

Infection Control Guidelines

**For early years and
childcare providers**

December 2014

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Useful Addresses

Local Health Protection Unit

Name	West Midlands Public Health England Team
Address	Elgar House Green Street Kidderminster Worcestershire DY10 1JF
Contact Number(s)	0344 225 3560 (op.2, op. 3)
Email address	

Local Authority Departments

Name	Worcestershire County Council Early Years and Childcare Service
Address	County Hall Spetchley Road Worcester WR5 2NP
Contact Number(s)	01905 822672
Email address	EYCC@worcestershire.gov.uk

Name	
Address	
Contact Number(s)	
Email address	

Useful Contacts (e.g. Local Trusts, TB Nurse, Infection Prevention and Control Team) Add local contacts as required:

Name	
Address	
Contact Number(s)	
Email address	

Name	
Address	
Contact Number(s)	
Email address	

1 Introduction

Children are more vulnerable to infections due to their immature and developing immune systems. Schools, nurseries and childcare settings provide an ideal environment to increase this risk of infection due to shared environments, constant child to child interactions, shared toys, equipment and play activities and dependence on others to provide care. Young children may also be less aware of good hygiene practice, as they touch their noses and mouths often without hand-washing. Also there are often vulnerable young children in these settings. The spread of infection does not just stop at the school, nursery or childcare setting either; the children pass it on to their siblings, friends and family – out into the wider community as they go from place to place.

All those involved in the care of children should be educated about and aware of the risks of infections within their individual setting. Effective prevention of the spread of infection is most reliably achieved by education and awareness of all those involved in these activities.

The aims of these guidelines are:

- To provide advice for staff working in schools, nurseries and childcare settings to help minimise the risk of the spread of infection within their area
- To provide contact names and telephone numbers, should more detailed advice be needed in regard to communicable disease or infection prevention & control
- To provide easy reference on basic hygiene and the general standards of practice to prevent or limit the spread of infection, that all staff should be familiar with
- To provide specific information and guidance on the recognition and management of some common communicable infections
- To outline the action to be taken if an increase in illness is noted in the school, nursery or childcare setting

2 Who's who in infection control

2.1 Public Health England

The Consultant in Communicable Disease Control (CCDC) is responsible for the surveillance, control and prevention of communicable disease and infection. Local Health Protection Teams consist of CCDCs, and Health Protection Nurses/Practitioners (HPN/HPPs). The CCDCs and HPN/HPPs work closely with Environmental Health Officers from Local Authorities, Local Trusts, school nurses and doctors and Hospital nurses and doctors.

The Health Protection Nurse/Practitioner works closely with the CCDC to provide specialist support and advice on all aspects of the control of communicable disease to professionals, carers and patients throughout the West Midlands West area. The Health Protection Nurse/Practitioner also acts as a central point of contact on infection control in the community, including schools, nurseries and childcare settings. In the event of an outbreak or incident the Health Protection Nurse/Practitioner plays a leading part in the investigation and management of the incident.

The HPT is an important source of advice to the Local Authority on the prevention and control of infection in schools, nurseries and childcare settings and on the exclusion of children. The HPT can advise and support teachers, practitioners and parents in the event of infectious disease incidents. The HPT can liaise with the media in the case of infectious disease outbreaks or incidents.

The HPT should be informed of any **unusual increase** or occurrence of illness or absenteeism in schools, nurseries and childcare settings. Diarrhoea, vomiting, jaundice, skin rashes and cough are some of the symptoms that will be of interest to the HPT. The Head Teacher / setting manager should inform the HPT directly. The HPT may investigate if appropriate and give advice on any control measures or other action that is required. This would include advising on the period of time a child or a group of children should be kept away from the setting. The HPT can also help in the event of anxiety among staff, pupils and parents in relation to an infectious disease matter. Contact details for West Midlands West Public Health England Team, and Notification of infectious disease form, are available at:

<http://www.hpa.org.uk/AboutTheHPA/WhatTheAgencyDoes/LocalServices/WestMidlandsWestHPT/>

Settings registered with Ofsted on the Early Years and/or Childcare Registers must also inform Ofsted of any serious illness of any child in their care and of the action/s they have taken. They must also report any child suffering from a notifiable disease identified as such in the Public Health (Infection Diseases) Regulations 1988, and of any action taken and any food poisoning affecting two or more children looked after on the premises.

