give insight into patient safety risks-1

- ❑ Even when there is a system in place to log incident reports and follow through on them, and **healthcare** incidents still occur, it doesn't necessarily mean that providers are unqualified or have *poor intentions*.
- ❑ *It means there's room for improvement and opportunities to create a **safer healthcare** environment for all participants, as in this example:*



Incidents give insight into patient safety risks-2

- ❑ *A hospital's electronic health record is disabled due to a virus, and no one within the organization can access patient information.*
- ❑ **The result?** Patient treatments are delayed until the issue is investigated and resolved. Analysis of such an incident might lead the organization to create a downtime procedure so all staff knows how to proceed efficiently, should a security breach occur again.

Eight Risk Domains of Enterprise Risk Management



Are there incident severity levels?

❑ The WHO classifies healthcare incidents according to the levels of severity :

❑ **Mild, moderate, severe, or death** based on the severity of the symptoms or loss of function, the duration of the symptoms, and/or the interventions required as a result of the incident.

❑ Organizations may also choose to classify the severity of healthcare incidents based on an *increased length of stay* as well as the psychological stress associated with a **patient-safety** incident that can often have a greater impact than any physical harm.

❖ There are also additional types of **patient safety** incidents identified by the Joint Commission, that some organizations may track:

❖ **Near miss** (i.e., a healthcare incident that did not reach the patient or caregiver and therefore did not result in any harm).

❖ **No-harm incident** (i.e., a healthcare incident that did reach the patient or caregiver, but no discernable harm resulted).

Are there incident severity levels?

LEVEL 5 <i>Emergency</i>	EMERGENCY SITUATION: ACTIVE CYBERATTACK e.g. Evidence of an attacker operating from an escalated account (i.e. admin), malware or attack behavior on a high-value host (i.e. Domain Controller), multiple machines displaying attack behavior, data exfiltration.
LEVEL 4 <i>Severe</i>	SEVERE, IMMEDIATE FUNCTIONAL IMPACT e.g. Successful unauthorized logins, manual malicious commands being run on a host, alarms signifying an active persistent threat, multiple machines displaying similar attack evidence.
LEVEL 3 <i>High</i>	HIGH POSSIBILITY OF FUNCTIONAL IMPACT e.g. Credential loss due to phishing, verified malware execution on one or more hosts, detection of unauthorized program tasks or user activities.
LEVEL 2 <i>Medium</i>	MODERATE POSSIBILITY OF FUNCTIONAL IMPACT e.g. Malware quarantined or blocked, suspicious email(s) quarantined, suspicious inbound/outbound connections blocked, evidence of suspicious sign-in attempts/failures.
LEVEL 1 <i>Low</i>	SLIGHT POSSIBILITY OF FUNCTIONAL IMPACT e.g. Vulnerability scan or risk assessment of environment reveals vulnerable services, security holes, or other cyber risk.

From *reporting incidents* to *incident management*

- ❑ Incident management refers to the process of *analyzing incidents* and identifying the causes.
- ❑ *Incident management entails more than simply filling out an incident report to track events and prevent them from occurring again.*
- ❑ Incident management is also increasingly about handling data for quality improvement that affects reimbursement.
- ❑ Read more about the benefits of a digital system for recording and analyzing incidents.

- ❑ Cloud technology can help organizations collect and manage data to **identify root causes** and ultimately improve quality and **patient safety**.
- ❑ *One strategy for increasing all healthcare participants to **report incidents** is to use a digital incident management system that makes reporting from a smartphone or other device easy..*
- ❑ Read more about this in our eBook **Incident Management**.

Medical accidents & *the nursing section*

- ❑ Nursing section is traditionally involved in efforts to prevent *medical malpractice*.
- ❑ **Accident report** forms, would be evaluated by a organized “*committee to prevent accidents*” within the nursing.
- ❑ The nursing section has a manual called “*Accident Prevention*”.
- ❑ A *risk management* nurse can be assigned to each ward to *gather and nalyze information* on each incident and send back the details of the analysis in the form of **feedback**.



