Introduction

More than one million people are treated and cared for safely and successfully on a daily basis in the National Health Service (NHS) (National Patient Safety Agency (NPSA), 2004a). Over the years, there have been a number of technological advances and a huge increase in knowledge associated with increasingly complex healthcare systems. One outcome of the complexities associated with knowledge and technological advances is the possibility that there will be an increase in, and the likelihood that, things will and do go wrong, regardless of how dedicated, skilled and professional staff are, and unfortunately patients (and staff) do suffer harm. Patient
safety encompasses a range of errors and systems failures associated with the delivery of patient care (DH, 2006a) and can include situations such as:

- Mistakes in diagnosis
- Delays in diagnosis
- Medication errors
- Treatment errors
- Problems with equipment
- Infections acquired in hospitals
- Accidents such as slips and falls

Improving patient care is a challenge for those who provide healthcare, be that in the NHS, the independent sector, the voluntary sector, in people’s own homes or in hospitals. Important issues need to be taken into account when preventing things from going wrong as the result of, for example, the complex interactions between many people, the variety of skills, the use of increasingly complicated technologies and the use of numerous drugs (see Figure 1.1). The Nursing and Midwifery Council’s (NMC, 2008) Code of Conduct demand that nurses and midwives work with others to protect and promote the health and well-being of those in their care, their families and carers, and the wider community; this means that people in your care should be safe. This chapter reinforces the opening tenets of the Code of Conduct. As an unqualified nurse, students of nursing are neither accountable nor answerable to the NMC. However, you have a responsibility to ensure that you make known any circumstances that you find or consider unsafe in an attempt to protect the public. These situations may concern medicine errors as well as any other unsafe or potentially unsafe practice. Chapter 2 outlines some issues associated with medicine errors.

**Figure 1.1** The range of complex interactions that may be associated with the administration of medicines
**Activity 1.1 Key terms**

Using a nursing or medical dictionary or any other resource you think may help you, begin this chapter by finding out the meaning of the key terms listed below. There may be human resources around you to help you with terms, for example, registered nurses, a pharmacist or a healthcare manager. There are blank spaces provided for you to enter your responses.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Asepsis</td>
<td>Being free of disease producing microbes</td>
</tr>
<tr>
<td>Adverse health care event</td>
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<tr>
<td>Bio hazardous waste</td>
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<tr>
<td>Chain of infection</td>
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<tr>
<td>Clinical waste</td>
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<tr>
<td>Disinfection</td>
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<td>Friction</td>
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<td>Hazard</td>
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<td>Healthcare Associated Infection (HCAI)</td>
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<td>Healthcare Commission</td>
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<td>Healthcare near misses</td>
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<td>Infection</td>
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<td>Improvement notice</td>
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<tr>
<td>Manual handling</td>
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<td>Microbe</td>
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(continued)
When harm occurs to a patient, the effects are widespread and can be devastating from both emotional and physical perspectives to the patient, his or her family and staff. Patients may experience unnecessary pain, additional therapy or operations, and they may also have to spend additional time being cared for in the community or in a hospital. Vincent and Coulter (2002) suggest that psychological injuries such as those listed in the box below are some of the possible effects following a patient safety incident.

- Shock
- Anxiety
- Depression
- Uncertainty about recovery
- Fear of future treatments
- Disruption to work
- Disruption to family life

Clinical staff can, as a result of the harm caused, become demoralised and in some instances disaffected. From a financial point of view, incidents that involve safety can cost the health service large amounts of money through litigation and treatment (NPSA, 2004a).

Patient safety incidents are graded according to harm. Using grading systems that are associated with the impact or harm caused to the patient can help to adopt a consistent approach to comparison and analysis of data at a national level. Figure 1.2 outlines the levels of severity related to harm and Table 1.1 provides a key to the various levels.

Table 1.1 Definitions of the levels of severity of harm (Source: DH, 2004c)

<table>
<thead>
<tr>
<th>Level</th>
<th>Definition</th>
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<tbody>
<tr>
<td>No harm</td>
<td></td>
<td>Any patient safety incident that had the potential to cause harm but was prevented, resulting in no harm</td>
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<tr>
<td></td>
<td>Impact prevented</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impact not prevented</td>
<td>Any patient safety incident that ran to completion but no harm occurred</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>Any patient safety incident that required extra observation or minor treatment and caused minimal harm, to one or more patients</td>
</tr>
<tr>
<td>Moderate</td>
<td></td>
<td>Any patient safety incident that resulted in a moderate increase in treatment and which caused significant, but not permanent, harm to one or more patients</td>
</tr>
<tr>
<td>Severe</td>
<td></td>
<td>Any patient safety incident that appears to have resulted in permanent harm to one or more patients</td>
</tr>
<tr>
<td>Death</td>
<td></td>
<td>Any patient safety incident that directly resulted in the death of one or more patients</td>
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</tbody>
</table>
The safety of patients (and staff) concerns everyone working in clinical and non-clinical areas. A collective and systematic approach is advocated in order to have a positive impact on the quality of care and the efficiency of organisations. The NPSA has developed and produced seven steps to patient’s safety; these seven steps describe the steps that are to be taken by organisations to improve safety.

Activity 1.2

Find out what the function of the NPSA is.

The seven steps to patient safety

Using the seven steps to patient safety as a checklist can help organisations to plan activities that may help improve patient safety ensuring that care provided is as safe as possible. Table 1.2 lists the seven steps to patient safety. Understanding what the seven steps are and what they mean can ultimately help you to help prevent harm to patients. A brief outline of each of the seven steps is provided below.

