

Essential Practice for Infection Prevention and Control

Guidance for nursing staff



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This is an RCN practice guidance. Practice guidance are evidence-based consensus documents, used to guide decisions about appropriate care of an individual, family or population in a specific context.

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This publication provides important information and guidance on the essential principles of infection prevention and control and highlights why other issues, such as nutrition and hydration, should be viewed as an essential complementary component of nursing practice.

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People, including patients receiving health and social care, are at risk of developing infections as a result of their compromised state of health, underlying medical conditions, or as a result of contact with health care interventions such as surgery, diagnostic testing or invasive devices.

Care is provided in a wide range of settings including a person's own home, hospital day

Prevention and management of infection is the

The following section outlines some of the key

A patient who is malnourished may present as being sleepy, and therefore may be reluctant to eat and drink. Dehydration contributes to the development of urinary tract infections, constipation and the increased risk of pressure ulcers and falls (RCN, 2007).

Patients on antibiotics are additionally at risk of complications such as oral fungal infections (for example, *Candida*) and disruption to gut flora resulting in antibiotic associated diarrhoea or *C. difficile* infection. Other medications can also produce side effects – such as lack of appetite, nausea and vomiting which may further increase the risk of malnutrition (Shepherd, 2009).

It is vital that on admission to hospital patients are screened to assess their nutritional status using a recognised tool such as the malnutrition universal screening tool (MUST), (NICE, 2006). If found to be at risk, an individual nutrition plan should be implemented. Food and fluid intake should be monitored and a scheme such as the 'red tray system' may be helpful for staff to support vulnerable patients (Age UK, 2010). If a patient is at risk of malnutrition, early referral to a dietitian should be considered for timely support.

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The common specimens that are collected and managed by nursing staff include blood, urine, faeces, sputum and wound swabs. Nursing staff may also undertake screening for MRSA, Carbapenemase-producing Enterobacteriaceae (CPE) or other multi-resistant bacteria according to local policies.

- ensure that specimen equipment, including viral media, is stored correctly and is not out of date.

It is important to note that it is essential to avoid contamination of normally sterile samples, such as blood and urine. However, faeces consist mainly of bacteria and contamination with a small amount of urine should not prevent submission of a specimen for investigation. To obtain further information on the collection, handling and labelling of specimens, refer to your local specimen collection or laboratory policies or speak to your infection prevention advisor or laboratory staff who will be able to provide you with advice.

Standard infection control precautions, formerly known as universal precautions, underpin routine best practice, protecting both staff and patients from micro-organisms that may cause infection.

By applying standard precautions at all times and to all patients, best practice becomes embedded as a core element of professional practice and the risks of infection are minimised. Note: the use of standard infection control precautions should not be confused with a suspicion that all patients/clients are contagious or are carrying a transmissible infection. The use of equipment or practices described below reduces the risk of transfer of micro-organisms between people and the care environment that may cause infection in vulnerable patients/staff.

The elements of key nursing practice points are summarised in the following sections.

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Hand hygiene is a term used to describe processes that render the hands of health care workers safe (having reduced the number of micro-organisms present that are acquired through activities that involve touching patients, equipment or the environment in the workplace). The term hand hygiene includes handwashing, surgical scrub and the use of alcohol gel. The type of hand hygiene performed is dependent on the type of care that will or has been carried out.

As mentioned previously no one area of nursing practice should be viewed as a stand alone solution to the prevention of infection, however evidence shows that improving hand hygiene contributes significantly to the reduction of HCAs (Loveday et al., 2014). Evidence suggests that many health care professionals, including nursing staff, do not perform hand hygiene as often as is required or use the correct technique.

Health care workers have the greatest potential to spread micro-organisms that may result in infection due to the number of times they have

contact with patients or the patient environment. Hands are therefore a very efficient vehicle for transferring micro-organisms.

Hospitals should be considered unique places that differ considerably in terms of the risk of potential infection spread compared to a 'normal' home environment. Although risks occur wherever direct contact between people or equipment occurs, hospitals have a large number of people living in a relatively small physical area. Additionally, patients may have direct contact with a large number of people (staff) as a result of their 24 hours a day care needs – this allows for many more opportunities for micro-organisms, some of which may be resistant to antibiotics, to be passed from one person to another than occurs in 'normal' daily life at home.

Infection can occur when micro-organisms are transferred from one patient to another, from equipment or the environment to patients or between staff. Disruption to the patient's 'normal bacterial flora' can also predispose infection if

for use. Care should be taken to avoid risks of patients or visitors ingesting hand sanitisers as these can cause harm including death as highlighted in a recent coroners statement (HM Coroners, 2017).

All health care organisations (including GP surgeries, hospitals and care homes) should have policies or guidance relating to hand hygiene in place. All staff should be familiar with these and comply with them.

