



*Infection Control
Guidance for Care Homes*

June 2006

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*Infection Control
Guidance for Care Homes*

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Part 1

Organisation and management

Introduction

The aim of this document is to ensure that all reasonable steps are taken to protect residents and staff from acquiring infections in care homes. It provides information and guidance on requirements and recommendations to proprietors and people in charge of homes, and to the Commission for Social Care Inspection (CSCI) on the prevention and control of infection. This document updates *Guidelines on the Control of Infection in Nursing and Residential Homes* (Department of Health, 1996) and will be updated in light of the amendments to the Private and Voluntary Health Care (England) Regulations (2001).

Many infectious diseases have the capacity to spread within care establishments, where large numbers of people, many of whom may be susceptible to infection, share eating and living accommodation. Infection is a major cause of illness among care home residents and may result in avoidable admissions to hospital. The use of guidance on the prevention and control of infection can minimise the spread of infection in homes and is cost-effective.

Healthcare-associated infections may be serious, and in some cases life threatening. Many of these infections can worsen underlying medical conditions and adversely affect recovery. Some healthcare-associated infections are resistant to antibiotics and the high media profile they often receive can be alarming to residents, their relatives and care givers. It is important that clear information on the standards of infection prevention and control in care homes is available, not only so that these people can make informed choices but also because it promotes confidence in the care being provided. Families and carers will want to be assured that the care their relatives and dependants are receiving is being provided in a clean and safe environment.

The new Code of Practice

It is anticipated that the Code of Practice for the Prevention and Control of Health Care Associated Infections (HCAI) for the Private and Voluntary Health Care Sector and Care Homes will come into force during 2007. This guidance will be reviewed following amendments to the Private and Voluntary Health Care (England) Regulations (2001).

The NHS Code of Practice on HCAI, which will also come into effect in April 2007, will state that when commissioning services, NHS bodies should satisfy themselves that contractors have appropriate systems in place to keep patients, staff and visitors safe from HCAI so far as reasonably practicable.

Guidance on the prevention and control of infection

The National Institute for Health and Clinical Excellence (NICE) published guidelines on the prevention and control of infection in primary and community care in June 2003.* These guidelines were based on a systematic review of the scientific literature and supplement the guidance laid out in this document. The guidelines make recommendations on the standard principles for preventing HCAI and on measures for preventing infections associated with the use of long-term urinary catheters, enteral feeding systems and central venous catheters. Information for patients and carers is included in relation to these areas. There are also technical details on the criteria for the audit of preventing and controlling HCAI.

Care home – definition

The Care Standards Act 2000 section 3 contains the following definition. “An establishment is a care home if it provides accommodation together with nursing or personal care for any of the following persons:

- persons who are or have been ill
- persons who have or have had a mental disorder
- persons who are disabled or infirm
- persons who are or have been dependent on alcohol or drugs.”

Roles and responsibilities

The **care home** should produce a written policy that details the roles and responsibilities of the staff during an outbreak of communicable disease or episode of infection. The plan should include details of the roles and responsibilities of senior personnel as follows.

The **owner** of a home is responsible under health and safety legislation for maintaining an environment which is safe for residents, visitors and staff alike. Suitable arrangements and procedures for control of infection would form part of the health and safety requirements.

The **registered manager** should have 24-hour access to advice on infection prevention and control from a suitably qualified and competent individual. It is good practice for the registered manager to produce an annual report on the systems in place for the prevention and control of infection and how these are monitored. The report should contain information on incidents and outbreaks of infection, risk assessment, training and education of staff, and infection control audit and the actions that have been taken to rectify any problems.

The **person in charge** should ensure that appropriate infection control policies and procedures exist, are readily available, are understood by all members of staff and are used within the home.

* These guidelines can be obtained free of charge from the NICE website (www.nice.org.uk) or from the NHS Response Line (phone 08701 555 455 and quote reference number N0218). A version for patients, their carers and the public, called *Prevention of health-care associated infection in primary and community care*, is also available from the website and the NHS Response Line (quote reference number N0219).

The **consultant in communicable disease control** (CCDC) is employed by the Health Protection Agency (HPA) and has responsibility for the control of infectious disease within the community. The CCDC also advises, and is usually appointed as the Proper Officer of, the local authority, which has statutory duties and powers relating to communicable disease control. Though CCDCs will wish to ensure that appropriate infection control arrangements are in place in local homes, they are not responsible for providing an infection control service directly to homes. Responsibility for health protection is assigned within a Memorandum of Understanding between organisations within the health economy.

The **health protection nurse** (HPN) is employed by the local Health Protection Unit (HPU) and is appointed to provide advice to the community in collaboration with the CCDC.

The **community infection control nurse** (CICN) is usually employed by the primary care trust and provides advice, education, training, policy development and audit functions to the community.

The **general practitioner** (GP) is responsible for the diagnosis and treatment of infectious diseases as they occur in their patients. The GP also has an ethical responsibility to consider the implications of such a diagnosis for other people. Liaison with the CCDC is important in infectious disease control; the GP is responsible for notifying the CCDC of certain infectious diseases (see page 41 and Appendix 1).

Environmental health practitioners (EHPs) work for local authorities as environmental health officers (EHOs) who advise on the management of food safety, including on hygiene and kitchen design, pest control and waste disposal. They are also responsible for the control of pollution and other nuisances. Their duties include the inspection of food premises as well as enforcing the provisions of the UK laws and the new EU food hygiene legislation applied throughout the UK from January 2006. EHOs also investigate complaints about food and collaborate with the CCDC in the investigation of outbreaks, particularly of food- or water-borne illness.

The **Commission for Social Care Inspection** is the single, independent body responsible for the inspection, regulation and review of all social care services in England.

CSCI will work alongside the Healthcare Commission (HCC) to strengthen the system for inspecting health and social care, ensuring clearer public accountability.

The main duties of CSCI are to:

- carry out local inspections of all social care organisations – public, private, and voluntary – against national standards and publish reports
- register services that meet national minimum standards
- carry out inspections of local social service authorities
- publish an annual report to parliament on national progress on social care and an analysis of where resources have been spent
- validate all published performance assessment statistics on social care
- publish the star ratings for social services authorities.

Monitoring and reporting of infectious diseases

Care homes should meet the requirements laid down in the Care Standards Act 2000. In addition, Regulation 37 of the Care Homes Regulations 2001 states that:

“The registered person shall give notice to the Commission without delay of the occurrence of the outbreak of any infectious disease which in the opinion of any registered medical practitioner attending persons in the care home is sufficiently serious to be so notified.”

All staff in a home should be aware of their role in infection control. They should also be aware of the local arrangements for accessing advice on the prevention and control of infection. In addition, the person in charge of each home should identify a senior nurse or other responsible person who will take a particular interest in infection control and who will act as the control of infection liaison person. It is recommended that this person should undertake specific training in infection control to enable them to recognise problems as they occur and seek specialist advice from the CICN/HPN or CCDC. Advice on local availability of training can be sought from the CCDC or CICN/HPN.

Any procedures such as isolation and advice on infection control must comply with the individual's need for physical and mental well-being and must comply with relevant health and safety legislation (see Bibliography on page 50).

Notifiable diseases and infections that could be a potential risk to others should be recorded and reported to the local HPU in accordance with local arrangements.

The manager or official in charge may contact the HPU by telephone (Appendix 1 provides details of the initial information the HPU will require from the home). Notifiable diseases are listed in Appendix 2.

If the disease is primarily food-borne, the EHO may lead the investigation with the support of the HPU.

Communicable diseases

All care home staff should be aware of the National Minimum Standards, which sets out the standards that apply to all care homes providing accommodation and nursing or personal care for older people. Those responsible for the day-to-day organisation of the home must have the knowledge and skills to manage and ensure good hygiene standards as laid out in the guidance (Department of Health, 2003).

Surveillance of infections and communicable diseases

Surveillance of infection is important in identifying outbreaks of infection or changes in disease occurrence or antimicrobial resistance. Prompt diagnosis of a clinical illness helps provide early identification of outbreaks. The GP for the resident will normally make the diagnosis of any infectious illness. If more than one individual develops similar symptoms, a common source of infection may be present; this needs to be investigated and managed to prevent further spread.

The registered manager has the responsibility to report a suspected outbreak to the local HPU as soon as this is recognised.

Symptoms in two or more patients which may indicate a possible outbreak are:

- cough and/or fever (e.g. influenza)
- diarrhoea and/or vomiting (e.g. *Clostridium difficile*/norovirus/food poisoning)
- itchy skin lesion/rash (e.g. scabies).

The role of the HPU is to monitor and investigate outbreaks of infection and advise on the control and prevention of outbreaks in the home. The HPU will decide if an outbreak is ongoing in the home and will initiate and co-ordinate any necessary action to prevent further spread. They will advise the person in charge of any immediate action necessary for control. This may require identifying those at higher risk and separating those who have symptoms from those who do not. An initial surveillance form may need to be completed (Appendix 1) and further information may be requested by the HPU. If it is primarily a food-borne infection, the local authority environmental health department will work closely with the HPU.

The investigation will seek to:

- establish if a problem exists
- establish the nature and extent of the outbreak
- identify those who are ill
- identify contacts of cases and ensure patients receive appropriate care
- establish control measures, and
- decide if special arrangements for investigation and management are needed.

Notifiable diseases

Some infectious diseases are statutorily notifiable by the clinician making the diagnosis. These are listed in Appendix 2.

Isolation of residents with an infection

A number of infectious diseases can spread readily to other residents and cause outbreaks. The commonest outbreaks are caused by viral respiratory infections and gastroenteritis. The causative organisms can be spread by airborne droplets or alternatively by contaminated food and water. Isolation of infected residents is essential to prevent further cases. Single rooms should be available for this purpose and managers of homes will need to consider how best to achieve this. Single rooms must contain hand hygiene facilities and a wall-mounted antibacterial hand-cleaning gel dispenser. Ideally, these rooms should have full en suite facilities including a toilet. Residents with infectious diarrhoea must have sole use of a toilet, which must be thoroughly cleaned between each use (see page 16). Advice should be sought by the person in charge of the home from the local CIGN or HPU.

Resources

An outbreak of infection is likely to have resource implications for a home. These may include a need for extra staff and increased use of disposable items or laundry necessary for the care of infected individuals and the control of further spread. Homes may wish to consider insuring against these costs.

Training and education

Some of the caring activities involved in health and social care carry the risk of infection for both residents and their carers, therefore it is important that care home staff are trained in the prevention and control of infection, to promote evidence-based best practice. Training on the prevention and control of infection should be in induction programmes for new staff, and in ongoing training programmes. Training records should be kept. It is good practice to include the prevention and control of infection in job descriptions, personal development plans and appraisal for all staff groups.

It is important that all members of staff, from domestic through to managing director, have a clear understanding of their responsibilities to prevent the spread of infection, and are familiar with any infection prevention and control policies and procedures that are in place.

In most settings, it has been found that regular audit of practice and educational and constructive feedback to employees has a beneficial role to play in developing the working practice of employees.

The vocational training programmes in place are co-ordinated by Skills for Care, a workforce development body for adult social care in England. Skills for Care is part of the sector skills council, Skills for Care and Development, an alliance that also includes the Children's Workforce Development Council, the Care Council for Wales, the Scottish Social Services Council and the Northern Ireland Social Care Council.

This sector skills council is dedicated to developing the social care workforce through consultation with key stakeholders, including employers, managers of care services, social care staff including social workers, service users and training providers.

Skills for Care's remit includes workforce development strategies for all the workforces in adult social care in England, not just for care workers. Skills for Care have developed national standards and a qualification framework for our sector: but it is not responsible for the inspection of standards of care provision in social care settings. This is the responsibility of the Commission for Social Care Inspection. Neither is Skills for Care responsible for the registering or regulation of care workers. This is the responsibility of the General Social Care Council (GSCC). For more details see www.gsccl.org.uk

Skills for Care are creating a national workforce development strategy for social care and more information is available at www.skillsforcare.org.uk

Occupational health

Each home should have appropriate policies for the protection of staff through immunisation, training and compliance with health and safety legislation. Such policies should apply to all agency and locum staff and to those on short-term contracts.

It is desirable that all staff have access to occupational health advice. Each new member of staff should complete a pre-employment health questionnaire and give information about previous illness and immunisation against relevant infections (or refusal to accept immunisation).

Policies need to be in place that set out action to be taken if a staff member is injured by any needle or other sharp object which may be contaminated by body fluids.

Appropriate policies should be available to ensure that residents are protected from staff with communicable disease. Such policies should clearly set out the responsibilities of staff members to report episodes of illness to their manager – this is particularly important after travel abroad. When necessary, staff may need to be excluded from work until they have recovered or the results of specimens are available; as homes vary in terms of the vulnerability of their residents to infection, policies may differ between homes. Advice should be sought from the local CCDC, but Appendix 5 gives general guidance.

Risk assessment

Control of substances hazardous to health

The principal requirement for employers under The Management of Health and Safety at Work Regulations (1999) is to undertake an assessment of the risks posed by their work activities to themselves, staff and others. The 2002 Control of Substances Hazardous to Health Regulations (COSHH) also requires an assessment of the risk from hazardous substances. COSHH covers hazardous substances including biological agents (pathogenic micro-organisms) and requires employers to assess the risks of exposure to biological agents and either prevent exposure (where reasonably practicable) or control it adequately. As a guiding principle, the greater the risk posed from a specific hazard, in terms of the severity of an outcome if this risk is realised or the number of individuals potentially affected by the hazard, then the greater the level of intervention required to control the risk. This intervention may be in terms of financial commitment, for example to provide appropriate equipment to deal with blood spills, or other resources – such as ensuring adequate time is devoted to instruction and training and subsequent supervision of staff.

Exposure that does not arise from the work activity itself, such as catching an upper respiratory tract infection (or ‘common cold’) from a colleague, need not be included.

In order to comply with the requirements of COSHH in relation to infection control within a care setting, the steps described below are recommended. When deciding which control measures are required, the ‘hierarchy of control’ should be followed. Whenever possible a hazard should be eliminated. If this is not possible, then a number of control measures limiting exposure need to be employed.

Steps to fulfil COSHH biological hazard assessment

1. Identify any biological hazards present or potentially present in the workplace as a result of a work activity, e.g. blood-borne viruses, gastrointestinal viruses.
2. Assess any risks to health arising from hazardous substances used in or created by workplace activities, i.e. who may be harmed and how.
3. Decide what precautions are needed, e.g. employment of standard precautions, scrupulous hand hygiene.
4. Prevent or adequately control exposure, i.e. are current control methods adequate? how may they be improved? Apply appropriate control procedures.
5. Ensure that control measures are used and maintained; this may require the implementation of a system to check whether staff follow procedures.
6. Ensure that employees are properly informed, trained and supervised. It is advisable for each employee to have a written record of the training that they have received.