Medical accidents

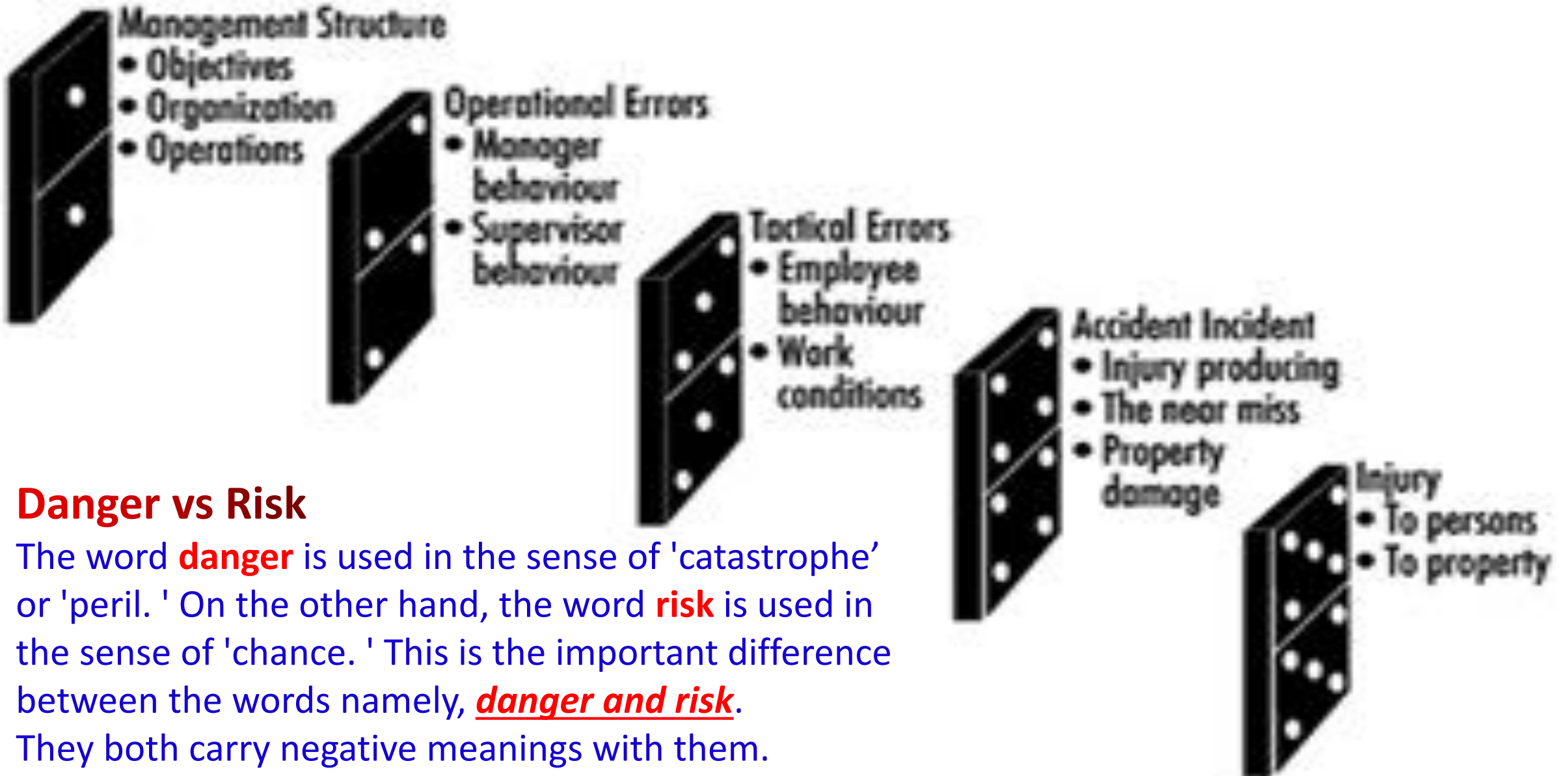
- ❑ **Medical accidents** can be understood as patient injuries that result from interaction of physician or nurse error during the provision of care with faults latent in the hospital system.
- ❑ **Medical accidents** are not random events but are events with discoverable associations between *human error* and *system faults* through application of methods of failure analysis in the evaluation of **patient injuries**.
- ❑ The goal of a **failure analysis** is to make apparent system faults that are otherwise obscured. Analyses seek to answer several questions. What characteristics of the system failed to prevent a slip, mistake, or *rule violation* from evolving into an accident? What system changes might have offset, or prevented, the active error from contributing to the sequence of events culminating in injury?