**Step 1: building a safety culture**

The NPSA (2004b) suggest that in order to learn about patient safety a culture of openness and fairness should be engendered. The culture should enable staff to share information freely

<table>
<thead>
<tr>
<th>Step</th>
<th>Concerned with</th>
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<tbody>
<tr>
<td>Step 1</td>
<td>Building a safety culture</td>
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<tr>
<td>Step 2</td>
<td>Leading and supporting staff</td>
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<td>Step 3</td>
<td>Integrating risk management activity</td>
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<td>Step 4</td>
<td>Promoting reporting</td>
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<td>Step 5</td>
<td>Involving and communicating with patients and the public</td>
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<td>Step 6</td>
<td>Learning and sharing safety lessons</td>
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<tr>
<td>Step 7</td>
<td>Implementing solutions to prevent harm</td>
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</table>
with the aim of improving safety levels. Staff should be encouraged to talk with colleagues and managers about incidents in which they have been involved. When incidents have been reported, investigations ought to focus upon why the incident occurred as opposed to who was involved. Staff must be supported and treated fairly when they have been involved in an incident.

**Step 2: leading and supporting staff**

Managers are encouraged to listen to staff and as a result you are encouraged to speak with managers and other colleagues in order to enhance safety. Try to attend any briefings or study sessions being held in the ward or department where you are working; these sessions will provide information about safety issues. Some of the issues under discussion will consider genuine safety issues that have caused concern and also issues that are known as ‘near misses’.

**Activity 1.3**

Find out when meetings or briefings regarding safety issues are being held in the ward or department where you are working with the intention of attending one of them. Try to find out who has been appointed to act as the safety champion in your organisation; what is their role. Who in the institution where you are working is the nominated Director of Infection Prevention and Control (DIPC) and what role do they undertake? Who is the DIPC responsible to?

**Step 3: integrating risk management activity**

Risk management (policies, processes and procedures) must be integrated into organisational activities. It is unacceptable to manage risk at the individual level or in functional segments. Lessons learnt in one area of risk should be quickly integrated in other areas of risk.

**Step 4: promoting reporting**

It is important that staff are encouraged to report things that go wrong; this is a fundamental requirement for building a safer service for patients. When incidents are reported, lessons from those incidents can be learnt and improvements in patient safety made. The government has produced a report called *An Organisation with a Memory* (DH, 2000); the aim of the report was to help those working in the NHS to learn from adverse events.
The organisations where a culture of reporting is encouraged provide a safer environment for patients; this is in contrast to establishments that are swift to blame or seek retribution (DH, 2000). Staff should be congratulated when reporting incidents, not blamed or penalised if they speak out.

Activity 1.4

Go to http://www.npsa.nhs.uk/patientsafety/reporting and learn about the contents of this website. What is the aim of the National Reporting and Learning System (NRLS)? How might you go about reporting a patient safety incident? Who can report an incident?

Step 5: involving patients and the public

Organisations that promote openness are safer organisations; patients and the public should be involved in incident investigations. Involving patients and the public in aspects associated with healthcare provision can improve patient care as well as patient safety (DH, 2000); the NHS has a duty to actively engage with the community and services users. Many patients are experts in their own condition and their expertise can be harnessed to help identify risks as well as devising ways in which to prevent further negative patient safety issues from occurring.

Being open and honest about what has happened and discussing the problem promptly in a full and compassionate manner can help patients cope better with the effects that can occur when things have gone wrong. Patients want to be involved as partners in their care and as such they should be actively encouraged to participate, for example, when making a diagnosis, making decisions concerning treatment options and discussing the risks and benefits associated with proposed treatments or therapies (Barber, 2001).

An American organisation — The Joint Commission on Accreditation of Health Organisations (JCAHO) — provides a helpful framework for engaging patients in their safety:

- Speak up if you have questions or concerns and if you don’t understand
- Pay attention to the care you are receiving and make sure you are receiving the right treatment and medication
- Educate yourself about your diagnosis
- Ask for a trusted family member or friend to be your advocate
- Know what medicines you are taking and why
- Understand more about your health and social care organisation
- Participate in all decisions around your treatment

Step 6: learning and sharing safety lessons

The focus of the government report, An Organisation with a Memory (DH, 2000), was to ensure that when things go wrong, when a safety incident occurs, it is not important to determine who
is to blame for the incident but how and why it occurred. Analysing how often a mistake occurs, the type of mistake and level of severity of incidents and the lessons that have been learnt can help to continuously improve safety and quality of care. Understanding by sharing can assist in implementing new ways of working in order to reduce future risks.

**Step 7: implementing solutions to prevent harm**

When safety issues have been identified and suggestions have been made to change practice, then these suggestions must be implemented and changes made. Latest solutions and advice can be found at www.npsa.nhs.uk/advice.

**Activity 1.5**

Go to www.npsa.nhs.uk/advice and list some of the safer practice notices that appear on that website and think of ways in which they may be able to help you provide safer care for the people you care for.

**Writing an incident report**

When a patient safety issue occurs, it is usual for some form of incident report to be compiled. There are local policies and procedures (as well as the policies and procedures produced by your university or college) that must be adhered to if a complaint is raised or if there is concern about the quality, and ultimately the safety of patient care. If this is the case, then the matter must be raised immediately with the person supervising you, or to another appropriate person, for example your trade union or tutors at your university or college.

**Activity 1.6**

When you are next in a clinical or care area, take the time to find out what type of documentation is used to report issues that concern patient safety. Have a look at the content of the document and find out what it contains, what information is required, and what then happens to the document once it has been completed.
If you are asked to write a report or statement regarding the incident that concerns you, you must seek advice from a more senior member of staff in the clinical area or from staff at your university or college. Reports and statements must be factual; it is important to be as precise as possible, use a chronological (or sequential) approach, try to write the statement as soon as you can after the event has occurred and always ensure you keep a copy.