It is important that the assessment is reviewed and revised if there is a significant change to the work activity resulting in either the addition or removal of hazardous substances from the workplace. A COSHH assessment is also required when disinfectants are used (see page 19).

Health and safety in care homes (HSG220) (Health and Safety Executive, 2001) provides an overview for care home owners and managers to enable them to meet their legal obligations in this arena and gives full details of appropriate control measures for infectious and other biological hazards.

Part 2

How are infections spread?

The chain of infection

Micro-organisms

There are many types of micro-organisms, some of which cause illness and some of which do not. Many micro-organisms live in or on some parts of the body (skin, mouth, intestinal tract) and are known as the body's normal flora. Some of these may cause illness if they find their way into other areas of the body. An example of this is where micro-organisms normally found in the bowel enter the bladder and may then have the potential to cause infection.

Normal skin flora is known as 'resident' and is there all the time. It rarely causes infection apart from possible introduction during invasive procedures in hospitals, for example during surgery or insertion of intravenous lines. Resident skin flora lives naturally on the skin and is difficult to remove by normal hand hygiene techniques, although the numbers of micro-organisms can be reduced by this.

Many other micro-organisms are acquired or deposited on the skin from other staff or residents or from the inanimate environment and are known as 'transient'. These do not live permanently on the skin and are readily removed or destroyed by thorough and frequent hand hygiene.

The reservoirs

The reservoirs of micro-organisms may be people, the environment or equipment. The human body is the biggest and best reservoir for potentially pathogenic micro-organisms and the most common source of infection. A person with salmonella, tuberculosis or hepatitis B acts as a reservoir of infection to others because the micro-organisms are present in some of the body fluids and can be passed on to others.

Contaminated food may also act as a reservoir of infection. A common example of this is the presence of *Salmonella* spp. If this food is not thoroughly cooked, individuals who consume it can become infected.

The environment can be contaminated by micro-organisms shed by people with an infection. This can then become a reservoir for spread to others.

Poorly maintained or incorrectly decontaminated equipment can also act as a reservoir of micro-organisms. For example, inadequately maintained and shared commodes can be contaminated with micro-organisms that cause diarrhoea.

Point of entry

Every micro-organism needs to have an entry point into the human body; different micro-organisms have different ways of achieving this. For example salmonella bacteria need to enter the body through the mouth. Other micro-organisms, such as those that cause tuberculosis, enter our bodies through the nose and mouth and then pass into the lungs. Hepatitis B virus enters via the bloodstream and is then transported into the liver. Organisms capable of causing urinary tract infections may enter during poor catheter care.

Point of exit

As well as needing an entry point, micro-organisms also need an exit point. Salmonella bacteria are excreted through faeces. A tuberculosis bacterium uses the same entry and exit point; that is, the lungs, mouth and nose.

Method of spread or mode of transmission

All micro-organisms need a mode of transmission. This varies with different types of organisms. Hands play a big part in spreading infection. Micro-organisms may be present in body excretions and secretions. If hands come into contact with these the micro-organisms may be carried from one person to another unless the hands are properly decontaminated. Some micro-organisms may be spread in the air. The viruses that are responsible for colds and influenza are found in saliva and sputum. Coughing or sneezing near another person may pass on these viruses in the droplets or aerosol produced. In some circumstances, micro-organisms are able to spread from one part of the body to another, or from an outside source to the body.

Modes of transmission include:

- aerosol
- droplet
- faecal–oral
- direct contact (person to person)
- indirect contact (food, water, fomites (inanimate objects), the environment)
- blood and body fluid
- insects and parasites.

Susceptible host

For infection to occur once micro-organisms have reached their ‘target’ the person must be at risk of infection. Infection is caused by organisms that evade the host’s immunological defence mechanisms, although susceptibility to infection may vary from person to person.

Risk factors for infection

Factors that affect a person's susceptibility to infection include:

- age (the very young and very old are more susceptible)
- immune status
- physical well-being
- psychological well-being
- hygiene
- underlying or chronic diseases or medical conditions (e.g. diabetes, chronic chest and heart problems or cancer)
- other existing infections
- medical interventions (e.g. indwelling medical device)
- medical therapies (e.g. cancer chemotherapy).

Principles of asepsis

Asepsis is defined as the absence of pathogenic organisms. Aseptic technique is used to describe clinical procedures that have been developed to prevent contamination of wounds and other susceptible body sites.

The principles of asepsis/aseptic technique are:

- keeping the exposure of a susceptible site to a minimum
- ensuring appropriate hand decontamination prior to the procedure
- using sterile or non-sterile gloves depending on the nature of the susceptible site and the nature of the procedure being undertaken
- protecting uniform/clothing with a disposable plastic apron
- ensuring all fluids and materials used are sterile
- checking sterile packs for evidence of damage or moisture penetration
- ensuring contaminated/non-sterile items are not placed in the sterile field
- not re-using single-use items
- reducing activity in the immediate vicinity of the area in which the procedure is to be performed.

The principles of aseptic 'no-touch technique' play a vital role in preventing the transmission of infection in any environment. It is the responsibility of each staff member to understand the meaning of these principles and to incorporate them into their everyday practice.

Part 3

Practical procedures

Hand hygiene

Also refer to *Prevention of health-care associated infection in primary and community care* (NICE, 2003).

Hand hygiene is widely acknowledged to be the single most important activity for reducing the spread of infection. Yet evidence suggests that many healthcare workers do not decontaminate their hands when they need to nor use the correct technique. Hand hygiene must be performed immediately before each and every episode of direct patient contact **and** after any activity or contact that could potentially result in hands becoming contaminated.

Staff should be trained in the use of liquid soap and water, and alcohol hand rub for hand decontamination, and must understand how and when this should be done. Alcohol hand rubs should be used at the point of care. Alcohol hand rubs are not suitable for use on hands that are contaminated with organic matter (e.g. faeces, secretions) or during outbreaks of diarrhoeal illness amongst residents caused by *Clostridium difficile* – when washing hands with soap and water is necessary.

Hand hygiene facilities comprising a hand wash basin, supplied with hot and cold water and disposable paper towels, must be available and easily accessible and not used for any other purpose other than hand hygiene. A lack of or inappropriate facilities must be brought to the attention of the manager or owner of the home who has a duty of care to ensure that there are adequate materials and facilities to prevent cross infection in the home.

Personal protective equipment

Also refer to *Prevention of health-care associated infection in primary and community care* (NICE, 2003).

Selection of personal protective equipment (PPE) must be based on an assessment of the risk of transmission of micro-organisms to the resident, and the risk of contamination of a healthcare worker's clothing and skin by the resident's blood, other body fluids, secretions or excretions.

Disposable gloves and aprons are used to protect both the healthcare worker and the resident from the risks of cross infection. In certain circumstances it may be necessary to wear other PPE, such as a mask and/or goggles/visor. These should be worn when recommended by infection control personnel.

Disposable gloves

As with all items of PPE, the need for gloves and the selection of appropriate materials must be subject to careful assessment of the task to be carried out and its related risks to the resident and the healthcare worker.

The assessment should include:

- who is at risk and whether sterile or non-sterile gloves are required
- what the risk is, i.e. the potential for exposure to blood, body fluids, secretions or excretions
- where the risk is, i.e. contact with non-intact skin or mucous membranes during general care and any invasive procedures.

Gloves are required when contact with blood or body fluids or non-intact skin is anticipated. They should be single use and well-fitting. Sensitivity to natural rubber latex in patients, carers and healthcare personnel must be documented, and alternatives to natural rubber latex gloves must be available, e.g. nitrile gloves.

Gloves are **not** a substitute for hand hygiene. Gloves must be discarded after each care activity for which they were worn in order to prevent the transmission of micro-organisms to other sites in that individual or to other residents. Washing gloves rather than changing them is not safe and therefore not recommended. Hands should always be decontaminated following removal of gloves.

Disposable plastic aprons

These should be worn whenever there is a risk of contaminating clothing with blood or other body fluids, or when a resident has a known infection. A disposable plastic apron should also be worn during direct patient care, bed-making, or when decontaminating equipment.

The apron should be worn as a single-use item, for one procedure or episode of patient care, and then discarded as clinical waste as soon as the intended task is completed. Hands should be washed following this activity.

Aprons must be stored so that they do not accumulate dust that can act as a reservoir for infection.

Masks, visors and eye protection

These should be worn when a procedure is likely to cause splashes with blood or body fluids into the eyes, face or mouth or when it is recommended by infection control personnel when a communicable disease is suspected.

It is rare that such protection is necessary in a care home. However, such protective equipment should be stored in the home in case of an emergency.

Safe handling and disposal of sharps

Also refer to *Prevention of health-care associated infection in primary and community care* (NICE, 2003).

Staff should be trained in the safe handling and disposal of sharps. Venepuncture and injections should only be carried out by staff who are trained and competent in these procedures.

Management of blood exposure incidents and post-exposure prophylaxis

It is important that incidents in which staff are exposed to blood and certain body fluids are managed and followed up correctly, with the provision of post-exposure prophylaxis if necessary, as there is a risk of blood-borne virus transmission (Human Immunodeficiency Virus (HIV), hepatitis B and hepatitis C*). See Appendix 3 – a flowchart for management of an injury or splash involving blood or body fluids.

The risk to care workers of hepatitis B, hepatitis C and HIV infection is proportionate to the prevalence of that infection in the population served, the infectious status of the individual source patient, which may or may not be known, and the risk of a significant occupational exposure occurring during the procedures undertaken. In the healthcare setting, occupational blood-borne virus transmission most commonly occurs after percutaneous (i.e. through the skin) exposure to a patient's blood by 'sharps' or 'needlestick' injury.

The risk of transmission to a healthcare worker from an infected patient following such an injury has been shown to be:

- around one in three when a source patient is infected with hepatitis B and is 'e' antigen positive (a marker of high infectivity)
- around one in 30 when the patient is infected with hepatitis C, and
- around one in 300 when the patient is infected with HIV.

Staff who may have direct contact with patients' blood or blood-stained body fluids or with patients' body tissues should be immunised against hepatitis B (see section on immunisation, page 32). There are currently no vaccines to protect against hepatitis C or HIV.

It is recommended that employers draw up a policy on how such incidents should be handled in conjunction with their local CCDC or CIGN/HPN. Unless an employer has access to an occupational health service, it is likely that the assessment and follow-up of such incidents will need to be undertaken by their local accident and emergency department. In drawing up local policy, employers should clarify and confirm who will be able to provide such a service.

* Post-exposure prophylaxis is available for hepatitis B (vaccine and/or hepatitis B immunoglobulin) and HIV (antiretroviral drugs). At present there is no effective post-exposure prophylaxis against hepatitis C infection. However, there is evidence that early treatment of acute hepatitis C infection may prevent chronic hepatitis C infection. This underlines the need for careful management and follow-up of occupational exposures and early referral for specialist occupational medicine and gastroenterology/hepatology/infectious diseases assessment if an infection has been transmitted.

Managing spillages of blood or other body fluids

Blood and body fluids may contain a high concentration of micro-organisms, which must be made safe as soon as possible after the spillage has occurred. Clearing blood or body fluid spillages may expose the healthcare worker to pathogenic organisms and every care must be taken to ensure the member of staff is protected by the appropriate use of protective clothing.

The home should have a spillage kit available for use in clearing spills, and staff should be aware of the contents of the kit and trained in its use and in the proper management of biohazard and body fluid spillages. If the incident involves a spillage of blood, a chlorine-based disinfectant, such as sodium dichloroisocyanurate (NaDCC), should be used. Chlorine-releasing agents such as this are corrosive to metal and will bleach soft furnishings.

The spillage kit should contain a disposable scoop for clearing any spillages of needles or any other sharp items that may have spilled out of their container. Gloved hands should not be used to pick up used needles.

Do NOT discard sharp items into yellow clinical waste bags and never throw biohazardous waste into the general domestic waste stream.

Environmental cleaning

General cleaning

Care homes should be cleaned and kept clean to the highest possible standards simply because care home residents and the public expect, and have a right to, the highest standards of cleanliness. Care providers should be aware that standards of cleanliness are often seen as an outward and visible sign of the overall quality of care provided. Individuals are likely to have significant concerns about the quality of care available in premises that are not kept clean.

A key component of providing consistently high quality cleaning is the presence of a clear plan setting out all aspects of the cleaning service and defining clearly the roles and responsibilities of all those involved, from managers through care staff to domestics. Where cleaning services are provided by private contractors this plan should also set out management arrangements to ensure the provider delivers against the contract. Contracting out the cleaning service does not mean contracting out responsibility, and managers will need to ensure there are suitable arrangements in place to monitor the standards being achieved and to deal with poor or unsatisfactory performance.

A range of advice and guidance has been provided to the NHS in the area of cleanliness, both in terms of providing cleaning services and in monitoring the standards being achieved. While this has in general been designed with NHS hospitals in mind, most of it can equally well be applied to care homes with little or no adjustment. The following source documents will be of particular interest.

National specifications for cleanliness

These specifications, contained within the document *Guidance on contracting for cleaning*, set out in clear and simple terms the standard expected across 49 'elements', which taken together

cover all the important aspects of cleanliness encountered in keeping premises clean, from equipment to fixtures and fittings. In addition, it provides a simple auditing/monitoring process which allows care providers to check on how they are performing against the standards.

See: http://patientexperience.nhsestates.gov.uk/clean_hospitals/ch_content/contracting_for_cleaning/introduction.asp

Healthcare facilities cleaning manual

This is a detailed, easy to follow, step-by-step manual demonstrating the correct way to clean and detailing the cleaning materials and equipment (and maintenance of equipment) needed to help achieve the highest possible standards of cleanliness. It includes sections covering the prevention and control of infection, health and safety, and detailed methods for general cleaning (furniture, fixtures and fittings and walls), floors, kitchens, washrooms and sanitary areas. There is also advice covering specialist areas (including cleaning of isolation rooms) and patient equipment.

See: http://patientexperience.nhsestates.gov.uk/clean_hospitals/ch_content/cleaning_manual/background.asp

Minimum cleaning frequencies

Having clearly defined schedules of cleaning tasks is crucial in ensuring that they are carried out at the appropriate frequency. They also help to determine precisely what cleaning resource is needed. If cleaning frequencies are clearly displayed, this can help reassure residents and their family/visitors that cleanliness is seen as an important issue. An example of a minimum cleaning frequency schedule is contained within *Guidance on contracting for cleaning*.

See: http://patientexperience.nhsestates.gov.uk/clean_hospitals/ch_content/contracting_for_cleaning/introduction.asp

Colour coding

Ensuring the risks from cross contamination through inappropriate cleaning practices are kept to the absolute minimum will be aided by the presence of a clear system for the coding of cleaning equipment. A cleaning industry standard designed by the British Institute of Cleaning Science exists and is recommended to all care homes (see Appendix 6).