<https://www.sciencedirect.com/science/article/abs/pii/S1070324116303406>

8 Cases of Apparent Medical accidents

- ❑ Brief descriptions of **8 cases of apparent medical accidents** can be provided.
- ❑ For 3 of these cases, the **failure analysis approach** is used to identify the sequence of events contributing to the **patient injury**; identify events within this sequence that represent active **errors**; and identify points within this sequence that represent **system faults** which failed to prevent the occurrence of subsequent events.
- ❑ Within the framework of current methods of **hospital quality appraisal**, attribution of patient injury historically has focused on **clinician error**. Yet unless detected and corrected, **system faults persist** and create circumstances of “**accidents waiting to happen**.” Understanding of causal factors in the evolution of **medical accidents** can be usefully applied toward improvement in the quality of hospital appraisal of **iatrogenic injuries** and, through that application, toward reduction in the rates of adverse outcomes. <https://www.sciencedirect.com/science/article/abs/pii/S1070324116303406>

Understanding the Accident Process



Danger vs Risk

The word **danger** is used in the sense of 'catastrophe' or 'peril.' On the other hand, the word **risk** is used in the sense of 'chance.' This is the important difference between the words namely, **danger and risk**.

They both carry negative meanings with them.

Examples of incidents in healthcare-1

- ❑ *Unfortunately, one doesn't need to look far to find examples of incidents in healthcare.*
- ❑ That's because the industry is incredibly complex and fast-paced.
- ❑ *It's easy to make honest mistakes.*
- ❑ For example, there could be a mix-up of patient data when two patients have the same first and last names.
- ❑ *Or, consider a patient who has an allergy to penicillin.*
- ❑ If a provider views the wrong patient -one without any allergies- and then proceeds to administer penicillin to treat the patient's pneumonia, the patient may have an allergic reaction.
- ❑ *Incomplete data and duplicate records contribute greatly to this problem.*

<https://www.patientsafety.com/en/blog/type-of-incidents-in-healthcare>

Examples of incidents in healthcare-2

- ❑ Another example of an incident in healthcare could be caused by something as simple as not following established **clinical protocols**.
- ❑ *For example, if a physician doesn't properly **wash their hands** before suturing a wound, the wound could become infected.*
- ❑ A patient could develop a decubitus ulcer while in the hospital because the nursing staff didn't tend to them in a timely manner.
- ❑ *Here's another example :*
- ❑ A patient's breast biopsy results are delayed or they couldn't schedule an appointment with their primary care physician in a timely manner, leading to a progression of their cancer that could have otherwise potentially been avoided.

<https://www.patientsafety.com/en/blog/type-of-incidents-in-healthcare>

Examples of incidents in healthcare-3

- Consider these additional examples of incidents in healthcare:
- *A patient is discharged from the hospital prematurely, leading to readmission.*
- A blood pressure device fails to provide a correct reading, leading to undiagnosed (and untreated) hypertension.
- *A patient falls due to a lack of adequate risk assessment while in the hospital.*
- There are truly too many examples of incidents in healthcare to describe.
- *Hospital caregivers can be harmed, too.*
- For example, a patient may become aggressive, leading to a **caregiver injury**.
- *Or a caregiver may accidentally stick themselves with a used needle, thus exposing themselves to a **patient's blood**.*

Safe Behaviour

- ❑ Philosophically, the 20th century has seen several swings in which safety programmes have allocated varying amounts of responsibility for the behaviour of workers to the individual, the employer and society.
- ❑ *However, it is clear that safe behaviour is an absolutely crucial part of the **safety** process.*
- ❑ An example of the significance of such behaviour is the development of **group ethics**, or team norms, in which the assumption of a risk by an individual might be perceived negatively by other members of the group.

<https://iloencyclopaedia.org/part-viii-12633/safety-policy-and-leadership/item/986-risk-perception>

What should I do if I injure myself with a used needle?

- If you pierce or puncture your skin with a used needle, follow this first aid advice immediately:
- *encourage the wound to bleed, ideally by holding it under running water wash the wound using running water and plenty of soap do not scrub the wound while you're washing it*
- do not suck the wound dry the wound and cover it with a waterproof plaster or dressing
- *You should also seek urgent medical advice as you may need treatment to reduce the risk of getting an infection:*
- contact your employer's Occupational Health Service if you injure yourself at work otherwise call your GP, NHS 111 or go **Occupational Health Service** to the nearest accident and emergency (A&E) department..

<https://www.nhs.uk/common-health-questions/accidents-first-aid-and-treatments/what-should-i-do-if-i-injure-myself-with-a-used-needle/>

WHAT SHOULD I DO IF I **INJURE MYSELF** WITH A USED NEEDLE?

1 Encourage the wound to bleed by holding it under running water

...