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It is important to recognise that the hands of health care staff will always carry bacteria, be it their own bacteria or those that have attached as a result of activities (handling equipment, touching surfaces or patients).

Although it is not possible to 'sterilise' hands, the number of bacteria present can be reduced significantly through good hand hygiene practice. While it is not possible to perform hand hygiene on every occasion during the working day or night, there are a number of occasions when hand hygiene is specifically recommended to guide staff in best practice.

Situations that pose the greatest risks include, but are not limited to:

- before patient contact
- before contact with a susceptible patient site (such as an invasive device or wound)
- before undertaking an aseptic technique or procedure
- after exposure to body fluids (blood, vomit, faeces, urine and so on)
- after glove removal
- after patient contact
- after contact with the patient's immediate environment.

F 1 H

 <p>1 Palm to palm</p>	 <p>2 Right palm over left dorsum and left palm over right dorsum</p>
 <p>3 Palm to palm fingers interlaced</p>	 <p>4 Backs of fingers to opposing palms with fingers interlocked</p>
 <p>5 Rotational rubbing of right thumb clasped in left palm and vice versa</p>	 <p>6 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa</p>

Do not forget to include wrists and dry well using paper towels

Hand sanitisers including alcohol hand rubs provide an effective and convenient alternative to hand washing with soap and water, and are used in both health and social care settings to support hand hygiene. While very effective as destroying micro-organisms on 'socially clean hands', these are not effective in all circumstances (Pittet et al 2009, Loveday et al 2014).

Alcohol is not a cleaning agent. Alcohol based hand rub should not be used for hand hygiene when hands are visibly dirty, or gastrointestinal infections (eg, norovirus or *C. difficile*) is suspected or proven. In this instance hand hygiene should be performed using liquid soap and water before hand rubs can be applied. This is because few current hand rub products have been shown to be effective with such infections.

To support compliance with hand hygiene in the workplace, health care workers should meet the following standards while working:

- keep nails short, clean and polish free
- avoid



Glove use is an integral element of safe health care practice, however evaluation of compliance

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automatic safety mechanism that is activated after use, such as when a cannula is withdrawn

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Sharps include needles, scalpels, stitch cutters, glass ampoules, bone fragments and any sharp instrument. The main hazards of a sharps injury are blood borne viruses such as hepatitis B, hepatitis C and HIV.

It is not uncommon for staff to be injured by the use of poor practice of others; for example, cleaners who sustain injuries as a result of sharps being placed in waste bins. Sharps injuries are preventable and learning following incidents should be put in place to avoid repeat accidents.

Between 2004 and 2014, there were just under 5,000 significant occupational exposure incidents reported to the Public Health England (PHE, 2014). Significant exposures are percutaneous or mucocutanenous where the source patient is hepatitis B, hepatitis C or HIV positive.

To reduce the risk of injury and exposure to blood borne viruses, it is vital that sharps are used safely and disposed of carefully, following your workplace's agreed policies on use of sharps. Education and guidance should be available through your employer on how to manage sharps safely.

Some procedures have a higher than average risk of causing injury. These include surgery, intra-vascular cannulation, venepuncture and injection. Devices involved in these high-risk procedures include:

- IV cannulae
- needles and syringes
- winged steel needles (known as butterfly needles)
- phlebotomy needles (used in vacuum devices).

To reduce the use of needles and syringes, the use of 'safety engineered devices' to support staff undertaking cannulation, phlebotomy and so on should be supported by employing organisations. Safety engineered devices have a built in feature to reduce the risk of a sharps injury before, during and after use. Devices can be passive or active. For example, passive devices have an

You should ensure that:

- handling of sharps is kept to a minimum
- syringes or needles are not dismantled by hand and are disposed of as a single unit straight into a sharps container for disposal
- sharps containers are readily available as close as possible to the point of use (sharps trays with integral sharps boxes are a useful resource to support this practice point)
- needles are never re-sheathed/recapped
- needles are not broken or bent before use or disposal
- arrangements should be put in place to ensure the safe disposal and transport of sharps

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segregation of waste, and audits. This should include the colour coding of bags used for waste, for example:

- municipal/domestic waste (black bags)
- offensive waste (tiger striped)
- infectious waste (orange).

All health care and support staff should be educated in the safe handling of waste, including segregation, disposal and dealing with spillages.

A

Asepsis is a process that seeks to prevent or reduce micro-organisms from entering a vulnerable body site such as a wound in surgery, or during the insertion of invasive devices such as urinary catheters or intra-vascular devices. Asepsis reduces the risk of an infection developing as a result of the procedure being undertaken.