**Practical safety concerns**

The next aspects of the chapter will address issues that are often faced on a daily basis by those working in a variety of health and social care settings. In order to protect the patient and the healthcare professional, there are elements of the law that have to be adhered to, for example Health and Safety at Work Act 1974 and Control of Substances Hazardous to Health Regulations (COSHH).

**Infection control**

The Code of Practice for the Prevention and Control of Healthcare Associated Infections (HCAI) (DH, 2006b) arises from the Health Act 2006. The term ‘healthcare associated infection’ encompasses any infection by any infectious agent acquired as a consequence of a person’s treatment by the NHS, or which is acquired by a healthcare worker in the course of his or her NHS duties.

For prevention and control of HCAIs to be effective, measures taken to stop and manage infection must be embedded into everyday practice; they must be applied consistently and this includes nurses, physiotherapists, doctors and other healthcare staff. All staff have a responsibility to maintain high standards of personal hygiene and to ensure that they work in a clean environment and by doing this they are helping to break the chain of infection. Wear a clean uniform everyday, wear minimal jewellery, no bracelets or wristwatches — jewellery traps microorganism and makes washing more difficult; long hair should be tied back and must be off the shoulders — loose flowing long hair has the potential to spread microorganism. Looking clean and hygienic can instil confidence in the public.

The Department of Health (2006a) states that it is important to ensure early and rapid diagnosis of an HCAI. It is also noted that all staff should demonstrate good infection control and hygiene practice; unfortunately it is not possible to prevent all infections. However, with good practice and careful hygiene it is estimated that 15–30% of HCAIs can be prevented.

The Code of Practice for the Prevention and Control of Healthcare Associated Infections (DH, 2006b) provides NHS bodies with information to enable them to plan and implement ways in which they can prevent and control HCAIs. The code outlines issues concerning ways in which organisations can ensure that patients are cared for in a clean environment where the risk of HCAI is kept low. If an NHS organisation fails to observe the code, this can result in an Improvement Notice being served to the NHS organisation by the Health Care Commission or they may be reported for significant failings and placed on ‘special measures’.

Each NHS organisation must produce and adhere to policies and protocols applicable to infection prevention and control; each policy must be clearly marked with a review date. All policies must be based on the best available evidence. Specific policies associated with infection control could include, for example:

- Standard (universal) infection control precautions
- Aseptic technique
Principles of patient safety

- Isolation of patients
- Safe handling and disposal of sharps
- Prevention of exposure to blood borne viruses
- Disinfection policy
- Antimicrobial prescribing

Activity 1.7

Find out where the following policies are kept in the clinical or care area where you are working:

- Standard (universal) infection control precautions
- Aseptic technique
- Isolation of patients

What is the review date?

Standard (universal) infection control precautions

Standard precautions (they are sometimes called universal precautions) according to Parboteeah (2002) are implemented in an attempt to control infection. Infection control is described by Rennie-Meyer (2007) as a number of measures that are taken to prevent infections from occurring in healthcare facilities with the aim to destroy or remove sources of pathogenic microorganisms. There are several ways in which this can happen, for example:

- Interrupting the transmission of pathogens
- Protecting individuals from becoming infected

It is important to minimise, reduce and eliminate potential environmental contamination; all body fluids, including blood, must be considered potentially infectious for all patients. Effective management of blood and body fluid spillages is vital in order to prevent the transmission of infection (Peate, 2008). All staff must ensure that any spillage of blood or another body fluid is dealt with immediately. According to Rennie-Meyer (2007) and Wilson (2006) there are five key points associated with standard precautions:

1. Effective hand washing
2. Personal effective equipment
3. Safe handling and disposal of sharp instruments
4. Safe disposal of waste (including linen)
5. Decontamination of equipment

Standard precautions represent the standard of care that should be used routinely with every patient in an effort to minimise the spread of pathogens between patients and staff and also between staff and patients; these are infection control precautions.
Waste disposal
Clinical waste may be contaminated with body fluids and blood and because of this there will be microorganisms present. Clinical waste must be separated from non-clinical waste and disposed of safely in accordance with policy and protocol to prevent harm to other patients, staff or visitors.

Sharps must also be disposed of safely and small sharps bins are available that can allow you to dispose of used sharps immediately, for example when at the patient’s bedside. The safe disposal of sharps is the responsibility of the user (Harriss and Cook, 2008). Never resheath a needle or over fill a sharps bin; to do so increases the risk of harm.

Activity 1.8
Check the policy and procedure in your place of work that is related to the safe disposal of clinical waste. What does it say about the colour of bags to be used for certain categories of waste? Is there only one type of sharps bin in the care area; what other types are there; what are they to be used for?

Personal protective equipment
The correct use of personal protective equipment (PPE) is another way of preventing HCAIs. PPE includes gloves, aprons and face protection and the use of this equipment will, if used correctly and appropriately, protect you and your uniform from exposure to microorganisms during procedures or episodes of care provision. The equipment forms a barrier between you and, for example, the patient’s bodily fluids. PPE will become contaminated and it is vital that it is removed as soon as possible after the activity has been completed. The law states that each employer must provide PPE for all staff, and it is also important that you use it correctly; you have a duty to do this.
Activity 1.9
What PPE is available where you work; do you know how to access it and do you know how to use it?