3 Do not scrub the wound while you're washing it



2 Wash the wound using running water and plenty of soap

4 Do not suck the wound

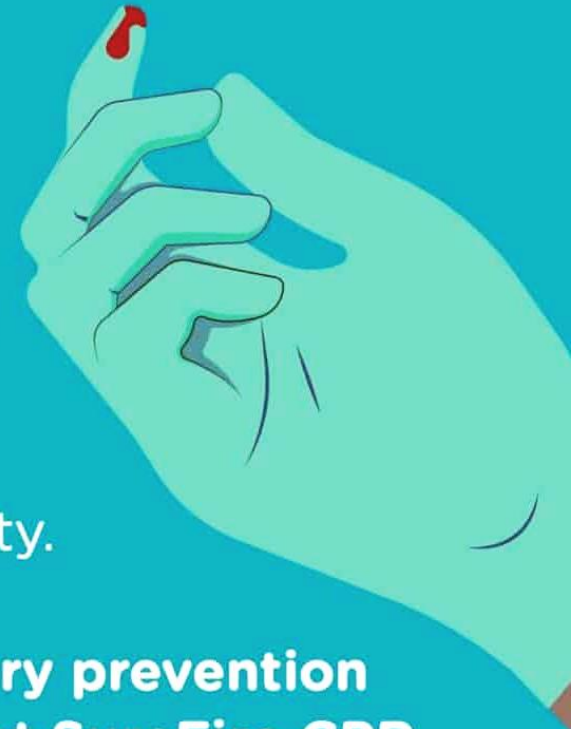
5 Dry the wound and cover it with a waterproof plaster or dressing

Needle-stick injuries-1

- Injuries from needles used in medical procedures are sometimes called needle-stick or sharps injuries.
- *Sharps can include other medical supplies, such as syringes, scalpels and lancets, and glass from broken equipment.*
- Once someone has used a needle, viruses in their blood, such as **hepatitis B, hepatitis C or HIV**, may contaminate it.
- *This includes needles used to inject illegal drugs.*
- Blood can also contaminate sharps.

<https://www.nhs.uk/common-health-questions/accidents-first-aid-and-treatments/what-should-i-do-if-i-injure-myself-with-a-used-needle/>

SHARPS SAFETY 101: NEEDLESTICK INJURY PREVENTION IN HEALTHCARE



One small needlestick injury can lead to big consequences.
As a healthcare professional, it's important to practice sharps safety.



To help you remember the most important needlestick injury prevention tips, keep reading this infographic created by the experts at SureFire CPR.

Needle-stick injuries-2

- Note also that because the **hepatitis B** virus may survive on environmental surfaces for more than a week, indirect exposure can occur via contaminated inanimate objects.
- Injuries have transmitted many other diseases involving **viruses, bacteria, fungi,** and other microorganisms to health care workers, laboratory researchers, and veterinarian staff. The diseases include:
 - **Blastomycosis, Brucellosis, Cryptococcosis, Diphtheria, Cutaneous gonorrhea, Herpes, Malaria, Mycobacteriosis, Mycoplasma caviae, Rocky Mountain spotted fever, Sporotrichosis, Staphylococcus aureus, Streptococcus pyogenes, Syphilis, Toxoplasmosis, Tuberculosis,**
- Many of these diseases were transmitted in rare, isolated events.
- They still demonstrate, however, that needlestick and sharps injuries can have **serious consequences**.

https://www.ccohs.ca/oshanswers/diseases/needlestick_injuries.html

Assessing your injury

- The healthcare professional treating you will assess the risks to your health and ask about your injury – for example, how and when it happened, or who had used the needle.
- Samples of your blood may need to be tested for **hepatitis B and C or HIV**.
- Although rare, there's also a small risk of other infections being transmitted through contaminated blood, such as cytomegalovirus (CMV) and Epstein-Barr virus, which causes glandular fever.
- Your healthcare professional may also arrange to test samples of the other person's blood if they give their consent.

<https://www.nhs.uk/common-health-questions/accidents-first-aid-and-treatments/what-should-i-do-if-i-injure-myself-with-a-used-needle/>

Will I need any treatment?

- *If your healthcare professional thinks you're at low risk of infection, you may not need any treatment.*
- If there's a **higher risk of infection**, you may need:
 - antibiotic treatment – for example, if you have cellulitis (*infection of the skin*)
 - vaccination against hepatitis B
 - **treatment to prevent HIV**
- If there's a high risk of infection with HIV, your healthcare professional may consider treatment called post-exposure prophylaxis (PEP).