Environmental assessment

Since 2000, all NHS hospitals have been undertaking annual environmental assessments. These look at the whole range of non-clinical factors involved in the provision of care, including the physical condition of building, fixtures and fittings as well as cleanliness issues. These assessments can be helpful in identifying where additional resources may be required and in allowing care providers to develop plans to ensure that shortfalls are addressed in a practical and prioritised way. It is also considered good practice to include an independent representative during the assessment process, either from among the residents or from elsewhere within the local community, in order that the results of such assessments can be seen to be fair and reliable.

Full details on these can be obtained by visiting www.cleanhospitals.com

Decontamination

Within care settings, decontamination of patient equipment, medical devices and the environment occurs frequently. It is extremely unlikely that sterilization of reusable medical devices occurs. Indeed, if this level of decontamination is required it should be sought from an accredited Sterile Services Department, or single-use disposable instruments should be used.

Decontamination processes

Decontamination can be achieved by a number of methods, which fall into the following three categories:

- **Cleaning** physically removes contamination but does not necessarily destroy micro-organisms. It removes micro-organisms and the organic matter on which they thrive. Cleaning is a necessary prerequisite to effective disinfection or sterilization. This will be the most common choice of decontamination method within the care home setting.
- **Disinfection** reduces the number of viable micro-organisms but may not necessarily inactivate some microbial agents, such as certain viruses and bacterial spores.
- **Sterilization** renders an object free from viable micro-organisms including viruses and bacterial spores.

The choice of decontamination method depends on the risk of infection to the patient coming into contact with equipment or medical devices. Such items can be categorised into three risk groups:

- **High risk** items are those used to penetrate skin or mucous membrane; or enter the vascular system or sterile spaces. They need to be sterilized if reusable, but single-use items are preferred.
- **Intermediate risk** items are those which come into contact with intact mucous membranes or may be contaminated with particularly virulent or readily transmittable organisms. Such items require cleaning followed by disinfection or sterilization.
- **Low risk** items are those which come into contact with intact skin or do not contact the patient. They require cleaning.

See Table 1 on page 18 for suggested decontamination methods.

Single-use instruments

As an alternative to sterilizing reusable medical instruments, the use of single-use disposable equipment is becoming increasingly popular. Although many items, such as syringes and needles, have been available for many years, the cost, quality and availability of other equipment and instruments have resulted in a significant increase in single-use devices. **Any device designated as single use must never be reused under any circumstances.**

Table 1: Suggested decontamination methods for commonly used equipment

If items are contaminated with blood or other body fluids, clean them thoroughly to remove physical soil and then wipe with a freshly prepared solution of a chlorine-releasing agent with a concentration of 1000 p.p.m. available chlorine.

Bedding	See section on laundering (page 28). Heat disinfection: 65°C for 10 minutes or 71°C for 3 minutes. For heat-sensitive fabrics use a low temperature at 40°C and tumble dry at a minimum of 60°C.
Bedpans and urinals	Dispose of single-use items. If reusable, heat disinfection in bedpan washer–disinfector (e.g. 80°C for 1 minute). Store dry.
Bowls (washing)	Each resident should have their own washing bowl. Clean with detergent and water after use. Rinse and dry. Store separately and inverted to avoid contamination.
Combs	Each resident should have their own comb.
Commodes	Wash with detergent, rinse and dry.
Curtains	Should be laundered at least six monthly.
Drip stands	Clean after each use.
Flower vases	Change water regularly. Wash vase in hot water and detergent after use and store dry.
Hoist (patient)	Surface clean the hoist frame. Examine material and clips for wear or damage before each use. Slings should be laundered in hottest wash cycle allowable and not shared between residents,
Glucose-monitoring equipment	Clean after each patient use.
Mattresses and covers	Clean cover regularly as part of a routine and following patient use. Rinse thoroughly and dry. Mattresses should be enclosed in a waterproof cover and routinely inspected for damage. Discard if fluids have penetrated into the mattress fabric.
Nebulisers	Clean all parts thoroughly with detergent and hot water between single patient’s use. Ensure all parts are thoroughly dried. Refill with sterile water only. Do not share between residents. Dispose of on resident’s discharge.

Scissors	Clean following each use.
Vaginal speculae	Dispose of single-use.
Splints and walking frames	Wash and clean with detergent.
Stethoscope	Clean following each use.
Thermometers (electronic, oral and rectal)	Use a single-use sleeve each time.
Trolley (dressing, patient), tables	Clean with detergent and hot water and dry.
Wheelchairs	Clean, rinse and dry.

Manufacturers' responsibilities

Manufacturers of reusable medical devices are required by the Medical Devices Directive (93/42/EEC) to supply clear written decontamination instructions, which should include appropriate cleaning, disinfection or sterilization methods.

Certain fabrics or materials can be difficult to decontaminate. It is therefore advisable, prior to purchasing equipment, to assess carefully that the recommended decontamination methods are practical, safe and reliable.

General principles for cleaning

An automated or mechanical process must always be used in preference to a manual process. However, in many instances this is not possible. When using automated methods, for example washing machines, this is normally followed by disinfection, which is achieved by high temperatures (thermal disinfection) within the wash cycle as opposed to the use of chemicals such as bleach.

General principles for chemical disinfection

- Chemical agents should only be used where:
 - sterilization is not required
 - it is impossible to disinfect using heat
 - cleaning alone is insufficient.
- Disinfectants should not be used routinely as cleaning agents or deodorants.
- Disinfectants must not be used for the storage of equipment (e.g. mops).
- Organic debris (e.g. faeces, secretions) may inactivate some disinfectants. Items should be clean prior to chemical disinfection.
- Disinfectants must be used at the recommended dilution.

- Disinfectants must be stored and discarded in accordance with the manufacturers' instructions.
- Disinfectants must not be used unless agreed by the occupational health and safety department and the infection control team.
- COSHH regulations must be adhered to.
- A timing device with an audible signal must be used to ensure immersion for the correct time period.

Waste

Due to legislative changes that include the Hazardous Waste (England and Wales) Regulations 2005 and the Lists of Waste Regulations 2005 (which introduce the European Waste Catalogue Codes), there have been substantial changes in the way that waste is defined. Clinical waste is still defined in the Controlled Waste Regulations 1992; however, as a consequence of the Hazardous Waste Regulations 2005, any waste that is deemed to be infectious or hazardous is considered to be hazardous waste and must be consigned for disposal at suitably licensed facilities. The Hazardous Waste Regulations 2005 define infectious waste as “substances containing viable micro-organisms or their toxins which are known or reliably believed to cause infection in man or other living organisms”.

New guidance on the disposal of waste produced by healthcare providers is in development. The following information about waste disposal is an interim guide. Guidance on local policy should be sought from the CCDC, HPU, CIGN or EHO.

This following information aims to ensure the safe and efficient collection, handling and disposal of all waste, and in particular clinical waste/hazardous waste.

Responsibilities

The responsibility for the day-to-day management of clinical/hazardous waste rests with the person in charge. All those working in areas where clinical/hazardous and general waste arise must adopt safe working practices, since failure to do so may result in the establishment being in breach of its statutory obligations as regulated by the Environment Agency under the Environmental Protection Act, section 34 Duty of Care requirements.

The person in charge has a duty to ensure that all clinical/hazardous waste is correctly bagged, sealed, tagged and stored before collection for incineration/alternative treatment as appropriate. Collection of waste should be arranged through a licensed disposal contractor – using licensed carriers to transport the waste to licensed treatment/disposal plants only.

Staff training

Management has the responsibility for ensuring that all staff and volunteers are trained by a competent waste manager and that records are maintained.

Those responsible for staff training must ensure that staff use appropriate protective clothing and equipment.

Segregation of waste

All waste should be secured in an approved way and identified with a coded tie or label.

Areas where clinical/hazardous waste is produced should have foot-operated bag holders.

There should be a wall chart showing the correct bags to be used according to the type of waste:

Yellow bag

All waste which **must** be incinerated (i.e. cytotoxic and cytostatic medications, body parts, etc.).

Orange bag

All waste which goes for treatment to an alternative technology plant.

Black bag

Normal household waste, general commercial waste.

Any cardboard box

- a. Marked GLASS AND BREAKAGES ONLY and lined with a heavy duty clear plastic bag for bottles and breakages.
- b. Marked AEROSOLS ONLY and lined with a clear plastic bag for aerosols, which under The Control of Substances Hazardous to Health Act must be kept and disposed of separately.

Aerosols must not be placed in black or yellow bags.

Sharps container

An appropriately sized, dedicated sharps container made and sealed according to the manufacturer's instructions and conforming to UN3291 and BS7320 standards.

Sharps containers must have a coded tie or label and be disposed of when three-quarters full.

Categories of waste

1. Clinical waste

The following must be disposed of in yellow bags:

- soiled surgical dressings, swabs and all other contaminated waste from treatment areas
- material other than linen from cases of infectious disease
- all human tissues (whether infected or not) and tissues from laboratories, and all related swabs and dressings
- tampons and used sanitary towels; where possible, these should be disposed of separately in dedicated sanibins.

The following should be disposed of in a macerator; if not, they must be disposed of in yellow/orange bags depending on treatment route:

- incontinence pads, including those from non-infected residents
- used disposable bedpan liners, urine containers, incontinence aids and stoma bags, even from non-infected residents. Water authorities are now expecting that healthcare providers seek authorisation before flushing away disposable bedpan liners as they are known to block up pumps and drains.

Managers are responsible for ensuring that there is an effective procedure for dealing with an accidental spillage (see section on managing spillages, page 15). This procedure must include staff training. A named person (head of department/supervisor) and deputy must be designated. There must be proper cleansing of the affected area, and any tools or protective clothing used should be correctly dealt with.

Note: Non-infected waste can go to landfill in tiger bags – yellow bag with black stripe.

2. Sharps

The following must be disposed of in a sharps container: discarded syringes, needles, cartridges, small items of broken glass and any other sharp instruments.

Sharps contaminated with pharmaceutical medication, especially cytotoxic and cytostatic medication, must be disposed of by incineration.

3. Non-clinical waste or domestic waste

Other general waste (food waste, non-contaminated paper and household materials) should be disposed of in black bags.

The Hazardous Waste Regulations 2005 do not allow mixing; this includes mis-segregation of domestic-type waste into the clinical or hazardous waste stream.

Bulk storage of waste

Specific areas (stillages) must be designated. Storage should be in a well-drained area, with impervious hard standing and wash-down facilities. The area should be kept secure from unauthorised persons. Storage areas should not be accessible to scavenging animals.

Clinical/hazardous waste in orange or yellow bags must be kept separate from general waste in black bags to minimise the risk of accidental cross contamination. All accidental spillages in the bulk storage areas must be cleaned up immediately (see page 15). The area should be fully cleansed at least weekly with an appropriate disinfectant; it should not be hosed down as this may cause the formation of aerosols.

Disposal of pharmaceutical products

Unused drugs and other pharmaceutical products should be returned to the pharmacist; they must not be administered to any resident other than the resident for whom they were dispensed.

Food hygiene

Legislation

Owners and catering managers should be aware of legislation relevant to food and other services within a nursing home and must be registered as food businesses by the local authority environmental health department, which will advise on food safety requirements. In enforcing the legislation, EHOs are entitled to inspect catering facilities in homes: the emphasis will be on risk prevention and the provision of advice. Authorities registering homes under the care homes regulations will take note of reports from EHOs.

The Foods Standards Agency

The Food Standards Agency (FSA) promotes the microbiological safety of food throughout the food chain. It is responsible for the strategy for reducing food-borne illness, promoting a hazard analysis-based approach to food safety management and providing guidance for producers, retailers, caterers and the general public. The FSA also deals with microbiological food hazards and outbreaks of food-borne disease.

Guidance on the new food hygiene legislation

New EU food hygiene regulations came into force on 1 January 2006 but, although the legislation has changed, the requirements for caterers remain very much the same. There is a new requirement for food businesses to put in place and maintain an effective food safety management system. The management procedures should be based upon the principles of the Hazard Analysis and Critical Control Point (HACCP) system.

HACCP is a system that identifies food safety hazards and puts controls in place to prevent, as far as possible, harm to consumers. The food safety management systems need to be proportionate to the business activity and must include more rigorous controls where consumers are more vulnerable, as is likely to be the case in care homes.

The FSA has developed a range of tools to assist food businesses in complying with this new requirement and these can be found on the FSA website (www.food.gov.uk). Whatever system is chosen, it is a requirement of the legislation that it is documented and must demonstrate how the business ensures that the food it produces is safe to eat. Further information on the new legislation and its impact on food businesses, including the HACCP-based tools, can be found at www.food.gov.uk/foodindustry/hygiene/

The legislation

The package of legislation:

- modernises, consolidates and simplifies the previous food hygiene legislation
- applies effective and proportionate controls throughout the food chain, from primary production to sale or supply to the final consumer
- focuses controls on what is necessary for public health protection

- confirms that it is the primary responsibility of food business operators to produce food safely.

As EU regulations, the legislation is directly applicable law. The regulations are:

- Regulation (EC) 852/2004 on the hygiene of foodstuffs
- Regulation (EC) 853/2004 laying down specific hygiene rules for food of animal origin
- Regulation (EC) 854/2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption.

A food safety management pack, *Safer food, better business* (SFBB), can be found on the FSA's website at www.food.gov.uk/catering. It was developed to help small catering businesses such as restaurants and cafes comply with the new regulations and implement food safety control systems.

As residents in care homes are a vulnerable group, the FSA is currently working on additional supplementary advice to cover this sector. Until this is ready, managers of homes are advised to speak to their local EHO for advice on the suitability of SFBB for their home.

Detailed guidance on food safety and the provisions of the relevant legislation is beyond the scope of this document. Managers of homes are strongly recommended to visit the FSA website or contact their local EHO for information.

Staff training

All staff engaged in food preparation or handling should be trained, supervised or instructed to a level sufficient to enable them to prepare food safely. Foundation, basic, intermediate and advanced courses in food hygiene may be run by local authority environmental health departments and hygiene consultancy firms. It is recommended that accredited training courses are selected, which meet the requirements of the relevant National Occupational Standards, at a level relevant to the food handler. Such a course should cover the following:

- food hygiene – an introduction
- legislation
- food safety hazards
- temperature control
- food contamination
- personal hygiene
- principles of safe food storage
- equipment for food handling
- cleaning and disinfection
- food premises and equipment, including pest control.

High risk foods

Certain foods will present more of a risk of food-borne illness to residents than others. These foods include meat, fish, eggs and milk and products made from them. If these foods are incorrectly handled, prepared and stored, any bacteria that may be present or have contaminated them may multiply and/or produce toxins to levels which are likely to cause illness. The danger of food-borne illness will be reduced with the proper implementation of a system of identifying and controlling food safety risks and the appropriate training of food-handling staff.

Some examples of foods that need special care are given below.