Hand hygiene
Pittet et al. (2000) suggest that hand hygiene is one of the most effective measures likely to reduce HCAI. This most essential component of effective infection programmes, hand hygiene, means that those who engage in it must ensure that they use the correct technique in an attempt to ensure that all surfaces of the hands receive contact with the decontaminating agent, for example with the use of soap and water or alcohol gel (Gould and Drey, 2008).

The hands of clinical staff are the most common vehicle of spreading microorganisms between patients. Hands may become contaminated during everyday routine procedures as well as those procedures that may be in contact with blood and bodily fluids. It is vital therefore that staff know when to decontaminate hands so that the transfer of microorganisms is reduced or prevented.

There are two methods that can be used to decontaminate the hands — liquid soap and water or disinfectant hand rub. Liquid soap and water remove dirt and organic matter, as well as microorganisms you may have acquired on your hands; these are known as transient flora. Disinfectant hand rubs offer an alternative to liquid soap and water. They are an easy and effective way of decontaminating your hands, but your hands must not be contaminated with organic matter. Hand rubs can be used at the patient’s bedside. When working in the community, they play an important part in hand hygiene.

Activity 1.10
Where in your place of work are disinfectant hand rubs available? What do hand hygiene posters in your care area say — what message are they trying to get across?

It is important that if you have any cuts or scratches they are covered by a waterproof plaster; do not leave any cuts or scratches uncovered. A consequence of washing your hands often is that they may become dry; if this is the case use a moisturiser — you should avoid using shared pots of moisturiser. Nails should be kept clean and short: long nails or false nails can trap microorganisms; nail polish and false nails are not allowed.

When to wash hands
Hands must be cleaned properly as microorganisms can be picked up at any time putting patients at risk. Hands should be cleaned before:

- Starting work
- You touch the patient’s equipment or furniture
Essential nursing care

- Touching patients or their belongings
- Handling food or drinks

It is just as important to ensure that you clean your hands to avoid spreading microorganisms after:

- Handling dirty linen
- Handling waste
- Touching a patient or his or her belongings
- Removing gloves
- You touch patient equipment or furniture

There are also other instances when the hands must be cleaned properly and these are after:

- Finishing your shift
- Blowing your nose
- Using the toilet
- Touching anything dirty
- Coughing or sneezing into your hands

How to clean hands

Often the correct way for cleaning hands is taken for granted and it is assumed that as adults we know how to clean our hands properly. Whilst hands may not always look dirty they may in fact be harbouring a range of microorganisms; this may be particularly the case if they have been in contact with anything that is contaminated, for example after handling waste. This aspect of the chapter describes the correct technique for cleaning hands using soap and water and alcohol hand rub.

Figure 1.3 provides diagrammatic representation associated with soap and water hand washing and alcohol rub hand hygiene for visibly clean hands.

Activity 1.11

With your colleagues’ permission watch them clean their hands using either soap and water or disinfectant hand rub, and observe their technique during the procedure. As the process progresses, note if they have completed each of the steps below. If a step is not done properly, take notes on what you have seen. Then ask your colleagues to watch you and do the same activity. Discuss what you all have observed and compare notes.

<table>
<thead>
<tr>
<th>Step</th>
<th>Completed?</th>
<th>Notes/observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palms and backs of hands</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Between fingers</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Nails</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Thumbs</td>
<td>Yes/No</td>
<td></td>
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<tr>
<td>Fingertips</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Wrists</td>
<td>Yes/No</td>
<td></td>
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</table>
HAND CLEANING TECHNIQUES

**How to handrub?**
WITH ALCOHOL HANDRUB

1a. Apply a small amount (about 3ml) of the product in a cupped hand, covering all surfaces

1b. Rub hands palm to palm

2. Rub palms together

3. Rub back of each hand with the palm of other hand with fingers interlaced

4. Rub hands palm with fingers interlaced

5. Rub with backs of fingers to opposing palms with fingers interlocked

6. Rub tips of fingers in opposite palm in a circular motion

7. Rub each wrist with opposite hand

8. Rub each thumb in opposite hand using rotational movement

9. Once dry, your hands are safe

Adapted from WHO World Alliance for Patient Safety 2006

**How to handwash?**
WITH SOAP AND WATER

0. Wet hands with water

1. Apply enough soap to cover all hand surfaces

2. Wet hands with water

3. Apply enough soap to cover all hand surfaces

4. Rub hands palm with fingers interlaced

5. Rub with backs of fingers to opposing palms with fingers interlocked

6. Rub tips of fingers in opposite palm in a circular motion

7. Rub each wrist with opposite hand

8. Rub each thumb in opposite hand using rotational movement

9. Rinse hands with water

10. Use elbow to turn off tap

11. Dry thoroughly with a single-use towel

12. Your hands are now safe

**Figure 1.3** Hand washing technique (Source: Reproduced with the kind permission of the NPSA)
Gould *et al.* (2007) have noted that despite the fact that alcohol hand rubs are being widely promoted to increase the frequency of hand hygiene in the UK, this does not appear to have been accompanied by convincing decreases in rates of HCAI. Further research is needed with respect to this method of hand decontamination.