2.2 The General Practitioner

The General Practitioner is responsible for diagnosing, treating and advising individuals with an infectious disease. The GP has a legal obligation to notify the CCDC/proper officer of a notifiable infection.

2.3 The School Health Service

The school nurse will consider an individual pupil's susceptibility to infectious disease and advise the school accordingly. They will also assist in immunisation programmes.

The school nurse is a useful point of contact for teachers when there is a health problem, however in issues relating to an infectious disease, the HPT must be informed. The school nurse can advise about children who may be suffering from an infectious disease, may visit an absent child at home and play a part in the education of children about personal hygiene. He/she can carry out surveillance of infectious disease within the school including absenteeism, may prepare lists of names of children suspected of having infectious diseases, will contact the HPT if there is any suspicion of an infectious disease incident and may obtain immunisation and health details about individual children in the school.

When teachers identify a health problem within a school it is helpful if the school nurse is contacted with the following information: the numbers involved, the affected children's names and addresses, their age and class, the symptoms, the dates of onset of the illness and absence from school. If an outbreak of any infection is suspected the HPT must be informed immediately.

2.4 The Health Visitor and Practice Nurse

The Health Visitor provides a link for children who have not yet started school, and may be a point of contact for nursery, childcare setting or school staff when there is a query or a problem relating to an infectious disease or immunisation. The Health Visitor can advise about pre-school children who may be suffering from an infectious disease. The Practice Nurse may be a useful link with regard to a child's immunisation history, or she may have seen a child recently within the Practice.

2.5 The Environmental Health Officer

The Environmental Health Officer (EHO) is chiefly concerned with food borne and waterborne infections and may assist in the investigation of these infections when they occur within a school. EHOs have particular expertise in food and kitchen hygiene, cleaning schedules, disinfection and health and safety. Their links with other local authority departments can be particularly valuable.

2.6 Community Infection Prevention and Control Nurses

The Community Infection Prevention and Control Nurses (CICNs) work within local Trusts to provide training and advice on infection control to school nurses, health visitors, district nurses and other health professionals.

3 Sources of advice on the control of infection

Successful infectious disease control depends on the early recognition of cases and on prompt, appropriate action. Advice should be obtained as soon as an infectious disease problem is suspected. This advice is available from a variety of sources.

No handbook dealing with infectious disease can cover every situation that may arise. The key to success is to maintain good communication between all those involved in the control of infectious disease.

This handbook includes basic facts about the causes of infectious disease, how to control their spread, how to prevent them in the first place, whether exclusion from school or setting is necessary and if so for how long and what information to give parents.

When concerns arise about infectious diseases, the HPT should be the first point of contact. In schools, the school health nurse may offer advice but it should be remembered, that school health service staff may not examine children without parental consent and the responsibility for individual diagnosis and management lies with the child's General Practitioner.

Informing parents and allowing them to raise infection control issues is an effective way of preventing the spread of infection in schools nurseries and childcare settings.

Diseases do not always follow a predictable course and the advice given in this handbook may need to be tailored to suit individual circumstances.

3.1 Other sources of information

Other sources of information, advice, guidelines and recommendations on infectious diseases and their control can be found at the following websites:

Table 1 Website addresses

HPA site	Disease facts	https://www.gov.uk/government/organisations/public-health-england
Centres for Disease Control	CDC health topics	http://www.cdc.gov/az/
	Travel	http://wwwnc.cdc.gov/travel
	CDC immunisation programme	http://www.cdc.gov/vaccines/
Meningitis Research Foundation	Advice and information	http://www.meningitis.org/
National Meningitis Trust	Advice and information	http://www.meningitis-trust.org/
Immunisation	World Health Organisation	http://www.who.int/en/
	The Green Book (Immunisation against infectious disease)	https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book
	NHS immunisation information	http://www.immunisation.dh.gov.uk
	Information on MMR Dept of Health	https://www.gov.uk/government/publications/mmr-vaccine-dispelling-myths
British Liver Trust	Advice and information	http://www.britishlivertrust.org.uk/publications

4 The Law and infectious diseases

There are two main pieces of legislation in the UK for the control of communicable disease. These are the Public Health (Control of Disease) Act 1984 (as amended) and The Health Protection (Notification) Regulations 2010.

This legislation lists certain infectious diseases that must be notified or reported to the Proper Officer of the Local Authority who in the West Midlands West area is the CCDC.