Raw eggs

Some eggs contain the salmonella bacteria inside or on their shells. Therefore, catering staff must understand how to handle and cook with raw eggs. Vulnerable groups, such as elderly people, are more likely to become seriously ill from food poisoning caused by salmonella. Raw eggs should always be thoroughly cooked. This means avoiding serving eggs with runny yolks. Pasteurised eggs should be used for all uncooked or lightly cooked dishes.

See also *Eggs – what caterers need to know* (FSA, 2002) on: www.food.gov.uk/multimedia/pdfs/eggleaflet.pdf

Pâté, soft-ripened cheeses and cook-chill foods

The source of listeriosis is often unknown, but a variety of foodstuffs has been associated with infections. These include pâté, soft-ripened cheeses and cook-chill foods that are not reheated before consumption. Listeriosis may be a mild illness, but can also cause septicaemia, meningitis and encephalitis or, if a pregnant woman becomes infected, it can harm the developing baby. Elderly people, or those who have impaired immunity due to disease or treatment, are particularly vulnerable to infection. Particular care needs to be taken in developing diets for vulnerable people; they should avoid pâté and soft-ripened cheeses and should only eat cook-chill meals and ready-to-eat chicken if they have been reheated until they are piping hot.

Unpasteurised milk

It is recommended that only milk and milk-based products that have been pasteurised should be offered for consumption by residents. Raw milk products pose a significant risk to vulnerable groups and their use in these circumstances should be avoided.

Undercooked or raw foods

Recent research has shown that meat (including poultry) which is undercooked and still pink after cooking may cause infection. It is, therefore, important that all meat and poultry is thoroughly cooked until the juices run clear before being served. Piping hot meat is safest; the use of food thermometers is recommended.

Cooked food, kept at room temperature and then reheated, is often implicated in outbreaks of food-borne infection. Such practice is unsafe. Cold cooked meats which are sliced some time prior to consumption may also be associated with gastrointestinal infections if mishandled and/or left at room temperature.

Shellfish, especially if eaten raw or undercooked, is recognised as being a high risk food. If served to vulnerable residents, particular care should be taken to ensure proper preparation, cooking and handling of fresh, tinned and frozen shellfish.

Salads, fruits and uncooked vegetables are a good source of vitamins, minerals and fibre but they need careful preparation to ensure that the risk of contamination is reduced. Horticulturists do not always leave much time between feeding a crop with organic fertiliser, or spraying against pests and diseases, and harvesting the crop. Where possible, fruit and vegetables should have the skin removed providing this does not mean excessive manual handling. Leafy vegetables, such as lettuce, and fruit should be washed thoroughly in running water. All fruit and vegetables should be purchased from a reputable supplier.

Gifts of food

Visitors frequently bring food in for residents. It is preferable for this food to be of a low risk nature, such as fruit, biscuits, chocolates and pre-packaged fruit drinks.

Visitors should be discouraged from bringing in foods that are required to be kept hot. If chilled food is brought in, it should be transported to the care home in a chilled container and labelled with the resident's name and the date. Such food should be placed in a refrigerator which is maintained at a temperature of +4°C to +8°C (preferably one used only for this purpose); if it is not consumed within 24 hours, it should be disposed of safely. Managers should ensure that residents and visitors are aware of this policy.

Water

Potable water supplies

The provision of wholesome (clear, palatable and safe) drinking water is fundamental to the protection of public health. Public water companies have considerable expertise and resource to ensure that their supplies are designed and operated and their quality monitored to comply with the minimum requirements of the law. Water should be collected, stored safely and treated at source, often by coarse filtration. Water should be distributed in a purpose-designed system in a chlorinated form (containing more than 0.8 p.p.m. free residual chlorine).

Distribution systems should be free of 'dead legs' and spurs. Joints and leaks should be repaired by qualified plumbers. Mains supply tap water in the UK is wholesome and of a very high quality, often of a standard higher than most forms of bottled water. Potable water if retained in storage tanks should be pretreated from extraneous contamination and should be free from coliform bacteria, particularly *Escherichia coli*. If detected, this organism is an indicator of human/animal faecal contamination. Uncontrolled water supplies are easily contaminated with coliforms, environmental mycobacteria, *Legionella* spp. and filamentous fungi.

During adverse weather conditions, surface water may become contaminated with extraneous faecal matter and occasionally with *Cryptosporidium parvum*. Water from deep boreholes is safe to drink raw but, because of the slight risk to immunocompromised patients, it is better filtered. Occasionally, boiled water orders (Bouchier Report, 1997) may be issued but problems arise in defining which patients would benefit from this.

Potable water in containers

Spring water is tapped off from a single underground source but table water may come from one or more sources, which may or may not be an underground supply. Such water has variable cationic and anionic content and be contaminated with aerobic gram-negative bacilli.

Water coolers are often found in healthcare premises and should be mains fed not topped up. Stand-alone coolers should not be used in clinical areas. Contamination can be reduced by regular maintenance and cleaning. Similarly, ice-making machines are frequently contaminated and should be under strict hygienic control and monitored. Contamination levels may be low but non-fermenting gram-negative bacilli can flourish in almost carbon-free water.

Non-potable water

Non-potable water is used for a variety of reasons in healthcare premises and is often a source of a variety of pathogens. Legionnaire's disease (often caused by *Legionella pneumophila*) is usually associated with hot water services and recirculating cooling water systems connected to air conditioning plants. *Legionella* spp. are naturally widespread in water, particularly stagnant water systems where biofilm may build up and resist decontamination by heat, chlorination and biocides. The route of infection is usually inhalation of contaminated water droplets from ventilation systems and showers. The number of organisms that cause infection has not been reliably determined and will vary. A risk assessment has to be made, particularly with susceptible patients.

Hot water should be stored at 60°C or above and cold water at 25°C or less. Warning notices to the effect that hot water may cause harm may not be enough to safeguard the elderly or the poor sighted. Prevention and control strategies should be in place to minimise the risk of healthcare-associated legionellosis.

Rinse water is a frequent source of contamination unless its use is controlled and monitored. Immersion in water, such as the use of hydrotherapy pools, may be a common cause of skin, ear, chest and gastrointestinal infections. Pool maintenance is essential and management programmes should be established. Pools should be cleaned regularly and emptied annually. Patients and healthcare workers should adhere to strict rules of cleanliness and hygiene. Pool water should be circulated through filters and suitable disinfectants, in appropriate amounts, should be added; there should be the means to adjust the pH (7.2–7.8). If water is used as part of irrigation therapy, then a decontamination protocol should be used to make sure that showers, spray heads and tubing are regularly maintained.

All water outlets should be regularly inspected and maintained by qualified plumbers and where problems occur with water contamination then point-of-use filters should be considered.

Laundry and linen

The provision of clean linen is a fundamental requirement of care. Incorrect handling, laundering and storage of linen can pose an infection hazard.

When setting up a care home, owners should consider whether they are going to have an on-site laundry or make other arrangements. Proper facilities for a laundry are expensive; commercial

washing machines, dryers, ongoing costs of maintenance and labour are high. A long-term contract with a commercial laundry or hospital could be a more satisfactory solution.

Infection can be transferred between contaminated and uncontaminated items of clothing, laundry and the environments in which they are stored. Even during a normal washing cycle a number of micro-organisms can be passed between clothing and linen, and will only be partially removed during the rinse cycles. Thorough drying of the laundry, however, does reduce the levels of contamination to a level that no longer poses a risk.

Within the care home, specific hygiene measures should be taken to reduce these risks, including:

- correct handling to prevent the spread of infection
- appropriate disinfection of the laundry.

The legal framework that applies to these activities includes the Health and Safety at Work Act 1974 and Management of Health and Safety at Work Regulations (1999), The Control of Substances Hazardous to Health Regulations (2002) and the National Minimum Care Standards (2002).

HSG(95)18 *Hospital laundry arrangements for used and infected linen* remains extant guidance, although this will be reviewed during 2006/2007. Advice can be sought from the local HPU or CICN.

Requirements for laundering

- A laundry area designated for that purpose only, with separate ventilation and a flow through system, so that dirty laundry can arrive through one door and be quickly decontaminated, before drying and removal through a separate exit to a clean storage area.
- An industrial washing machine with sluice and hot wash cycles is required. These should be professionally installed and maintained with precautions to prevent contamination by them creating aerosols.
- An industrial dryer should be used that is regularly maintained to dry all clothing and linen.
- A regular service and maintenance inspection schedule should be maintained for the home's regulating body.
- Appropriate personal protective clothing and eye protection should be available for staff.
- Hand decontamination facilities, including hand hygiene basin with lever taps and no plug or overflow, liquid soap and disposable paper towels. Hand decontamination solutions, e.g. alcoholic hand gel, should be available along with a pedal-operated clinical and domestic waste bin and first aid kit.

Under no circumstances should a manual sluice facility or sluicing basin be used or situated in the laundry.

Handling dirty linen

All dirty linen must be handled with care and attention paid to the potential spread of infection. Plastic aprons and suitable gloves should be worn for handling dirty or contaminated clothing and linen. Gloves in the laundry should meet the same standards as gloves used for other caring activities because of the potential exposure to blood and other body fluids. Care should also be taken to reduce the risks of latex sensitisation through the continued need to wear protective gloves – suitable alternatives are available for purchase.

Linen should be removed from a resident's bed with care, avoiding the creation of dust, and placed in the appropriate bag category outside the room. Personal clothing should also be removed with care and placed in the linen bag, not placed upon the floor. Linen should be separated into categories ready for decontamination, negating the need for additional handling within the laundry. Laundry staff should never empty bags of linen onto the floor to sort the linen into categories – this presents an unnecessary risk of infection. Hands should then be decontaminated.

Linen should be divided into three basic categories ready for decontamination; many care homes currently use three water-soluble/alginate bag liners within cotton sacks in a wheeled trolley to aid this separation, keeping linen off the floor before taking the bags to the laundry.

Policy on the management of linen may differ from area to area. The following advice is given as a suggested practical approach to the management of laundry within the care home. Further advice can be sought from your local CICN/HPU. If linen is sent to an off-site laundry, they should be made aware of its nature and their written guidelines should be followed. You should be satisfied that the laundering of items sent will meet decontamination guidelines.

Categorisation and segregation of linen

It is the responsibility of the person disposing of the linen to ensure that it is segregated appropriately. Three categories should be used, these can be colour coded.

- Used linen and clothing – white cotton sack. Soiled linen should be placed into a clear, water-soluble/alginate bag, clothing into a separate water-soluble bag, within a white cotton sack.
- Heavily soiled/infected linen – red cotton sack. Heavily soiled items should have any solids removed prior to being placed into a red, water-soluble/alginate bag within a red cotton sack. Infected linen includes linen with blood or other body fluids present that could contain pathogenic organisms, e.g. viral gastroenteritis or blood where blood-borne viruses could be present.
- Clothing and heat-labile linen – off white cotton sack. This should be placed into a clear, water-soluble/alginate bag within a cotton sack. Heavily soiled clothing should be placed into a red, water-soluble/alginate bag.

Manual soaking/slucing must never be carried out. The pre-wash/slucice cycle in the washing machine should be used after removing any solids.

The laundering process

Many micro-organisms will be physically removed from the linen, by the detergent and water, during the washing cycle. Washing at high temperatures, above the normal domestic 40°C wash, will allow the temperature of the water to disinfect the items.

All linen/clothing should enter the laundry through the dirty entrance, and should not be stored but quickly processed.

The laundry staff should never open the inner water-soluble bags. Instead, the bags should be transferred to the washing machine for decontamination. Machines should not be overloaded.

All items should be processed in a cycle that reaches 71°C for at least three minutes or at 65°C for at least ten minutes. Heavily soiled/infected linen should also have a pre-wash cycle selected. Heat-labile items should be washed at the highest temperature possible for the item. If the item has been heavily soiled or is infected, it should be placed in a red, water-soluble bag and a pre-wash cycle selected, along with an appropriate disinfectant, e.g. oxygen-releasing or bleaching agent added to the washing process. Regularly washing items below 65°C without using a bleaching agent may allow biofilms to build up in the machines.

All items should then enter a drying process within an industrial dryer. Once removed they should be stored in a clean area, above floor level and not be kept in the laundry area.

Advice to staff on laundering of uniforms

The uniforms of staff providing personal care should be changed daily, and the wash temperature should reach the minimum of 65°C for at least ten minutes. This should be followed by thorough drying and hot ironing.

Immunisation

Presented below is a summary of some of the important diseases that may be relevant in a care home setting. For a full and comprehensive guide on all matters relating to vaccine-preventable diseases refer to *Immunisation against infectious disease 1996 – The 'Green Book'*. This is the Department of Health publication that reflects national policy on matters relating to immunisation. Copies can be accessed on the Department of Health website (www.dh.gov.uk/greenbook). Information and advice related to vaccine-preventable diseases can also be obtained from your local HPU.

COSHH requires that if a risk assessment shows there to be a risk of exposure to biological agents for which vaccines exist, then these should be offered if the employee is not already immune. The pros and cons of immunisation/non-immunisation should be explained when making the offer. The Health and Safety at Work Act 1974 requires that employees are not charged for protective measures such as immunisation.

For further information, refer to *Biological agents: managing the risks in laboratories and healthcare premises* (Health and Safety Executive, 2005).

Influenza – residents and staff

Influenza is an acute viral infection of the respiratory tract. There are three types of influenza virus: A, B and C. Influenza A and B are responsible for most clinical illness. Influenza is highly infectious with an incubation period of between one and three days.

Influenza causes acute respiratory illness among people of all ages every winter. Those most severely affected are older people and people who already have a chronic medical condition such as heart or respiratory disease. Influenza is estimated to cause about 12,000 deaths in the UK in an average year and can put considerable strain on health services.

Annual influenza immunisation is recommended for all those living in long-stay care homes or other long-stay care facilities where rapid spread is likely to follow introduction of infection and cause high morbidity and mortality. Immunisation is also recommended for all those over the age of 65 years and all those aged over six months with serious chest, heart, liver, kidney disease or diabetes requiring insulin or oral hypoglycaemic drugs and those who are immunosuppressed by disease or treatment.

Influenza immunisation is highly effective in preventing influenza in working-age adults. Influenza immunisation is recommended for health and social care staff directly involved in patient care, especially for staff in nursing and care homes who look after older people. Influenza immunisation of staff may reduce the transmission of influenza to vulnerable patients, some of whom may have impaired immunity and thus reduced protection from any influenza vaccine they have received themselves.

For further information see: www.dh.gov.uk/assetRoot/04/12/32/35/04123235.pdf

Pneumococcal infections

Streptococcus pneumoniae (also called pneumococcus) can cause severe chest infection, blood poisoning and meningitis, especially in the very young, elderly people, or in anyone with reduced immunity. Pneumococcal immunisation is recommended for all those 65 years and over and those under 65 years of age who are at an increased risk from pneumococcal infection. These medical risk groups include people who have a heart condition, chronic lung disease, chronic liver disease, diabetes mellitus, a weakened immune system, a damaged spleen or no spleen.