**Aseptic technique**

All clinical procedures should be performed in a manner that maintains and promotes the principles of asepsis. All people who undertake procedures that require aseptic technique should be provided with education, training and assessment in relation to the activity. The following are guidelines to be used in using aseptic technique to dress a wound. The procedure can be used in a hospital or community setting with minor modifications; for example, in a hospital setting a dressing trolley will be available and this may not be the case in a person’s own home. The procedure may need to be adjusted to ensure that it complies with local policy and procedure:

- Explain the proposed procedure to the patient.
- Ideally, use a treatment room to perform the dressing change; if this is not possible ensure that the environment surrounding the bed is appropriately prepared.
- Wash hands using correct technique.
- The dressing trolley should be washed and dried according to policy; disinfection according to policy should also be undertaken.
- Equipment should be collected and prepared on the bottom shelf of the trolley; the equipment should be sterile and, if appropriate, expiry dates on all materials should be checked to ensure that they are in date and also to make certain that they are intact with no leakage.
- During the procedure the patient should be observed for signs of distress and anxiety and action taken to alleviate anxiety; for example, explain what is happening and what is to happen.
- Ensure that the bed is adjusted to a suitable level so as to reduce any risk of back injury and to promote comfort.
- Position the patient in such a way that they are comfortable and also so that you are able to access the wound to be dressed.
- The patient’s clothing should be adjusted so that the wound is exposed enough to be dressed safely; at all times the patient’s dignity must be protected.
- The patient must be given an explanation of what is happening and what is to happen.
- A plastic apron should be worn to prevent cross infection from uniform to wound.
- Wash hands using correct technique.
- The outer package of the dressing pack should be opened and the contents slipped out on to the top of the shelf of the trolley; this will then act as the sterile field.
- The patient’s outer dressing is loosened.
- Wash hands using correct technique; at this stage it may be appropriate to use alcohol hand rub.
- The sterile field is opened out — touching it as little as possible; other equipment to be used is also slipped out of their packs on to the surface; saline (if this is to be used) is poured out into the gallipot that has come as a part of the dressing pack.
- Hands are decontaminated using the alcohol hand rub.
- Remove the wound dressing using the disposable bag in such a way that the hands do not touch the wound or its dressing.
Principles of patient safety

- Attach the used bag to the side of the trolley.
- At this stage sterile gloves may be applied depending on policy.
- The wound is then cleaned and dressed according to the care plan; assessment is made of the wound and evidence of wound healing to be noted.
- A dressing is applied and secured in such a manner that will provide an environment that will promote optimum wound healing.
- The patient is made comfortable and any patient education required is given.
- All used equipment is disposed of in accordance with policy and procedure.

The procedure, findings and any other information must be documented in the patient’s care plan and if appropriate a verbal report to the person in charge may be needed.

To reiterate, the guidelines provided here are just that, guidelines. Local policy and procedure must be adhered to in order to provide safe and effective care. The aim is to prevent infection and to promote wound healing. It is important to have an understanding of the physiology of wound healing as well as the factors that can influence this. Furthermore, an appreciation of wound assessment, choice of wound dressings and local policy is vital if care is to be effective and above all safe. Chapter 7 discusses the principles of skin care and includes issues associated with wound healing.

Levels of decontamination

There are three levels of decontamination:

- Cleaning
- Disinfection
- Sterilisation

Cleaning

Cleaning is the removal of dirt, dust and other organic matter using water and detergent. Approximately 80% of microorganisms will be removed if the item being cleaned is dried, but it must be dried thoroughly. This method is suited to any item that comes into contact with intact skin, for example beds, chairs, non-invasive monitoring equipment and intravenous pumps. If an item is to be cleaned that has been contaminated with body fluids or excretia, for example a commode, then a disinfectant solution such as hypochlorite is needed. Cleaning is the first step to decontamination by disinfection or sterilisation.

Disinfection

Disinfection removes microorganisms to a level at which they are no longer harmful; it does not, however, have any effect on spores. There are two methods of disinfection:

- Heat, i.e. the bedpan washer
- Chemical, i.e. chemicals used to disinfect instruments such as an endoscope

For disinfection to be effective, the items to be disinfected must be cleaned first.

Sterilisation

This method of decontamination is effective in destroying all microorganisms including spores. The preferred method of sterilisation is by autoclave. Just like disinfection, for this method to be effective all items must be thoroughly cleaned first.
Manual handling

Manual handling is defined by the Health and Safety Executive (HSE) (2002) as the act of transporting or supporting of a load (including the lifting, putting down, pushing, pulling, carrying or moving thereof) by hand or bodily force. A load is any object or person that must be moved; the load does not necessarily have to be heavy. Some examples of activities that constitute manual handling can be found in the box below.

- Lowering a load
- Rocking a load
- Pulling a load
- Lifting a load
- Pushing a load
- Supporting a load
- Rolling a load

Many activities carried out on a daily basis involve manual handling, at home and in the workplace, for example lifting boxes, carrying children, turning a mattress. In health and social care settings this is also true; therefore, it is important to understand how to undertake manual handling safely and effectively in order to prevent injury.

There are some areas of the body that are prone to injury more than others:

- The upper limbs — including the arm, hand, wrist, thumb and finger.
- The torso — including the lower back.
- The lower limbs.

Activity 1.12

The results of a back injury can impact on various aspects of an individual’s life. See if you can describe what impact may occur on the five aspects of life outlined in this table as a result of a back injury.

<table>
<thead>
<tr>
<th>Aspect of life</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td></td>
</tr>
<tr>
<td>Family life</td>
<td></td>
</tr>
</tbody>
</table>
The back is the most likely part of the body to be injured in a manual handling incident. The spine (made up of 24 vertebrae) needs to support the head, upper parts of the body, the pelvis and the legs; this important supporting structure needs to be flexible, strong and stable. Back injuries occur when flexibility, strength and stability are compromised.

Risk management — manual handling

It is important to manage and assess risk when completing manual handling tasks. In almost every activity of living, we engage in risk taking and we usually make choices about the risks we take. We usually weigh up factors that enable us to make decisions; the outcome of the weighing up of the factors means that we either take the risk or we do not.