<https://www.nhs.uk/common-health-questions/accidents-first-aid-and-treatments/what-should-i-do-if-i-injure-myself-with-a-used-needle/>

Getting support

- *Your healthcare professional may recommend that you get:*
- Support from your employer's occupational health service – they can also advise about sick leave
- *psychological support – such as counselling to help with any stress the injury has caused*
- If you injure yourself with a used needle at work, **report the incident immediately** to your supervisor or manager.
- Read the answers to more questions about accidents, first aid and treatments.

<https://www.nhs.uk/common-health-questions/accidents-first-aid-and-treatments/what-should-i-do-if-i-injure-myself-with-a-used-needle/>

Eye protection should be worn in patient care

- In order to protect the health and safety of colleagues, anyone who has direct interactions with patients should wear eye protection.
- *The hospital has an updated universal personal protective equipment (PPE) policy.*
- *Over that time, the organization has secured enough inventory to ensure colleagues in all patient care areas have **eyewear**.*
*The goal here is to **keep you safe**.*
- Since patients without typical symptoms can transmit the virus, the addition of **eye protection** on top of wearing a mask offers another layer of protection.



<https://www.unmc.edu/news.cfm?match=25738>

Chemical splash in the eye: First aid

- If a chemical splashes into your eye, take these steps immediately.
- **Flush your eye with water.**
Use clean, lukewarm tap water for **at least 20 min.**
- Use whichever of these approaches is quickest:
- Get into the shower and aim a gentle stream of water on your forehead over your affected eye.
- Or direct the stream on the bridge of your nose if both eyes are affected.
- Hold the lids of your affected eye or eyes open.



Chemical splash in the eye: First aid

- Put your head down and turn it to the side.
- *Then hold the lids of your affected eye open under a gently running faucet.*
- If you have access to a **work site eye-rinse station**, use it.
- *Young children may do best if they lie down in the bathtub or lean back over a sink.*
- Pour a gentle stream of water on the forehead over the affected eye or on the bridge of the nose to flush both eyes.



<https://www.unmc.edu/news.cfm?match=25738>

The Risk Management System

- ❑ In the United States, **risk management** is defined as “*the science by which the risk for an economic loss is identified, evaluated, and managed*”.
- ❑ Three approaches to organizing a **risk identification** system has been reported..
- ❑ (1) **Incident reporting system** : Accident reports are expected to be voluntarily filed by employees: 5 to 30% of all accidents can be identified by this approach.
- ❑ (2) **Occurrence reporting system** : A list of potential accidents is prepared in advance and employees are expected to voluntarily report them whenever they occur.
- ❑ Approximately 40 to 60% of all accidents can be identified by this approach.
- ❑ (3) **Occurrence screening system** : Professional employees identify incidents by *chart inspections* based on written criteria.
- ❑ It has been reported that 80 to 85% of all accidents can be identified by this approach.

<https://iloencyclopaedia.org/part-viii-12633/safety-policy-and-leadership/item/986-risk-perception>

Risk Perception

- ❑ The converse is true: The acceptance of dangerous practices can become accepted as “normal”.
- ❑ *Such behaviours can be modified by specific procedures of training and reinforcement, as shown by the highly successful programmes that combated the spread of AIDS from careless needle use in the health care industry.*
- ❑ The heightened emphasis by management, coupled with training and educational materials, fundamentally changed the procedures involved and reduced the incidence of this hazard.

<https://iloencyclopaedia.org/part-viii-12633/safety-policy-and-leadership/item/986-risk-perception>

Safe Behaviour

- From a technical point of view, a **hazard** represents a source of energy with the potential of causing immediate injury to personnel and damage to equipment, environment or structure.
- Workers may also be exposed to diverse toxic substances, such as chemicals, gases or radioactivity, some of which cause **health problems**.
- *Unlike hazardous energies, which have an immediate effect on the body, toxic substances have quite different temporal characteristics, ranging from immediate effects to delays over months and years.*
- *Often there is an **accumulating effect** of small doses of toxic substances which are imperceptible to the exposed workers.*

<https://iloencyclopaedia.org/part-viii-12633/safety-policy-and-leadership/item/986-risk-perception>

Preventive Behaviour

- ❑ Individuals may deliberately take **preventive measures** to exclude hazards, to attenuate the energy of hazards or to protect themselves by **precautionary measures** (for inst. by **wearing safety glasses and helmets**).
- ❑ *Often people are required by a company's directives or even by law to comply with **protective measures**.*
- ❑ For example, a roofer builds a scaffolding prior to working on a roof to prevent the eventuality of suffering a fall.
- ❑ This choice might be the result of a **conscious risk assessment** process of hazards and of one's own coping skills, or, more simply, it may be the outcome of a *habituation process*, or it may be a requirement which is enforced by law.
- ❑ Often warnings are used to indicate **mandatory preventive actions**.