A single dose of pneumococcal polysaccharide vaccine is recommended for those 65 years and over or over two years of age and in a medical risk group. Revaccination with pneumococcal vaccine is not recommended except for people whose antibody levels are likely to decline more rapidly, e.g. people with no spleen or who have a problem with their spleen or people with chronic renal disease.

Ideally, pneumococcal vaccine should be given four to six weeks before elective splenectomy or chemotherapy. Where this is not possible, it should be given up to two weeks before.

See also: www.dh.gov.uk/assetRoot/04/12/32/41/04123241.pdf

Hepatitis B – staff

Hepatitis B vaccination is recommended for the following groups considered at increased risk:

- healthcare workers who may have direct contact with patients' blood or blood-stained body fluids or with patients' tissues; this includes any staff who are at risk of injury from blood-contaminated sharp instruments or being deliberately injured or bitten by patients
- staff of care homes and other accommodation for those with learning difficulties
- individuals in residential accommodation for those with learning difficulties
- individuals receiving regular blood or blood products and their carers
- patients with chronic renal failure
- patients with chronic liver disease.

The objective of the immunisation programmes is to provide a minimum of three doses of hepatitis B vaccine for individuals at high risk of exposure to the virus or complications of the disease.

Schedule

- nought, one and six months
- nought, one and two months in groups at high risk and for post-exposure prophylaxis. A fourth dose is given at 12 months

In those at risk of occupational exposure, particularly healthcare workers, antibody titres should be checked one to four months after the completion of a primary course of vaccine. It is preferable to achieve antibody titre (anti-HBs) above 100 mIU/ml.

Table 2: Antibody responses to hepatitis B vaccine

Antibody level	Action
100 mIU/ml or more	<ul style="list-style-type: none"> • No further doses at this time. • Single booster dose of vaccine, once only, around five years after primary course. In immunocompetent individuals antibody titres are not required before or after this booster dose.
10–99 mIU/ml	<ul style="list-style-type: none"> • A single booster dose at this time. In immunocompetent individuals, further assessment of antibody levels is not indicated. • Single booster dose of vaccine, once only, around five years after primary course. In immunocompetent individuals, antibody titres are not required before or after this booster dose.
Less than 10 mIU/ml	<ul style="list-style-type: none"> • Non-response. • Test for markers of current or past infection. • Repeat course of vaccine followed by retesting after the second course.

See also: www.dh.gov.uk/assetRoot/04/12/32/33/04123233.pdf

Tuberculosis and BCG vaccine – staff

Human tuberculosis (TB) is caused by *Mycobacterium tuberculosis* and may affect any part of the body. The most common form of TB is pulmonary (lung) TB, which accounts for almost 60% of all TB cases in the UK. The symptoms are varied and depend on the site of infection. General symptoms may include fever, loss of appetite, weight loss, night sweats and lassitude. Pulmonary TB typically causes a persistent productive cough, which may be accompanied by blood-streaked sputum. Almost all cases of TB in the UK are acquired by the respiratory route through breathing in infected respiratory droplets from a person with infectious respiratory TB. Transmission is most likely when the index case has sputum that is smear positive for the bacillus on microscopy and often after prolonged close contact, such as living in the same household.

Not all healthcare workers are at an equal risk of TB. There are likely to be categories of healthcare workers who are at particular risk of TB and this should be part of the clinical risk assessment when the use of BCG is being considered for a healthcare worker, e.g. contact with possible TB patients or clinical material. BCG vaccine should be offered to unvaccinated individuals aged under 35 years who are found to be tuberculin negative following Mantoux testing. There are no data on the protection afforded by BCG vaccine when it is given to adults aged 35 years and over.

See also: www.dh.gov.uk/assetRoot/04/12/44/92/04124492.pdf

Tetanus (lockjaw) – residents and staff

Tetanus can be caught through any wound contaminated by soil, including, for example, puncture wounds such as those inflicted by a rose thorn contaminated with manure. Most staff should have had a primary course of immunisation in childhood and adequate booster doses, including one on leaving school. Older staff and residents, however, may not have had either a primary course or adequate booster doses. Cases of tetanus have a high fatality rate, and it is recommended that the immunisation status of all staff and residents is checked and appropriate action taken.

See also: www.dh.gov.uk/assetRoot/04/12/33/50/04123350.pdf

Rubella (German measles) – staff

All seronegative women of childbearing age should be protected against rubella. Any nursing home which is likely to deal with women of childbearing age should require evidence from staff in the form of the result of an appropriate blood antibody test to show that they are immune to rubella (German measles). Although the disease is not much more than a mild fever and rash, it can have devastating effects on the developing foetus, especially during the first three months of a pregnancy. A history of the infection as a child or adult but without an antibody test is unreliable. There are many similar fleeting rashes that are not due to rubella and do not give immunity to it. Satisfactory evidence of protection would include documentation of:

- having received two doses of a rubella-containing vaccine, or
- a positive antibody test for rubella.

Staff and female residents of childbearing age who are not immune should be immunised with two doses of mumps, measles and rubella (MMR) vaccine, the second dose given one month after the first.

See also: www.dh.gov.uk/assetRoot/04/13/43/33/04134333.pdf

Measles – staff

Measles is caused by a highly infectious virus of the paramyxovirus family that produces a rash and fever. It can result in complications such as convulsions, pneumonia, inflammation of the brain and even death.

Measles is spread by airborne or droplet transmission. Individuals are infectious from when the first symptoms occur to four days after the appearance of the rash.

MMR vaccine can be given to individuals of any age. The decision on whether or not to vaccinate adults needs to take into consideration the past vaccination history, the likelihood of an individual remaining susceptible and the future risk of exposure and disease. Individuals born before 1970 are likely to have had all three natural infections and are less likely to be susceptible.

It is important that healthcare workers are protected against measles so that they do not transmit the virus to vulnerable groups.

Satisfactory evidence of protection would include documentation of:

- having received two doses of MMR vaccine, or
- positive antibody tests for measles.

MMR vaccine is recommended when protection against measles, mumps and/or rubella is required. It can be given irrespective of a history of measles, mumps or rubella infection or vaccination. There are no ill effects from immunising such individuals because they have pre-existing immunity that inhibits replication of the vaccine viruses.

See also: www.dh.gov.uk/assetRoot/04/12/44/88/04124488.pdf

Poliomyelitis – staff

Poliomyelitis is an acute illness that follows invasion through the gastrointestinal tract by one of three serotypes of polio virus (serotypes 1, 2 and 3). Transmission is through contact with the faeces or pharyngeal secretions of an infected person. Oral polio vaccine (OPV) was used for routine immunisation in the UK because of the risk of importation of wild virus until 2004, at which time it was replaced by inactivated polio vaccine (IPV). Both OPV and IPV provide excellent individual immunity.

See also: www.dh.gov.uk/assetRoot/04/12/32/42/04123242.pdf

Varicella – staff

Varicella (chickenpox) is an acute, highly infectious disease caused by the varicella zoster virus. The illness usually starts with one to two days of fever and malaise although this may be absent, particularly in young children. Vesicles begin to appear on the face and scalp, spreading to the trunk and abdomen and eventually to the limbs. After three or four days, vesicles dry with a granular scab and are usually followed by further crops. Vesicles may be so few as to be missed or so numerous that they become confluent, covering most of the body.

Herpes zoster (shingles) is caused by the reactivation of the patient's varicella virus. Virus from lesions can be transmitted to susceptible individuals to cause chickenpox but there is no evidence that herpes zoster can be acquired from another individual with chickenpox.

Varicella immunisation is recommended for non-immune healthcare workers who have direct patient contact. Healthcare workers who have no previous history of chickenpox or shingles infection will need to have a blood test to check their immunity. Those who are seronegative should be recommended the vaccine.

See also: www.dh.gov.uk/assetRoot/04/12/86/09/04128609.pdf

Antimicrobial prescribing

Overuse of antimicrobial agents has led to a significant increase in antibiotic resistance in many pathogenic bacteria. Use of many oral broad-spectrum agents such as cephalosporins, quinolones and macrolides alters bowel flora and promotes colonisation with multi-resistant strains such as methicillin-resistant *Staphylococcus aureus* (MRSA) and extended-spectrum beta-lactamase (ESBL)-producing *E. coli*. In addition, the use of broad spectrum antibiotics increases the risk of infection and spread of *Clostridium difficile*, which may cause serious colitis. In a closed

community such as a care home these problems will be magnified. Home owners/matrons need to ensure that GPs do not prescribe antibiotics unnecessarily for their residents. Antibiotics prescribed for one resident must not be used for other residents or staff. Advice on management of medicines within a home can be obtained from the pharmacy adviser of the local primary care trust. Local health organisations have guidelines on antibiotics that define indications and choice of agent. These are produced in consultation with the local microbiologist, the CCDC, pharmacists and the prescribing committee.

Guidance on prescribing antimicrobials for the treatment of infection can be found at www.hpa.org.uk/infections/topics_az/primary_care_guidance/Antibiotic_guide_250506/pdf (HPA, April 2006).

Information on the common conditions managed in non-acute settings can be found at www.prodigy.nhs.uk

Antimicrobial medicines management

In 2003, the Royal Pharmaceutical Society of Great Britain (RPSGB) published *Guidance on the administration and control of medicines in care homes and children's services*. The RPSGB guidance outlines the current legislation that applies to all medicines in care homes irrespective of how they were obtained. Details are given of the statutory requirements for the provision of written policies and procedures, and the recording of all medicines.

In addition to the requirements laid out in the RPSGB guidance, the following recommendations are considered good practice for the use of antimicrobials.

The Medicines Act 1968 stipulates that medicines must only be administered to the person for whom they have been prescribed, labelled and supplied. Antimicrobials should only be used following the prescriber's advice, and medicines prescribed for one service user should not be given to another. Antimicrobials are specific as to the type of organism they work for. They should not be used for a purpose that is different from that for which they were prescribed. Unwarranted use of antimicrobials can partially mask symptoms and delay the exact diagnosis and recovery. Unless directed by the prescriber, antimicrobials should not be administered before the service user has symptoms (prophylactic treatment) because that increases the risk of resistance developing.

Although many antibiotics initially prescribed are 'broad-spectrum' (capable of killing a wide range of bacterial types), each antibiotic has limited effectiveness against certain types of bacteria. If an infection does not resolve, the antibiotic being taken may not be compatible with the bacteria causing the infection. The prescriber should be contacted.

If antimicrobials are prescribed, the full course should be administered even if the symptoms improve. Not finishing the treatment contributes to the development of resistant bacteria. Care workers should therefore ensure that the duration of the course of treatment is specified by the prescriber and that the patient actually receives it. With some antimicrobial dosage forms, for example tablets, this usually applies to the entire prescription bottle. However, with liquid antimicrobials, very often the full course of therapy does not equal all the medication in the bottle. Clarification may need to be sought from the prescriber.

To ensure that the antimicrobial is fully effective, the amount of antimicrobial in the body needs to be kept at the required level and as constant as possible. The time of administration should therefore be adhered to if at all possible and doses should ideally be kept the same length of time apart. If a dose of antimicrobial is missed, it should be administered as soon as possible, unless it is almost time for the next scheduled dose. If it is nearly time for the next dose, the missed dose should not be administered, and the usual dosing schedule should be resumed. Doses should not be 'doubled-up' to catch up.

Administration of antimicrobials

It is important that antimicrobials are administered appropriately to ensure successful treatment and reduce the development of resistance. The prescriber should be asked to write full and precise instructions on the prescriptions. Legislation requires that each medicine must have a printed label containing the following information:

- service user's name
- date of dispensing
- name and strength of medicine
- dose and frequency that the medicine must be administered.

When the administration route is other than oral, it is important for the route to be stated. Terms such as 'when required' or 'as before' should be avoided. In the case of multiple containers, each container should be labelled. For medications that have an inner container and an outer box (e.g. eye drop bottles, cream and ointment tubes) the label should be applied to the item rather than the outer container.

Milk and antacids may hamper the absorption of some antimicrobials. The instructions for use should be checked.

Capsules must be swallowed whole. Taking the contents separately or chewing the capsules interferes with absorption of antimicrobials by interfering with the timing of their delayed-release mechanisms. If a patient has problems swallowing the preparation prescribed, the prescriber should be contacted and an alternative formulation prescribed.

When administering liquid-formula antimicrobials, the bottle should be shaken vigorously before use so as to mix the contents and deliver a uniform concentration of the drug every time. A medicinal measuring spoon should be used to accurately measure the right dose; household utensils do not generally hold a true teaspoon (5 ml) or tablespoon (10 ml).

Adverse effects

Many antimicrobials (ampicillin, amoxicillin, etc.) cause mild side effects such as abdominal discomfort and occasional diarrhoea. These are usually transient, resolve without intervention and are no reason to discontinue the treatment. Some people may, however, develop allergies to specific antibiotics, and may have a reaction to them. The prescriber should be contacted if the symptoms are severe or persist.

Expiry and storage

All medicines have an expiry date and should be stored away from heat, moisture and direct light. Some antimicrobial preparations, particularly liquids, have a very limited shelf-life and some have special storage requirements and therefore each item's requirements need checking. The expiry date should be checked before administration and the medicine returned to the supplier if the expiry date has passed.

Most *but not all* antimicrobial suspensions need to be stored in a refrigerator, preferably one that is specifically designated for the storage of drugs (+2°C to +4°C). The temperature of the refrigerator should be monitored using an appropriate thermometer and periodic audit of drug storage conditions should be undertaken. Reconstituted antimicrobial powders are unstable and should not be stored beyond two weeks. Partially used or left-over suspensions or syrups of antibiotics should not be used. These tend to deteriorate on storage. Because of the risk of infection being transferred into eye drops, the drops expire a short time after the date they are first used.

Pathology specimens

All specimens must be safely contained in an approved leakproof container. This must be enclosed in another container, commonly a sealable polythene bag. The request form should be placed in the side pocket of the polythene bag and must not be secured with clips or staples, as these may puncture the bag. Care should be taken to ensure the outside of the container and bag remain free from contamination with blood and other body fluids. The request form must be completed fully. This includes the patient identifier, the test required and relevant clinical details. Specimens to be sent by post must be in an approved Post Office container surrounded by absorbent material. The specimen must be sent by first class post. Guidance on specimen collection and supplies of containers, plus confirmation of transport requirements, should be obtained from the local laboratory supplying the diagnostic service.