The registered medical practitioner involved in the care of the patient is required to make the notification. See Appendix A for Full Notification Form.

Diseases notifiable (to Local Authority Proper Officers) under the Health Protection (Notification) Regulations 2010:

- Acute encephalitis
- Acute meningitis
- Acute poliomyelitis
- Acute infectious hepatitis
- Anthrax
- Botulism
- Brucellosis
- Cholera
- Diphtheria
- Enteric fever (typhoid or paratyphoid fever)
- Food poisoning
- Haemolytic uraemic syndrome (HUS)
- Infectious bloody diarrhoea
- Invasive group A streptococcal disease and Scarlet fever
- Legionnaires' Disease
- Leprosy
- Malaria
- Measles
- Meningococcal septicaemia
- Mumps
- Plague
- Rabies
- Rubella
- SARS
- Smallpox
- Tetanus
- Tuberculosis
- Typhus
- Viral haemorrhagic fever (VHF)
- Whooping cough
- Yellow fever

As of April 2010, it is no longer a requirement to notify the following diseases: dysentery, ophthalmia neonatorum, leptospirosis, and relapsing fever.

It is helpful if the school, nursery or childcare setting rings the HPT about cases. It is not unusual for the school, nursery or childcare setting information grapevine to be much faster than the official notification system! It will also ensure that, where necessary, rapid and effective action is taken to limit spread of infection and reduce its impact on the school, nursery or childcare setting.

Public health legislation gives certain powers to Local Authorities to control infectious disease. These powers apply to things, premises and people.

- For things (e.g. objects / equipment), there are powers to prohibit use, make them safe or destroy them
- For premises, there are powers to prohibit their use and make them safe

- For people, there are powers to exclude them from school or work, to detain them, to examine them, to immunise them and to prosecute them

Legal powers are only rarely required to control infectious diseases in schools, nurseries and childcare settings.

For example Regulation 3 of The Health Protection (Local Authority Powers) Regulations 2010 allows the Local Authority to obtain lists of the names and addresses of pupils at a school in which any pupil is suffering from a notifiable disease.

New Legislation - the Health Protection (Local Authority Powers) Regulations 2010 statutory instrument No 657, allows Local Authorities to exclude children or to close a school, nursery or childcare setting if there is a risk of contamination or a public health risk.

4.1 Common Law Duty of Care

Any school, nursery or childcare setting has a common law duty of care to children, staff and visitors.

E.g. If a head teacher/setting manager in consultation with the governors/registered person is of the opinion that members of staff, children or visitors are put at risk by the presence of a child who is suffering from a disease, then in order to discharge their duty of care to those others under common law and occupiers' liability, it may be necessary for the head teacher/setting manager to exclude that child.

4.2 Safeguarding

Concerns about the welfare of a child may arise from the repeated failure of a parent/carer to respond appropriately to requests about conditions such as head lice. Such concerns should be considered together with any available information about other areas of the child's life. E.g. in a case where a failure to deal with head lice is symptomatic of a wider neglect, it may be appropriate to consider child protection procedures.

4.3 Working with parents and the press

Public confidence in a school, nursery or childcare setting depends in part on the quality and appropriateness of communications with parents.

In matters of communicable diseases and illness amongst children and staff the head teacher/registered person has to make the final decision on questions such as:

- Should I write to all parents and say that a child has hepatitis?
- Is it effective to put a notice on the parents' notice board?
- Is a press statement necessary?

Head teachers/registered persons may have to respond differently to these questions because the circumstances of their settings and families are unique.

The head teacher/registered person will know the level of communication expected by parents and will have an idea of what may alarm and what may reassure.

It is important that any decision to communicate with parents reflects the need to:

- Keep parents informed
- Maintain parental confidence that the right decisions are being made by the school, nursery or childcare setting
- Avoid excessive amounts of information about illnesses at school being sent out to unworried parents
- Maintain confidentiality with regard to the affected child(ren) or staff member(s)

Similarly, each head teacher/registered person has to decide what should be communicated to the media.

Although it is not possible to be sure that what is said will be reported accurately by the media, it is better to say something and to assist the press rather than say “no comment”. A well-considered written statement may be most effective. The HPT can assist in the drafting of letters, which the school, nursery or childcare setting can send to parents. In serious cases the HPT may also issue a statement and it is important to ensure all communications provide consistent messages.