<https://iloencyclopaedia.org/part-viii-12633/safety-policy-and-leadership/item/986-risk-perception>

Conclusion...

- ❑ In reality, personal elements (*e.g., personalities or personal attainment*) are involved in **medical accidents**.
- ❑ However, even when an accident appears to have been the fault of a single individual, the cause may be in the management system of the hospital.
- ❑ Therefore, it is important that the person involved report the accident faithfully and that a system capable of ***evaluating such incidents objectively*** be in continuous operation in the hospital.
- ❑ When such a practice is established in a hospital, a more trusting relationship between doctors and the **hospital management** will be established.
- ❑ Backed up by a system such as described above, doctors can be assured of their positions and can concentrate on their own jobs.
- ❑ At the same time, they are reminded that their medical services are being monitored by a **3rd party**. Such an environment should produce a change in the doctors' attitude toward the medical care they provide. It is hoped that this change in the doctors' attitude will result in reduced medical **malpractice**. https://www.med.or.jp/english/pdf/2001_01/001_010.pdf

**Any QUESTIONS?
or COMMENTS??**

f o r

*Thank you
for joining..*



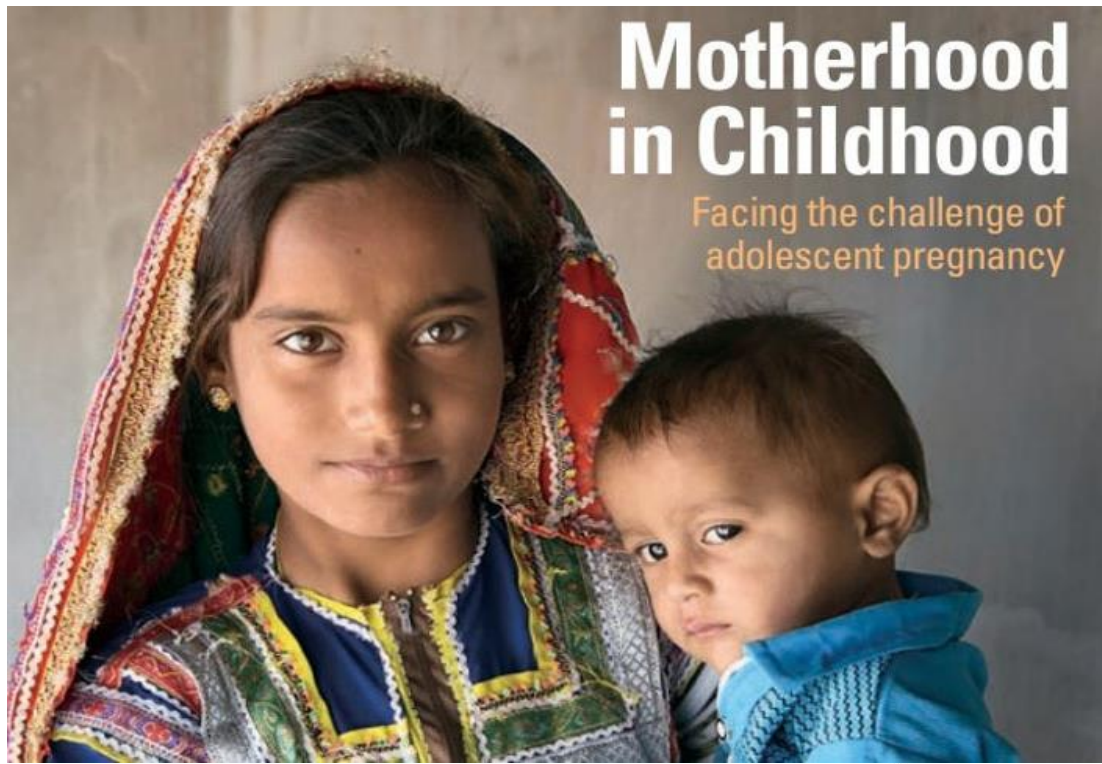
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Thanks for all...



*No way for
child workers!*



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