Pests

Kitchens and food stores provide ideal conditions for pests. Not only do they eat the food but they contaminate and spoil a lot more; and rodents damage the fabric of buildings from the woodwork to electric cables. Control measures should include the following:

- stop pests getting in with well-fitting doors, covered drains, fly screens or bird-netting
- look out for evidence of the presence of pests – droppings, nests, chew-marks on wood or cables in the case of rodents; or, for insects, droppings, egg cases, vomit marks, damaged food containers, webbing caused by moths or the presence of the live insects themselves
- discard any foodstuffs or other articles affected by pests, including milk from bottles whose tops have been pecked by birds

- a named member of staff should take on the role of pest monitoring officer and liaise with an environmental health officer from the local authority or a reputable commercial pest control company
- make the premises less welcoming to pests – clean up any spillages and decaying food immediately; carry out regular inspection and rotate any stock; use rodent-proof containers with well-fitting lids; store food off the ground
- produce and display a pest control policy – do not put leftovers out for birds because it will encourage pests; consider the use of a properly installed electric flying-insect killer; use a waste-disposal unit to get rid of leftovers rather than relying on a registered waste-food collector, a waste compactor may also be considered; use plastic wheelie bins for all waste, these can be easily cleaned.

Ants

There are two main types of ants, the black or garden ant and the pharaoh's ant. Ants prefer to eat protein-rich foods, such as meat and cheese, as well as fats, sugar and chocolate.

Pharaoh's ants are yellow-brown in colour and very small, usually around 2 mm in length. Nests are located within the fabric of buildings, along heating ducts and in wall cavities. Pharaoh's ants feed on a wide variety of foods and also gnaw holes in material and rubber goods. These ants are capable of transmitting diseases and contaminating sterile materials with organisms such as staphylococci.

Treatment: garden ants require insecticidal treatment to destroy their trails, but tropical ants, like Pharaoh's ants, need to be treated by baiting so that nests can be destroyed.

Cockroaches

There are many different kinds of cockroach. Some of the more common types that occur in the UK include the common cockroach, German cockroach, brown-banded cockroach, American cockroach and Australian cockroach. Cockroaches can seriously harm business reputations, particularly within the food industry.

The brown-banded cockroach is often found in residential premises. The adult cockroaches are quite small, usually around 10–15 mm long, and are a yellowish-brown colour, with dark hoops around their body.

The German cockroach is often found in kitchens and laundries, hence its common name, the steamfly. The adult cockroaches are quite small, usually around 10–15 mm long, and are again yellowish-brown in colour but with two dark longitudinal marks or stripes.

Treatment: infestations can be very deep-seated within buildings and need regular and thorough treatment to control them. This does vary depending on the type of cockroach.

Mice

The house mouse is a very common pest of buildings. Field mice and other less common rodents are not usually found in houses, but may cause infestations occasionally. The identification of droppings usually confirms mice are present. They can also cause damage to foodstuffs, chew wrappers and cause holes in a variety of materials.

Treatment: mice can be controlled using a combination of rodenticidal baits and proofing.

Rats

The most common species of rat found in the UK is the brown rat. There is also the black rat, which is much less common and is usually found in a very few portside areas. Rats tend to be a problem as they are destructive and transmit many infections such as Weil's disease.

Treatment: successful eradication may be possible using a combination of rodenticidal baits and proofing.

Further information can be found in *The role of pest management in environmental health – a guidance document for local authorities* (CIEH, 2003).
www.cieh-npap.org/dl_goto.asp?id=9

Pets

Pets can often enhance the quality of life for the ageing and the ill. However, there are worries that a resident may catch an infection from a pet, especially if the resident's immunity is reduced through age, illness or therapy or if the resident may be pregnant. Sensible precautions can reduce this risk to an acceptable level.

The senior manager should ensure that a knowledgeable person is responsible for the animal and that there is no risk of contravening the relevant safety legislation.

There should be a written agreement within the establishment to ensure full understanding of:

- the types of animals allowed for the purposes of 'pet therapy' – only mature, house-trained pets are acceptable
- the control and permitted behaviour of pets while on the premises
- the routes for entry to and passage through the premises
- the areas where pets are not allowed
- any insurance liability of owners and handlers.

Care homes should consider having a local 'Pet Pass' system in place to check that all animals brought into the home are within the following recommended guidelines:

- all animals should be regularly groomed and checked for signs of infection or other illness
- if pets become ill, diagnosis and treatment by a vet should always be sought and the animal should not be in the home until restored to health
- all animals should have received relevant inoculations
- all animals should be wormed regularly every six months
- claws should be kept trimmed to reduce the risk of scratches; any scratches on residents should be promptly and thoroughly cleaned and observe for signs of infection
- pets should have been exercised before being allowed to meet with residents
- all pets, but especially cats and dogs, should have their coats cleaned regularly; bedding should also be cleaned regularly and insecticides used, as necessary, on the environment and the pet to control fleas; specialist advice should be sought if problems occur.

Care home staff need to be familiar with good hygiene practice in relation to pets. These include:

- pets should not be permitted to lick residents or jump on them in a manner which may cause accidents
- after residents and guests have touched animals, they should wash their hands well
- pet feeding areas should be kept clean
- pets should have their own feeding dishes, which should be washed separately from dishes and utensils used for residents and staff
- pets should not be fed in the kitchen or other food preparation areas
- recognised commercial brands of pet food should be used and pet food containers, once opened, should be kept separate from food for human consumption
- food not consumed within about 20 minutes should be taken away or covered and spillages cleared up to prevent attracting pests.

Litter boxes should be dealt with as follows:

- they should be cleaned by someone who is healthy and not pregnant
- a protective apron and gloves should always be worn when they are being cleaned
- a disposable liner should be fitted to the box for easy cleaning
- litter should be changed daily
- litter should be sealed in a plastic bag and disposed of in accordance with local guidance
- the box should not be sited near food preparation, storage or eating areas
- the box should be disinfected weekly by filling with boiling water which is allowed to stand for at least five minutes in order to kill *Toxoplasma* eggs and other micro-organisms.

Vets have identified some animals that are more likely to carry disease that could be spread to humans:

- stray animals
- sick animals, including birds
- wild animals, including birds
- animals with diarrhoea
- exotic animals
- cage birds (may carry psittacosis)
- tropical fish (may carry a form of TB)
- domestic pets that hunt and eat wild animals.

Good general hygiene and hand hygiene are essential for risk reduction. By ensuring that all the above advice is followed, the physical and psychological benefits of having pets should improve the quality of life of the residents.

Visitors

Most relatives and friends appreciate the risk of spreading infection to elderly, vulnerable people. If they have current symptoms of infection, potential visitors should be advised to telephone for advice before visiting. It may be necessary for staff to explain kindly but firmly that under certain circumstances visits should not be made. Visitors should be requested to help staff to keep the risk of spread of infection to a minimum and it may be helpful to display notices asking visitors who have symptoms of infection, particularly relating to respiratory or gastrointestinal tract, skin or eyes, to speak to the nurse or person in charge before seeing any residents. This applies especially to young children who are more likely to spread infection to elderly relatives. The local HPU/CICN can advise on relevant infection-control precautions that may be required. All visitors should be encouraged to wash their hands at the start and end of each home visit.

Deaths

Notices in respect of deaths

Regulation 37 of the Care Homes Regulations 2001 requires all deaths to be reported to the local office of the Commission for Social Care Inspection. Notification must be made in writing and without delay. A verbal notification must always be followed up in writing.

However, in the case of deaths due to notifiable infectious diseases, the manager of the home should also inform the local health protection unit by telephone at the earliest opportunity. A death, even if anticipated, may give rise to enquiries which it is easier for the health protection unit to deal with if they have already received information about the death from the home manager.

If a death has to be referred to the coroner, his or her instructions or those of the coroner's officer should be followed.

Last offices – hygienic management of dead bodies

Dead bodies should be treated with due respect and dignity and in a manner appropriate to the religious and cultural background of the deceased. Last offices vary according to religion and cultural practices and may, on occasions, be compromised by the need for specific measures to be taken if an infectious disease was associated with the death (see below). Problems not covered in this guidance should be discussed with the local health protection unit, who may wish to consult the appropriate priest or religious authority.

Though most bodies are not infectious, sensible precautions should be taken; disposable gloves and aprons should be worn when washing and preparing the body. If a family wishes to help with the washing and preparation of the body this should normally be allowed.

The body continues to secrete fluids after death. Any leaking orifices should be packed with cotton wool using gloves.

Special disinfection measures are not necessary after death. Washing the body with soap and water is adequate.

Dressings, drainage tubes, etc. should be removed, unless the death occurred within 24 hours of an operation or was unexpected, in which cases a coroner's post-mortem is likely. If tubes are to be left in position for this reason, they should be cut to just above skin level, covered with a dressing pad and secured with tape or a loose bandage.

Clean dressings should be applied to any wounds, secured with tape or loose bandage to prevent any further leakage from the wound site. The use of pins should be avoided since they pose a potential health hazard to staff.

The body should be removed to a cool environment as soon as possible. Decomposition occurs rapidly, particularly in hot weather and in overheated rooms, and may create a bacterial hazard and unpleasantness for those handling the body. This process is delayed if the body is cooled.

Last offices for a person suffering from an infectious disease

The precautions used for handling residents with an infectious disease remain necessary following the person's death. The body of a person who has been suffering from an infectious disease may remain infectious to those who handle it. In addition, it may be necessary for the body to be put in a body bag before removal to the undertakers. The undertaker will normally supply a bag if it is required.

Table 3 gives a summary of guidance on additional measures needed for specific infectious diseases. To minimise the risk of infection, disposable gloves and apron should be worn by those carrying out the laying out procedure, whether this is done by staff, the undertaker or, under supervision, by relatives.

Table 3: Additional measures required when handling a body with an infectious disease

Infection	Risk from	Body bag	Viewing body	Washing/ tidying	Embalming
Hepatitis B,C,D	Blood	Yes	Yes	Yes	No ¹
Intravenous drug use	Blood	Yes	Yes	Yes	No
HIV/AIDS	Blood	Yes	Yes	Yes	No
Creutzfeldt-Jakob disease (CJD) and variant CJD	Neurological	Yes	Yes	Yes	No
Invasive Group A streptococcus	Contact	Yes	Yes	Yes	No
Dysentery	Intestinal	Yes ²	Yes	Yes	Yes
Food poisoning	Intestinal	Yes ²	Yes	Yes	Yes
TB (including drug resistant)	Respiratory	Yes ³	Yes	Yes	Yes
General conditions					
Jaundice, if infection suspected, but no test results available	Blood	Treat as hepatitis B			
Gross faecal soiling	Intestinal	Yes ²	Yes	Yes	Yes

¹ Only by experienced embalmer in appropriate premises.

² Body bag only to contain leakage during transport/storage.

³ Cloth or mask placed over the deceased's mouth when body moved.

If a body bag is required before the body is removed to the undertakers, the body should be placed in a shroud, or the person's own clothes, and then in the plastic body bag, which must be carefully secured. The identity labels and 'Notification of Death' labels should be attached in such a way that they may be read through the body bag. Another 'Notification of Death' label and a 'Danger of Infection' label should be attached discreetly to the outside of the bag. **Neither label should state the diagnosis, which is confidential information, only the type of precautions required, such as the need to avoid embalming in the case of blood-borne virus infections.** The undertaker should be informed of the danger of infection but without disclosure of the diagnosis. Once the body is sealed in the body bag, protective clothing will no longer be necessary for those who handle the body.

The embalming of known or suspected hepatitis B or HIV-positive bodies is not recommended, but if held to be essential, particular care is necessary and the local consultant in communicable disease control should be advised of the situation to ensure that the procedure is carried out safely and lawfully.

If relatives wish to take the body abroad for a funeral, certificates may be required from the attending doctor and from the local HPU to certify that the body is safe for transport. This will normally be organised by the undertakers, in liaison with the doctor and the local HPU.

The furniture and any equipment in the resident's room should be cleaned thoroughly using hot water and detergent, unless the local HPU advises that disinfection is required. Body fluid spillages and laundry should be dealt with as described on pages 15 and 27.

See also *Controlling the risks of infection at work from human remains: a guide for those involved in funeral services (including embalmers) and those involved in exhumation* (Health and Safety Executive, 2005).

www.hse.gov.uk/pubns/web01.pdf

Part 4

General guidelines on the management of infections

Introduction

In this section, advice is given on how to prevent the spread of infection if individual cases occur in residents. Most of the diseases listed will have been diagnosed by a doctor (usually the resident's general practitioner), who should be the source of advice on treatment of the individual's illness.

Care homes are expected to meet the requirements laid down in the Care Standards Act 2000. In addition, Regulation 37 of the Care Homes Regulations 2001 states that:

“The registered person shall give notice to the Commission without delay of the occurrence of the outbreak of any infectious disease which in the opinion of any registered medical practitioner attending persons in the care home is sufficiently serious to be so notified.”

Persons in charge are reminded of the need to keep a record of residents suffering from any infectious disease (page 4). They are encouraged to remind the doctor of the duty to notify the diseases listed in Appendix 2, and should themselves immediately contact the CCDC by telephone to alert him or her to the occurrence of a case of any notifiable disease.

Whenever an outbreak of any infectious disease is suspected within a home, the person in charge must contact the CCDC.

Care homes should ensure that they provide suitable and sufficient information on each resident's infection status whenever they are moved from the care of one organisation to another.

Management of patients in isolation

It is important to remember that the resident in isolation will be both physically and psychologically isolated. When a decision about isolating an infected resident is taken, it is important to take into account the likely effect on the resident. Elderly people may become disorientated and confused by isolation, which should therefore be avoided unless it is really necessary. The local HPU/CICN will advise on the management of individual cases that pose difficulties. Verbal and written information must be given to both the resident and visitors; the local HPU/CICN may have leaflets explaining individual infections which the home can use. The information should include the details and reason for the isolation, the likely duration, precautions required and the ways in which the client's psychological and physical needs will be met, e.g. availability of telephone, newspapers, visiting times.

Planning of a client's care must take into account the extra time required for isolation procedures, i.e. donning of protective clothing, psychological support, extra time to take in food and drinks.