An aseptic technique includes a set of specific actions or procedures performed under controlled conditions. The ability to control conditions will vary according to the practice setting, however the following principals should be applied in all cases:

- ensure the area where the procedure is to take place is as clean as possible
- ensure as little disturbance as possible occurs during the procedure which could cause air turbulence and the distribution of dust – for example, bed making, floor sweeping or buffing, estates work
- perform hand hygiene prior to and during the procedure as required, gloves are not always required and prior to their use a risk assessment should be conducted to decide if gloves are needed
- use sterile equipment for contact with the vulnerable site



Single use equipment (where the item can only be

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A dirty or contaminated clinical environment is one of the factors that may contribute to HCAs. Exposure to environmental contamination with spores of *C. difficile* is one example of an occasion when the environment contributes to the development of infection.

Many micro-organisms can be identified from patients' environments and these usually reflect bacteria carried by patients or staff (for example as with *S. aureus*). Contact with the immediate patient or a contaminated environment by the hands of staff can also be a route for transmission of micro-organisms. High standards of cleanliness will help to reduce the risk of cross-infection and are aesthetically pleasing to patients and the public.

Good design in buildings, fixtures and fittings is also important to support efficient and effective cleaning. Guidance on building design is available throughout the UK via organisations such as Health Facilities Scotland (HFS), NHS Wales Shared Services Partnership, Facilities Service(e)-10(e)-14.6 (s S)6.2 1-42.7 (v)-37.8 K tae ainpotS2Haalas)-14.6 (s To)9.2 ((d t)-23 he p)9.7.9 (e(e)-10(e)-14.6

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- use of an aseptic technique when inserting devices, including hand hygiene
- compliance with local policy for selection of insertion sites
- application of a transparent semi-permeable dressing to the site to permit ongoing observation of the site
-

immediately, followed by prompt reporting of the incident.

Staff should ensure they are familiar with their local policies and procedures should such an incident occur in order to ensure prompt treatment for themselves or co-workers if affected. Advice and follow-up care from your occupational health provider will also be essential.

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It is estimated that 10 million lives a year could

in agriculture. A great deal of antimicrobials are used for animals so it is important that efforts are made to reduce this. Other interventions include encouraging more individuals into infectious disease and associated specialities and carrying out global research into antimicrobial development.

Further information on the interventions mentioned above and AMR can be found at: <http://amr-review.org>



The RCN and the Infection Prevention Society (IPS) have published an infection prevention and control toolkit, aimed at reducing infections and managing the risks associated with antimicrobial resistance. The toolkit highlights the importance of sepsis and its two main causes – pneumonia and urinary tract infections, estimated to be responsible for a third of all health care associated infections, and a leading cause of ill health outside of hospitals.

Highlighting that infections are not confined to hospitals, the toolkit acknowledges the size of the challenge and the requirement of a clear, effective national plan of action. The toolkit is the first step towards reducing two serious burdens of infection in England, combatting antibiotic resistance and, most importantly, improving public health and patient care.”

The toolkit is supported by NHS England.



Patient and public anxiety about HCAs, including those caused by MRSA and *C. difficile*, is often based on misperceptions about the risks of infection and the precautions to prevent transmission. Nursing staff can do a great deal to allay fears by communicating effectively, without breaching confidentiality. For example, nurses can:

- display notices which describe the precautions needed if a patient is in isolation
 - talk to patients about how they can help themselves and support staff in preventing infection
 - include multi-disciplinary support staff in team meetings during outbreaks
 - ensure all staff understand the actions they need to take, for example, following discharge or involvement of other multi-disciplinary staff
 - inform general practitioners on discharge or transfer if their patient has an infection or an infectious condition and ensure all documentation is completed.
- make available information for patients, visitors and staff and answer any questions that may arise from this

Loveday HP, Wilson JA, Pratt RJ, Golsorkhi M, Tingle A, Bak A, Browne J, Prieto J and Wilcox M (2014) epic3: National Evidence-Based Guidelines for Preventing Healthcare-associated Infections in NHS Hospitals in England, *Journal of Hospital Infection*, 86S1, S1–S70.

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BAPEN

www.bapen.org.uk

BAPEN MUST tool (malnutrition universal screening tool)

www.bapen.org.uk

Care Quality Commission

www.cqc.org.uk

Department of Health: Northern Ireland

www.dhsspsni.gov.uk

Health and Safety Executive – dermatitis in health and social care.

www.hse.gov.uk/healthservices/dermatitis.htm

Health Inspectorate Wales

www.hiw.org.uk

NHS Quality Improvement Scotland

www.healthcareimprovementscotland.org

Public Health England

www.gov.uk/government/organisations/public-health-england

RCN Infection Prevention and Control

www.rcn.org.uk/ipc

RCN Safety Representatives

Information on the role of an RCN safety representative can be found on the RCN website at www.rcn.org.uk/get-help

Review on Antimicrobial Resistance

<https://amr-review.org>

World Health Organization: Save Lives: Clean your Hands Campaign

www.who.int/gpsc/5may/en