Risk assessment is the process of considering the potential dangers that may be associated with the activity to be undertaken. In order to understand this, there are three terms associated with risk that need to be defined:

1. Hazard — a situation or activity that might lead to harm.
2. Harm — the damage or injury caused by the hazard.
3. Risk — the likelihood and severity of the potential harm (high or low).

There are processes available to help when assessing risk and these are steeped in law. Two key aspects of legislation — the Manual Handling Operation Regulations 1992 and the Management of Health and Safety at Work Regulations 1999 — are the most relevant. The regulations set out the responsibilities for both employers and employees in avoiding unnecessary risks when manual handling. There is a three-stage framework associated with manual handling tasks that employees are obliged to apply:

1. Avoid — avoid hazardous manual handling tasks; can the activity be carried out in another way?
2. Assess — assess activities that can be avoided; what are the dangers associated with the task?
3. Reduce — reduce the risk of injury from the task to be carried out; how can the identified dangers be reduced?

In assessing a manual handling task, the following five headings, TILEO, can help you to consider all the aspects of the situation in detail:

- Task
- Individual
- Load to be moved
- Environment
- Other factors in this case to be considered

The TILEO framework can be of value in identifying the dangers in manual handling tasks and to help explore ways to reduce risks. The TILEO framework can be applied to everyday activities at work or whilst going about daily activities.

Activity 1.13

See if you can find evidence of the TILEO framework at use in your work place.
Remember, you should always avoid performing a hazardous task. Always assess the situation and try to reduce the risk by finding a safer way of doing it.

**Safer handling principles**

It is important to note that there is no single correct way to undertake any manual handling activity; an ergonomic approach considers manual handling as a whole taking into account a range of relevant factors — the task, the environment and individual capability. Ergonomics according to Parboteeah (2002) is the study of the relationship between the working environment and the people within it. There are many factors that will impinge on the task to be carried out; for example, physical differences will affect individual risk factors, which in turn will affect the way we need to move. Table 1.3 provides tips and suggestions associated with two manual handling activities.

**Patient handling**

This aspect of the chapter can only provide some insight into the complex issues associated with manual handling of patients in health and social care settings. The reader is strongly advised to seek further understanding from a range of human and material resources to ensure that activities are safe. The aim should be to avoid all manual lifting in all but exceptional or life-threatening circumstances.

Each patient must be individually assessed. Assessment must be undertaken by a competent practitioner who must take into account individual needs, capabilities and circumstances. Alongside this, the person undertaking the assessment must pay due regard to staff, carers and patient safety. Assessment and any decisions to be taken should involve the patient if possible.

When assessment has been undertaken, a problem-solving approach should be implemented; this will include the consideration of a variety of handling methods and equipment to reduce the risk of injury. At all times patient independence should be encouraged. A written plan following assessment should be produced which must be reviewed at regular intervals or when the patient’s condition dictates. No member of staff should be expected to put his or her own safety at risk by lifting manually. Hoists, sliding aids and other specialist equipment should be used after a thorough assessment has been undertaken. Individual risk assessment must follow safer handling principles.

Employees must take reasonable care of their own health and also be aware that they have a responsibility to care for the health of others whose safety may be affected by their actions or omissions when they are involved in manual handling operations; they must also attend any training that is related to moving and handling activities (Harriss and Cook, 2008). Staff must observe safe systems of work and use safety equipment, promptly reporting any defects in handling and equipment aids; any unsafe equipment must be taken out of service and labelled as such. Prior to using equipment such as a hoist or other lifting aid, the user should be familiar with the manufacturer’s instructions for use and they must comply with these instructions (Pittet et al., 2000). It is also a requirement of staff to ensure that they wear suitable clothing and footwear to undertake manual handling safely: flat supportive footwear with a non-slip sole is required; trousers or culottes should be worn as opposed to skirts or dresses; tops or tunics should be non-restrictive and allow ease of movement.
Table 1.3  Tips and suggestions associated with two manual handling activities

<table>
<thead>
<tr>
<th>Activity to be undertaken</th>
<th>Tips and suggestions</th>
</tr>
</thead>
</table>
| Lifting a load from the floor | Lifting a load from the floor is one of the more difficult sorts of manual handling task you may carry out. If possible, avoid carrying out the task manually, use machinery or approach the task in a different way. If it cannot be avoided, these steps may be helpful.  
- **Adopt a stable base** — place the feet on either side of the load with one foot slightly in front of the other and point in the direction you want to go  
- **Adopt a posture appropriate to the task** — maintain the natural ‘S’ curve of the spine as you bend your knees. Lean slightly forward to take hold of the load. If you start to feel uncomfortable stop and reassess the task  
- **Get a firm grip** — grip the load firmly and try to keep the arms within the base created by your feet  
- **Come up smoothly** — ensure a stable base throughout the lift, keep the load close to you, push up through your leg muscles, brace the stomach muscles and breath out gently, raise the chin slightly as you begin to come up  
- **After the lift** — do not twist or stoop, beware of the arch in your back  
- **Lowering the load to the floor** — in essence the issues are the same but in reverse |
| Team handling | Lifting or carrying a load with others may cause problems. When two or more people lift or carry a load between them, there are some additional risks. Always say ‘ready, steady, lift’ when lifting — this is safer as everyone lifts at the same time.  
- **Is the load too heavy?**  
- **Beware of height differences; this can affect how much of the load any one individual has to manage**  
- **Can everyone see where they are going?**  
- **Can everyone get a good grip on the load?** Some parts of a load maybe harder to grip than others  
- **Does everyone start to lift at the same time?** |
Chapter summary

This chapter has introduced, and only introduced, some important issues that will impinge on both patient and staff safety. If the issues discussed are applied in the appropriate ways then this can help to prevent harm and injury to yourself and those you care for. By understanding the contents of this chapter, you can use your skills and insight to enhance the provision of care. It is not possible in a chapter of this size to address all issues concerning patient safety, and the reader is advised to read other texts and consult further in an attempt to build upon what has been provided here.