Diarrhoea and vomiting

1. Diarrhoea in elderly people is common and does not always have an infective origin. Other possible causes are over-prescription of laxatives, change in diet, underlying bowel disease. Nevertheless, all cases should be taken seriously and presumed to be infectious until advised otherwise.
2. The resident's GP should be notified. If infection is suspected, the GP may arrange for specimens to be sent to the laboratory (see page 36). This is particularly important if the diarrhoea follows a course of antibiotic treatment.
3. If more than two cases, suspected or known to be infectious, occur within a few days, the local HPU/CCDC should be notified.
4. Residents who are vomiting should be kept in a single room as long as symptoms persist. Most acute diarrhoeal infection is caused by viruses and is shortlived, but the symptoms and their effect on the elderly person can be severe. There is often little warning of the vomiting and, as the viruses can become airborne, the infection can spread rapidly in a home. It is therefore important that infected residents are isolated until 48 hours after the symptoms have settled. In contrast, although bacterial infections can cause severe diarrhoea, the infection is less often passed from person to person, and it may not be necessary to keep the resident isolated until persistent diarrhoea has resolved. Management should be planned on a careful risk assessment, which should take into account continence, personal hygiene, overall health, likelihood of physical contact with other residents or their food, the facilities available and the vulnerability of other residents. The local HPU/CICN can advise on this process.
5. Infected residents should, if possible, have sole use of a designated toilet as long as their symptoms persist. In the case of likely norovirus infection, they should keep a designated toilet facility for 48 hours after their symptoms have settled.
6. The local health protection team will advise on any special measures necessitated by an outbreak.
7. If food-borne infection is suspected, the HPU/EHO should be contacted and samples of food and of faeces/vomit should be retained for investigation. Sudden onset of symptoms in several residents and/or staff over 24–48 hours may suggest a food-borne problem.
8. Consideration should be given to the safety of visitors of residents with infections, particularly if the visitors are elderly or very young.
9. Information for visitors should ask them not to visit if they have had symptoms of diarrhoea or vomiting within the previous 48 hours.
10. Most residents with diarrhoea or vomiting can be cared for in the home environment, as the symptoms are likely to subside within 48 hours. In the event of hospital assessment/admission being necessary, the receiving hospital must be notified of the

possibility of infection before the resident arrives, so that appropriate precautions can be put in place to prevent spread.

11. If a resident is discharged from hospital within 48 hours of the last symptoms of diarrhoea and vomiting, every effort should be made to care for them in a single room with a dedicated toilet and appropriate precautions until they have been clear of symptoms for 48 hours.

Respiratory infections

1. Respiratory infections are very common and may be serious in elderly or debilitated people. They may be viral or bacterial in origin. The risk of respiratory infections can be reduced by annual influenza vaccination of elderly residents, and younger residents with serious underlying health problems. Influenza immunisation for care staff can also reduce the likelihood of a 'flu outbreak' occurring. Elderly residents should also receive pneumococcal vaccine (see page 31).
2. Many of these infections are airborne, so the residents should be nursed in a single room during the acute illness, particularly if they are coughing.
3. The GP may arrange for sputum specimens/respiratory secretions to be sent to the laboratory.
4. If an outbreak of respiratory disease in a residential home is suspected, the local CCDC/HPU should also be contacted. They may arrange for the collection of further specimens, and suggest the use of antiviral medication if indicated.
5. Consideration should be given to the safety of those visiting residents with infections, particularly elderly and very young visitors.
6. If residents require admission to hospital during a possible outbreak of respiratory infection, the admitting hospital should be informed of the infection risk before the patient arrives.
7. Pneumonia, unless associated with a viral influenza-like illness, is unlikely to be infectious to others. Nevertheless, the resident may be very ill and nursing in a single room is desirable.

Skin infections/infestations

1. It may be necessary to care for a resident in a single room until treatment of skin infections/infestations is complete, or during the acute/weeping phase of a skin infection.
2. Residents with infections must be treated with tact and their confidentiality must be protected. Although this applies to all types of infection, some infestations can lead to particular social stigmatisation.
3. The local HPU/CICN can advise on local policies on the treatment of infestations. They can also advise on how to co-ordinate the treatment of a large group of patients and/or staff and visitors if this is required.

4. Consideration should be given to the safety of visitors of residents with infections, and they should be provided with information about symptoms and treatment.
5. Visiting healthcare workers (e.g. district nurses or physiotherapists) who have close physical contact with residents must be informed if a resident has a skin infection or infestation.
6. If a resident with a skin infection, or an active or partially treated infestation, requires admission to hospital, the admitting hospital should be informed of the condition.

Blood-borne infections

1. Residents with sudden onset of jaundice should be isolated in a single room, with use of a dedicated toilet, until hepatitis A has been ruled out.
2. Residents with jaundice due to hepatitis B or C, or those who are carriers of the viruses or have HIV infection, do not need to be isolated.
3. Standard precautions, including care with sharps disposal, must be strictly observed.

Antibiotic-resistant bacteria

1. Residents may be transferred from hospital while colonised with a variety of antibiotic-resistant bacteria. Examples include MRSA and ESBL-producing *E. coli*. Usually these bacteria will be colonising the skin or gut, without causing harm to the resident, and will not cause harm to healthy people.
2. Because colonisation can be very long-term, it is not appropriate to isolate residents known to be colonised with antibiotic-resistant bacteria. Good hand hygiene and the use of standard precautions will help minimise the spread of these organisms in a care home environment.
3. It is not recommended that residents are treated in an attempt to rid them of colonisation with antibiotic-resistant bacteria while in residential care, or that they are sampled repeatedly to monitor the colonisation. Occasionally treatment of colonisation is recommended if a resident is to undergo elective surgery, but this should be discussed directly with the infection control team in the hospital concerned.
4. If a resident previously known to be colonised with antibiotic-resistant bacteria requires admission to hospital, this information should be added to the referral note.
5. **People affected by MRSA do not present a risk to the community at large and should continue their normal lives without restriction. MRSA is not a contraindication to admission to a home or a reason to exclude an affected person from the life of a home.** However, in residential settings where people with open post-operative wounds or intravascular devices are cared for, infection control advice should be followed if a person with MRSA is to be admitted or has been identified amongst residents.

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National Resource for Infection Control – www.nric.org.uk

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Appendix 1

Infectious disease/incident surveillance form

1. Name of reporting organisation
2. Address
3. Contact telephone number
4. Individual reporting
5. Date and time
6. Incident details/Name of individual Resident/Staff (delete as appropriate)
.....
.....
7. Symptoms
8. Number of people affected
9. GP informed: YES/NO
10. Name of local authority involved
- Local authority informed: YES/NO
11. Samples taken: YES/NO
12. Other details:
-
-
-
-

On completion, fax the form to your local health protection unit

Appendix 2

Notifiable diseases

A doctor who suspects that a patient is suffering from one of the following infectious diseases must notify the local authority's Proper Officer (usually the CCDC).

Under the Public Health (Control of Disease) Act 1984:

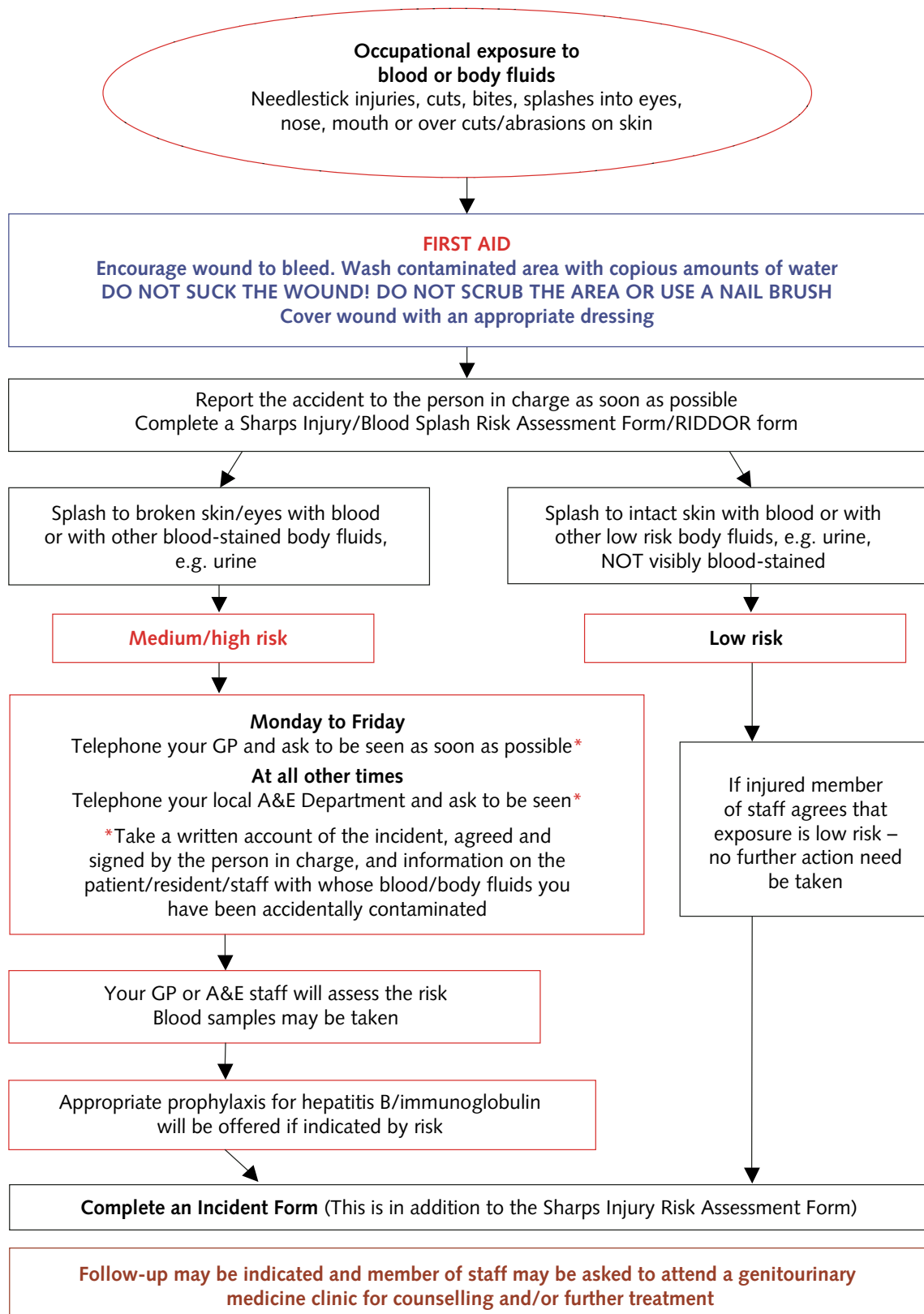
- Cholera
- Food poisoning
- Plague
- Relapsing fever
- Smallpox
- Typhus

Under the Public Health (Infectious Diseases) Regulations 1988:

- Acute encephalitis
- Acute poliomyelitis
- Anthrax
- Diphtheria
- Dysentery (amoebic or bacillary)
- Leprosy
- Leptospirosis
- Malaria
- Measles
- Meningitis
- Meningococcal septicaemia (without meningitis)
- Mumps
- Ophthalmia neonatorum
- Paratyphoid fever
- Rabies
- Rubella
- Scarlet fever
- Tetanus
- Tuberculosis
- Typhoid fever
- Viral haemorrhagic fevers
- Viral hepatitis
- Whooping cough
- Yellow fever

Appendix 3

Sharps injury flowchart



* See A Guide to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995. HSE Books (1999).

Appendix 4 List of diseases

Disease or causative organism	Mode of transmission	Period of infectivity	Infection control precautions	Treatment of linen	Notes	Notify CCDC
GASTROENTERITIS (DIARRHOEA AND VOMITING)						
Diarrhoeal illness (undiagnosed)	Hand to mouth Food Airborne	Depends on organism but usually until 48 hours after diarrhoea has stopped	Single room Separate toilet	Treat as infected	Food-borne infections can be preformed toxin mediated or an infection. Incubation is a few hours for the former, and up to 24 hours for the latter	If more than two cases occur
<i>Campylobacter spp.</i>	Food Hand to mouth Pet faeces	While diarrhoea persists	Single room if incontinent Separate toilet	Treat as infected	All pets in contact with resident should be examined by vet	Yes (as potential food poisoning)
<i>Clostridium difficile</i>	Hand to mouth Environmental contamination	While diarrhoea persists	Single room Separate toilet	Treat as infected	Follows treatment with antibiotics. Likely to cause outbreaks	Yes
<i>Cryptosporidium spp.</i>	Water Hand to mouth	While diarrhoea persists	Single room Separate toilet	Treat as infected		Yes
<i>Giardia lamblia</i>	Water Hand to mouth	Until treated	Single room if incontinent Separate toilet	Treat as infected		Yes
Viral gastroenteritis (undiagnosed)	Hand to mouth Droplet	Variable. May be several days after symptoms resolve	Single room Separate toilet	Treat as infected	Very likely to cause outbreaks	If more than two cases occur

Appendix 4 List of diseases (continued)

Disease or causative organism	Mode of transmission	Period of infectivity	Infection control precautions	Treatment of linen	Notes	Notify CCDC
Norovirus	Hand to mouth Droplet	Up to 48 hours after symptoms resolve	Single room Separate toilet	Treat as infected	Very likely to cause outbreaks	Yes
Rotavirus	Hand to mouth Droplet	Up to 48 hours after symptoms resolve	Single room Separate toilet	Treat as infected	Very likely to cause outbreaks	Yes
<i>Escherichia coli</i> including verotoxin-producing <i>E. coli</i> (VTEC)	Food Hand to mouth	Variable, but unlikely to infect others by 48 hours after diarrhoea stops unless poor hygiene/incontinent	Single room until 48 hours after diarrhoea stops Separate toilet	Treat as infected	Retain food samples Complications include haemolytic uraemic syndrome	Yes
<i>Salmonella</i> spp.	Food Hand to mouth	Variable, but unlikely to infect others by 48 hours after diarrhoea stops unless poor hygiene/incontinent	Single room until 48 hours after diarrhoea stops Separate toilet	Treat as infected	Retain food samples Organism can be carried in stools for weeks or months after infection	Yes
<i>Shigella</i> spp.	Hand to mouth Water or food contaminated by infected water	Variable, but unlikely to infect others by 48 hours after diarrhoea stops unless poor hygiene/incontinent	Single room until 48 hours after diarrhoea stops Separate toilet	Treat as infected	Very likely to cause outbreaks Complications include haemolytic uraemic syndrome	Yes
<i>Bacillus cereus</i> food poisoning	Food (preformed toxin)	Not infectious	None	No special treatment	Retain food samples	Yes

Appendix 4 List of diseases (continued)

Disease or causative organism	Mode of transmission	Period of infectivity	Infection control precautions	Treatment of linen	Notes	Notify CCDC
Clostridial food poisoning (<i>C. perfringens</i>)	Food	Not infectious	None	No special treatment	Toxin formed in gut after ingestion Retain food samples	Yes
Staphylococcal food poisoning	Food (preformed toxin)	Not infectious	None	No special treatment	Retain food samples Food contamination from infected fingers, eyes, etc. of food handlers likely	Yes
RESPIRATORY (CHEST) INFECTIONS						
Influenza or influenza-like illness	Droplet Environmental contamination	While symptomatic	Single room	No special treatment	See page 31 Immunisation	If influenza is confirmed by laboratory. Otherwise if more than two cases suspected
Pulmonary tuberculosis	Airborne if 'open' case (sputum smear positive). Otherwise not infectious	Normally two weeks after starting treatment	Single room if sputum smear positive	Treat as infected	CCDC will advise on the management of contacts (residents and staff)	Yes

69 Appendix 4 List of diseases (continued)

Disease or causative organism	Mode of transmission	Period of infectivity	Infection control precautions	Treatment of linen	Notes	Notify CCDC
SKIN INFECTIONS						
Cold sore (herpes simplex)	Direct contact with lesions	Until lesions crusted	Use gloves for handling lesions, feeding or mouth care	No special precautions		No
Shingles (herpes zoster)	Usually reactivation (of chickenpox) Direct contact with rash Airborne	Until lesions crusted	Should sleep in single room but may mix with other residents during the day if rash can be covered	Treat as infected	Staff and residents should not be in contact unless immune to chickenpox	If management of case poses difficulties
Impetigo (staphylococcal)	Direct contact with lesions	Until crusted over	Single room until 48 hours after treatment started Cover lesions if mixing with other residents	Treat as infected	The bacterium may be carried in the nose of infected resident, other residents or staff	If more than two cases suspected
Fleas	From pets Person to person	Until treated	If new resident, single room until treated Treat pets Launder resident's clothing and bedding	No special precautions	Vacuum room of infected person daily for several days, with particular attention to pest resting sites	No
Head lice	Person to person	Until treated	Combing egg cases (nits) and live lice from hair	No special precautions		No

Appendix 4 List of diseases (continued)

Disease or causative organism	Mode of transmission	Period of infectivity	Infection control precautions	Treatment of linen	Notes	Notify CCDC
Body lice	Person to person	Until treated	If new resident, single room until treated Launder resident's clothing and bedding	No special precautions but may be desirable to wash separately from other laundry		No
Pinworms, threadworms	Hand to mouth	Until treated	Personal hygiene including hand hygiene	No special precautions but may be desirable to wash separately from other laundry Avoid aerosols during bed making	Vacuum room of infected person daily for several days	If more than two cases suspected
Scabies	Person to person (close contact)	Until treated	Single room until 24 hours after treatment Launder resident's clothing and bedding	No special precautions but may be desirable to wash separately from other laundry	Untreated or the immune suppressed may develop more severe form of scabies. In this case it may be necessary to treat other residents, staff and family members	If more than two related cases suspected

Appendix 4 List of diseases (continued)

Disease or causative organism	Mode of transmission	Period of infectivity	Infection control precautions	Treatment of linen	Notes	Notify CCDC
BLOOD-BORNE INFECTIONS						
HIV/AIDS	Contact with infected blood or other body fluids Sexual transmission	For life	Standard precautions, including care with sharps (see page 14) and body fluids	Treat as infected if contaminated with blood or blood-stained body fluids	Resident's GP, consultant and the CCDC will collaborate with management	No
Hepatitis B	Contact with infected blood or other body fluids Sexual transmission	Variable, but can be for life	Strict application of standard precautions, including care with sharps (see page 14) and body fluids	Treat as infected if contaminated with blood or blood-stained body fluids	Immunisation of some staff may be recommended (see page 32)	Yes – for acute infection (jaundice) No – for chronic carrier state
Hepatitis C	Contact with infected blood or other body fluids	For one or more weeks prior to onset of the first symptoms; may persist in most persons indefinitely. May be infectious for life	Standard precautions including care with sharps (see page 14) and body fluids	Treat as infected if contaminated with blood or blood-stained body fluids		Yes – for acute infection (jaundice) No – for chronic carrier state
OTHER INFECTIOUS DISEASES						
Chickenpox (varicella)	Airborne Contact with rash	Infectious for 1–2 days before the onset of symptoms and six days after rash appears or until lesions are crusted (if longer)	Single room	Treat as infected	Pregnant staff and visitors who are not immune should avoid contact. CCDC will advise on the management of contacts	Yes

Appendix 4 List of diseases (continued)

Disease or causative organism	Mode of transmission	Period of infectivity	Infection control precautions	Treatment of linen	Notes	Notify CCDC
Whooping cough (pertussis)	Droplet	Five days after start of antibiotic treatment	Single room	Treat as infected	CCDC will advise on the management of contacts	Yes
Measles (rubeola)	Airborne	Incubation period is approximately 10 days from exposure to onset of fever and, usually, 14 days before the rash appears. The person is infectious from four days before the rash onset and four days after rash appearance	Single room	Treat as infected	CCDC will advise on the management of contacts	Yes
German measles (rubella)	Droplet	Incubation period of rubella may last for 14–17 days. Individuals are infectious from about one week before and at least four days after the onset of the rash	Single room	Treat as infected	Pregnant staff and visitors who are not immune should avoid contact. CCDC will advise on the management of contacts	Yes
Mumps	Droplet	Incubation period 15–18 days after exposure. Greatest infectivity is from two days before the onset of symptoms to four days after symptoms appear	Single room	Treat as infected	CCDC will advise on the management of contacts	Yes

Appendix 4 List of diseases (continued)

Disease or causative organism	Mode of transmission	Period of infectivity	Infection control precautions	Treatment of linen	Notes	Notify CCDC
Conjunctivitis	Direct contact with the discharge	Until 48 hours after treatment	Gloves/no touch technique when dealing with discharge. Personal hygiene/hand hygiene	Consider need to treat as infected		If two or more related cases are suspected
Hepatitis A	Hand to mouth Food	The incubation period is 15–50 days, average 28–30 days. Maximum infectivity occurs during the latter half of the incubation period and continues until seven days after jaundice appears	Single room Separate toilet	Treat as infected	May be asymptomatic but can be severe and prolonged in elderly people. No carrier state	Yes
Infectious mononucleosis (glandular fever)	Contact with saliva	Variable – may be several weeks	Care with articles soiled with nasal or throat discharges Encourage hand hygiene	No special treatment		No

Appendix 5 Exclusion from work

The following table gives advice on the minimum period of exclusions from work for staff members suffering from infectious disease (cases) or in contact with a case of infection in their own homes (home contacts). Advice on work exclusions can be sought from the care home occupational health advisor or local CCDC/HPN/CICN

Disease	Period of infectivity	Minimum exclusion period	
		Case	Home contact
Chickenpox	Infectious for 1–2 days before the onset of symptoms and six days after rash appears or until lesions are crusted (if longer)	Six days from onset of rash	None. Non-immune pregnant women should seek medical advice
Conjunctivitis	Until 48 hours after treatment	Until discharge stops	None
Erythema infectiosum (slapped cheek syndrome)	Four days before until four days after onset of rash	Until clinically well	None. Pregnant women should seek medical advice
Gastroenteritis (including salmonellosis and shigellosis)	As long as organism is present in stools, but mainly while diarrhoea lasts	Until clinically well and 48 hours without diarrhoea or vomiting. CCDC or EHO may advise a longer period of exclusion	CCDC or EHO will advise on local policy
Glandular fever	When symptomatic	Until clinically well	None
<i>Giardia lamblia</i>	While diarrhoea is present	Until 48 hours after first normal stool	None
Hand, foot and mouth disease	As long as active ulcers are present	One week or until open lesions are healed	None
Hepatitis A	The incubation period is 15–50 days, average 28-30 days. Maximum infectivity occurs during the latter half of the incubation period and continues until seven days after jaundice appears	One week after onset of jaundice	None – immunisation may be advised (through GP)
HIV/AIDS	For life	None	None

66 Appendix 5 Exclusion from work (continued)

Disease	Period of infectivity	Minimum exclusion period	
		Case	Home contact
Measles	Up to four days before until four days after rash appears	Four days from onset of rash	None
Meningitis	Varies with organism	Until clinical recovery	None
Mumps	Greatest infectivity from two days before onset of symptoms to four days after symptoms appear	Four days from onset of rash	None
Rubella (German measles)	One week before until five days after onset of rash	Four days from onset of rash	None
Streptococcal sore throat and scarlet fever	As long as organism is present in throat, usually up to 48 hours after antibiotic is started	Until clinically improved (usually 48 hours after antibiotic is started)	None
Shingles	Until after the last of the lesions are dry	Until all lesions are dry – minimum six days from onset of rash	None
Tuberculosis	Depends on part infected. Patients with open TB usually become non-infectious after two weeks of treatment	In the case of open TB, until cleared by TB clinic. No exclusion necessary in other situations	Will require medical follow-up
Threadworm	As long as eggs present on perianal skin	None but requires treatment	Treatment necessary
Typhoid fever	As long as case harbours the organism	Seek advice from CCDC	Seek advice from CCDC
Whooping cough	One week before until three weeks after onset of cough (or five days after start of antibiotic treatment)	Until clinically well, but check with CCDC	None

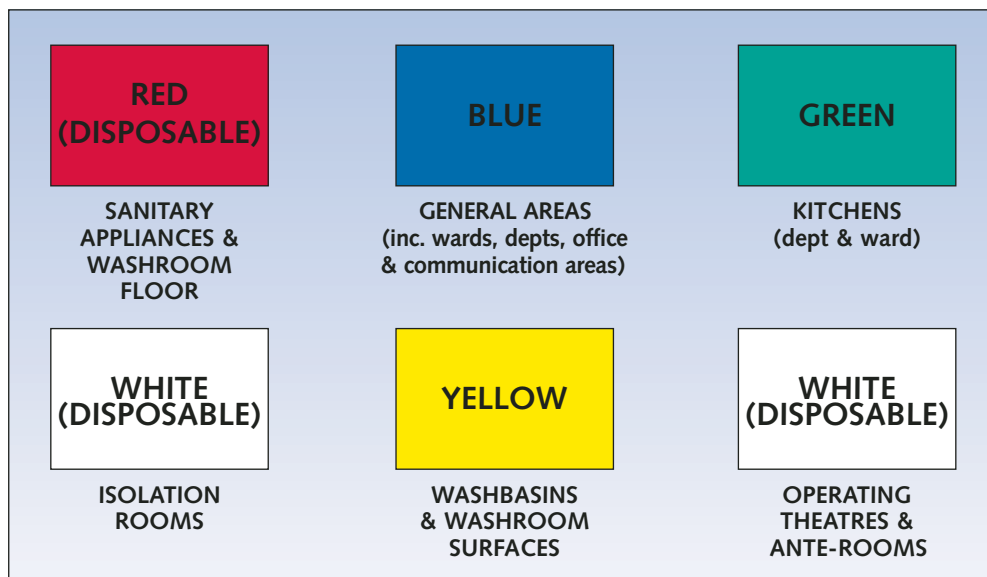
Appendix 5 Exclusion from work (continued)

SKIN CONDITIONS			
Disease	Period of infectivity	Minimum exclusion period	
		Case	Home contact
Impetigo	As long as purulent lesions are present	Until skin has healed or 48 hours after treatment started	None. Avoid sharing towels
Head lice	As long as lice or live eggs are present	Exclude until treated	Exclude until treated
Ringworm			
1. Tinea capitis (head)	As long as active lesions are present	Exclusion not always necessary until an epidemic is suspected	None
2. Tinea corporis (body)	As long as active lesions are present	None	None
3. Tinea pedis (athlete's foot)	As long as active lesions are present	None	None
Scabies	Until mites and eggs have been destroyed	Until day after treatment is given	None (GP should treat family)
Verrucae (plantar warts)	As long as wart is present	None (warts should be covered with waterproof dressing for swimming and barefoot activities)	None

Appendix 6

Colour coding of cleaning equipment

Based on the National Colour-Coding System for the British Institute of Cleaning Science



THE GOLDEN RULE: WORK FROM THE CLEANEST AREA TOWARD THE DIRTIEST AREA. THIS GREATLY REDUCES THE RISK OF CROSS CONTAMINATION.

1. The aim of a colour-coding system is to prevent cross contamination.
2. It is vital that such a system forms part of any employee induction or continuous training programme.
3. A minority of people are colour blind in one or more colours. Some individuals may not know this and colour identification testing should form part of any induction training.
4. Always use two colours within the washroom/sanitary area.
5. The colour-coding system must relate to all cleaning equipment, cloths and gloves

Monitoring of the system and control of colour-coded disposable items against new stock release is extremely important.

Taken from *The NHS Healthcare Cleaning Manual*.

http://patientexperience.nhsestates.gov.uk/clean_hospitals/ch_content/cleaning_manual/background.asp

Appendix 7

Working group on the prevention and control of infection in care homes

Membership

Dr Richard Slack (Chair), Consultant in Communicable Disease Control, Health Protection Agency, East Midlands, and Public Health Medicine Environmental Group

Ms Helen Casstles, Senior Lecturer in Environmental Public Health, Liverpool John Moores University, and Chartered Institute of Environmental Health

Ms Esther Dias, Lead Officer Infection Control and Decontamination, Bromley PCT and Infection Control Nurses Association

Prof. Brian Duerden, Inspector of Microbiology and Infection Control, Department of Health

Prof. Michael Emmerson, Specialist Advisory Committee on Antimicrobial Resistance

Mr Ian Gray, Health Policy Officer, Chartered Institute of Environmental Health

Ms Kim Gunn, Health Protection Nurse, Shropshire and Staffordshire Health Protection Unit, and Local and Regional Services, Health Protection Agency

Ms Helen Jenkinson (co-opted), Safer Practice Lead Infection Control, National Patient Safety Agency

Dr Ruth Lockley, Consultant Medical Microbiologist, University Hospitals of Coventry and Warwickshire, and Public Health Medicine Environmental Group

Mr James Oram, Education Committee Co-ordinator, Infection Control Nurses Association

Dr Pat Nair, Director, Norfolk/Suffolk/Cambridgeshire Health Protection Unit, East of England, and Public Health Medicine Environmental Group

Dr Robert Spencer, Consultant Medical Microbiologist, Health Protection Agency, Bristol, and Chairman, Hospital Infection Society

Secretariat

Ms Samita Dass, Programme Support Officer, Department of Health

Ms Carole Fry, Nursing Officer Communicable Diseases, Department of Health

Dr Geoff Ridgway, Senior Medical Officer, Department of Health

Acknowledgements

Ms Lorraine Brayford, Programme Manager, Sustainable Development, Department of Health

Dr Karen Noakes, Senior Scientist, Immunisation Policy, Department of Health

Dr Sarah Garner, Pharmacist, Specialist Advisory Committee on Antimicrobial Resistance

Mr Graham Jacob, Cleaning Lead, National Patient Safety Agency

Ms Virginia Storey, Senior Nursing Advisor/Head of Policy, Commission for Social Care Inspection

Ms Sue Wiseman, Nurse Consultant, National Resource for Infection Control

Local contacts

If advice on the prevention and control of infection is required, the following can be contacted for information.

Community Infection Control Nurse/Health Protection Nurse

Contact details for your home

Local Health Protection Unit

Contact details for your home

The Commission for Social Care Inspection

Contact details for your home

The Environmental Health Team, Public Protection Service

Contact details for your home

Acute Trust Hospital Infection Control Team

Contact details for your home

Wound Care Specialist Nurse

Contact details for your home

Continence Specialist Nurse

Contact details for your home



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