It is important that if at any stage you are in doubt about any element of patient safety (no matter how trivial you think it is) you must seek advice and support from others. Never put your patient, and indeed never put yourself, at risk of harm or injury.
Answers to Activities

**Activity 1.1 Key terms**

Using a nursing or medical dictionary or any other resource you think may help you, begin this chapter by finding out the meaning of the key terms listed below. There may be human resources around you to help you with terms, for example, registered nurses, a pharmacist or a health care manager. There are blank spaces provided for you to enter your responses.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asepsis</td>
<td>Being free of disease producing microbes</td>
</tr>
<tr>
<td>Adverse health care event</td>
<td>An event or omission arising during clinical care and causing physical or psychological injury to a patient (this phrase is being replaced by the phrase patient safety incident)</td>
</tr>
<tr>
<td>Bio hazardous waste</td>
<td>Items that are contaminated with body fluids, i.e. blood, excrement, body fluids, secretions</td>
</tr>
<tr>
<td>Chain of infection</td>
<td>The sequence of events that results in the passing of infection from one person to another</td>
</tr>
<tr>
<td>Clinical waste</td>
<td>Waste that is clinical waste as defined by the Controlled Waste Regulations</td>
</tr>
<tr>
<td>Disinfection</td>
<td>The process of becoming clean</td>
</tr>
<tr>
<td>Friction</td>
<td>The rubbing of one surface against another</td>
</tr>
<tr>
<td>Hazard</td>
<td>Anything that can cause harm</td>
</tr>
<tr>
<td>Healthcare Associated Infection (HCAI)</td>
<td>A HCAI is an infection that develops as a direct result of any healthcare treatment. The infection is not present when a patient begins the healthcare treatment</td>
</tr>
<tr>
<td>Healthcare Commission</td>
<td>An independent organisation that exists in England and Wales to promote improvements in the quality of healthcare and public health in England and Wales</td>
</tr>
<tr>
<td>Healthcare near misses</td>
<td>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 the result of compensating action, thus preventing injury to a patient</td>
</tr>
<tr>
<td>Infection</td>
<td>A disease state that is caused by the invasion and growth of microbes in and on the body</td>
</tr>
<tr>
<td>Improvement notice</td>
<td>A legal power handed to the Healthcare Commission placing compulsory duties on trusts to improve performance</td>
</tr>
<tr>
<td>Manual handling</td>
<td>The act of transporting or supporting of a load (including the lifting, putting down, pushing, pulling, carrying or moving thereof) by hand or bodily force.</td>
</tr>
</tbody>
</table>
Find out what the function of the NPSA is.

You may have discovered that the NPSA established in 2001 was created by the government to coordinate the efforts of all those involved in healthcare, and more importantly to learn from patient safety incidents that have occurred in the NHS. Other providers of healthcare, for example the independent sector have their own arrangements in place to ensure safety of patients.
Activity 1.3

Find out when meetings or briefings regarding safety issues are being held in the ward or department where you are working with the intention of attending one of them. Try to find out who has been appointed to act as the safety champion in your organisation; what is their role. Who in the institution where you are working is the nominated Director of Infection Prevention and Control (DIPC) and what role do they undertake? Who is the DIPC responsible to?

Meetings/briefings — frequency and content will vary depending on individual trusts. Safety champions undergo a specified amount of training to carry out their role effectively; they primarily act as role models, promoting the prevention and control of infection within their team and their department or ward.

The role of the DIPC is multifaceted and includes:

- Being a member of senior management — (producing Board and Chief Executive reports)
- Possessing professional credibility (having special expertise)
- To act as a reporting line for the infection control team
- To implement policy
- To performance manage
- To allocate resources

The DIPC is responsible to the infection control team within the organisation.

Activity 1.4

Go to [http://www.npsa.nhs.uk/patientsafety/reporting](http://www.npsa.nhs.uk/patientsafety/reporting) and learn about the contents of this website. What is the aim of the National Reporting and Learning System (NRLS)? How might you go about reporting a patient safety incident? Who can report an incident?

The aim of the NRLS is to promote comprehensive national learning about patient safety incidents.

The website takes you through the reporting system.

You can use the NRLS health service eForm to report a patient safety incident if you work in the NHS and the patient involved in the incident was being cared for by the NHS in England or Wales.

Members of the public can make a complaint or report a problem by calling the NPSA on 0207 927 9500 or they can fill in the online reporting form.
Activity 1.5

Go to www.npsa.nhs.uk/advice and list some of the safer practice notices that appear on that website and think of ways in which they may be able to help you provide safer care for the people you care for.

You may have noticed safer practice notices related to:
- Blood transfusions
- Patient identification
- Issues associated with medications
- Equipment, i.e. infusion devices

Activity 1.6

When you are next in a clinical or care area, take the time to find out what type of documentation is used to report issues that concern patient safety. Have a look at the content of the document and find out what it contains, what information is required, and what then happens to the document once it has been completed.

The document may be called different things in different areas; some organisations may call it an accident form and others may refer to it as an incident form. The content of the document, what data and information are required, may also vary from establishment to establishment. You will notice that the person filling in the documentation will need to provide a range of data and information related to the patient safety issue; this must be factual information and, when appropriate, supporting evidence may be required, for example supporting statements from other people involved in the incident.

Activity 1.7

Find out where the following policies are kept in the clinical or care area where you are working:
- Standard (universal) infection control precautions
- Aseptic technique
- Isolation of patients

What is the review date?

The storage of polices and protocols should be easily accessible by all staff, patients and the public so that they can consult them as and when required. Each policy must be clearly marked with a review date (DH, 2006b). There should be an audit trail that will demonstrate compliance with the policy. When new members of staff begin employment with the NHS organisation, information on the policies should be included in the induction programme.
Activity 1.8

Check the policy and procedure in your place of work that is related to the safe disposal of clinical waste. What does it say about the colour of bags to be used for certain categories of waste? Is there only one type of sharps bin in the care area; what other types are there; what are they to be used for?

The storage of policies and protocols should be easily accessible by all staff, patients and the public so that they can consult them as and when required. Each policy must be clearly marked with a review date (DH, 2006b). There should be audit trail that will demonstrate compliance with the policy. When new members of staff begin employment with the NHS organisation, information on the policies should be included in the induction programme.

The different coloured bags are related to the correct segregation of waste:

- Yellow bags are for known hazardous waste, and disposal is by incineration, for example waste contaminated with blood.
- Orange bags are for hazardous waste, for example heavily contaminated incontinence pads, dressing packs if heavily soiled.
- Black bags are for domestic waste, for example mouth pieces from peak flow meters, office waste.

The different coloured sharps bins are related to the correct segregation of waste:

- Yellow lidded sharps bin are for known hazardous sharps and disposal is by incineration, for example disposable needles.
- Orange lidded sharps bins are for hazardous sharps, for example intravenous lines.
- Purple lidded sharps bins are for cytotoxic and cytostatic waste, for example syringes either fully or partially discharged that have contained drugs that are classified as cytotoxic and cytostatic (including vaccines).

Activity 1.9

What PPE is available where you work; do you know how to access it and do you know how to use it?

You may have identified gloves, aprons and face protection (including goggles and masks).

Activity 1.10

Where in your place of work are disinfectant hand rubs available? What do hand hygiene posters in your care area say — what message are they trying to get across?

Hand rubs in hospital settings should be available at every bedside; you may also have seen them at entrances and exits to wards and departments. Hand hygiene posters aim to encourage hand hygiene for all.
Activity 1.11

With your colleagues’ permission watch them clean their hands using either soap and water or disinfectant hand rub, and observe their technique during the procedure. As the process progresses, note if they have completed each of the steps below. If a step is not done properly, take notes on what you have seen. Then ask your colleagues to watch you and do the same activity. Discuss what you all have observed and compare notes.

<table>
<thead>
<tr>
<th>Step</th>
<th>Completed?</th>
<th>Notes/observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palms and backs of hands</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Between fingers</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Nails</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Thumbs</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Fingertips</td>
<td>Yes/No</td>
<td></td>
</tr>
<tr>
<td>Wrists</td>
<td>Yes/No</td>
<td></td>
</tr>
</tbody>
</table>

Activity 1.12

The results of a back injury can impact on various aspects of an individual’s life. See if you can describe what impact may occur on the five aspects of life outlined in this table as a result of a back injury.

<table>
<thead>
<tr>
<th>Aspect of life</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>Whilst off sick with back injury, salary will still be paid but, if a person is dependent upon earning money through overtime for example, this can impinge on a person’s life</td>
</tr>
<tr>
<td>Social</td>
<td>Socially, as a result of the back injury a person may not be able to get about as much as they may have done; they may not, for example, be able to get to the gym to meet friends and take part in social activities</td>
</tr>
<tr>
<td>Domestic</td>
<td>It may be difficult to carry out daily household chores, for example cleaning or reaching up for things on a higher shelf or conversely bending down to pick things up</td>
</tr>
<tr>
<td>Professional</td>
<td>The result of the injury may mean that the person has to seek alternative employment</td>
</tr>
<tr>
<td>Family life</td>
<td>A person may not be able to take part in usual family life activities such as picking up and cuddling a child or driving to escort an elderly relative for hospital appointments</td>
</tr>
</tbody>
</table>
Activity 1.13

See if you can find evidence of the TILEO framework at use in your work place.

Was the framework readily available? Was there one?

Activity 1.14 Reflection

Take some time when in clinical practice to reflect on the issue of patient safety; choose an activity that you can use to reflect upon. In the box below write what happened, how you felt, and what you would do differently (if anything) next time you are involved in the promotion of patient safety:

What happened?
• Describe the scenario briefly relating to your learning need

How did it make you feel?
• Did you feel good or bad about it?
• What was good or bad about the situation?
• Did you have adequate underpinning knowledge to carry out the care?
• If you had previous experience of similar situation, was it useful this time?

What would you do differently (if anything) next time?
• Has this personal experience prepared you to do further reading and gained more practice under supervision

This is only a guide. Please address the sub-headings to meet your own learning needs.

References


**Further reading**


**Useful websites**

- Department of Health: www.dh.gov.uk
- Infection control e-learning programme for NHS staff: http://www.infectioncontrol.nhs.uk/
- Health and Safety Executive: http://www.hse.gov.uk/
- National Patient Safety Agency: www.npsa.nhs.uk
- National Resource for Infection Control: www.nric.org.uk

Further reading


Useful websites

- Department of Health: www.dh.gov.uk
- Infection control e-learning programme for NHS staff: http://www.infectioncontrol.nhs.uk/
- Health and Safety Executive: http://www.hse.gov.uk/
- National Patient Safety Agency: www.npsa.nhs.uk
- National Resource for Infection Control: www.nric.org.uk