4.4 Medical confidentiality and communication

Head teachers/registered persons will wish to reassure staff, parents and children that an illness is being adequately dealt with, but like any personal health record, information about an ill child or adult is confidential and must be handled with the same regard to confidentiality. In outbreak situations, the HPT may require information on individual children or adults. Under the Data Protection Act 1998 - disclosures which are required by law [Where the disclosure is required by or under any enactment, by any rule of law or by the order of a court], personal data is exempt from the non-disclosure provisions.

Personal medical information about a child or a staff member that is provided to a head teacher/registered person is given in confidence and should not be divulged without permission. It is a general principle of the law of confidentiality that information given or obtained for one purpose should not be used for a different purpose without the consent of the provider of the information. The fact that the name of an ill child is already known to others and the media is no reason for a head teacher/registered person to breach confidentiality. General information, which will not identify a child, can be provided to parents, governing bodies and parent-teacher associations.

Medical enquiries of a personal nature from parents should be referred to their General Practitioner. The HPT will provide accurate, consistent and appropriate advice to minimise confusion amongst parents and staff.

The HPT may disclose information about a child in certain circumstances to prevent serious risk to public health or the health of other individuals. Each disclosure is considered on its merit after consultation with parents and other relevant persons.

5 How infection is spread

5.1 The respiratory route

Sneezing, coughing, singing or even just talking may spread respiratory droplets from an infected person to someone else close by. Droplets from the mouth and nose may also contaminate hands, cups, toys or other items and spread infection to others who may use or touch those items.

Staying away from settings when ill and good hygiene are important in preventing spread. However it is often difficult to control the spread of these diseases since people often spread the organisms during the incubation period before they themselves develop symptoms. Children may have little resistance to these infections and inevitably there is close contact. These factors increase the spread of infection.

Examples of infections spread by the respiratory route are the common cold, measles, chicken pox, scarlet fever, mumps, influenza, and meningococcal infection.

5.2 Intestinal (faecal-oral) route

The bacteria and viruses that cause these infections are present in the intestinal tract of affected persons who usually have diarrhoea but they may be symptom-less carriers. They spread in their faeces to others either directly on hands or indirectly via food or objects like toys or toilet flush handles. Spread can also occur as a result of animal vectors such as cockroaches and other pests. Viral gastro-enteritis can also be spread by environmental contamination when vomiting occurs since the vomit contains large numbers of infectious viral particles.

Examples of infections spread in this way are hepatitis A and gastroenteritis.

5.3 Direct contact

Infections of the skin, mouth and eye may be spread by direct contact by touching an infected area on another person's body or through a contaminated object such as a shared towel or hat. Some of these infections are associated with poor personal hygiene and may be associated with infection in other members of the family. Early medical treatment and close attention to hygiene will usually prevent the spread of these infections. Examples are scabies, head lice, ringworm and impetigo.

5.4 Blood borne virus infections

Blood borne virus infections are uncommon in young children. They include infection with HIV, and hepatitis B and C infections. For infection to occur there has to be transfer of blood or body fluids from an infected person to another person through a break in the skin such as a bite cut or injection or through splashes in the eye. Spread can also occur by sharing razors, toothbrushes or other personal equipment used by an infected person, which has possibly got their blood on it. These viruses cannot be passed by sharing food, utensils, baths or toilets or by touching. Spread can occur during sexual intercourse.

6 Infection control in schools, nurseries and childcare settings

6.1 General measures for the control and prevention of infections in schools, nurseries and childcare settings

Hand washing is the single most important part of infection control in schools, nurseries and childcare settings.

In order to safeguard the health and safety of children in schools, nurseries and childcare settings it is essential that good safe working practices are adopted at all times. **This involves the careful handling of all blood and body fluids that staff or children may be exposed to regardless of whether a risk of infection has been identified.** The following section describes practices and procedures which minimise the risk of the spread of infection .

6.1.1 Hand hygiene

Hand washing is the single most important part of infection control in schools, nurseries and childcare settings.

Hands become contaminated with bacteria and viruses that can cause infections. These are transferred from one person to another, either, directly, when hands touch mouths or indirectly, when contaminated hands touch food, drink or other items such as knives, spoons, working surfaces or toys. Hand washing breaks this chain of infection by diluting and washing away germs from the hands. Children and staff must properly and frequently carry out hand washing. Training and supervision is needed to achieve effective hand washing. This will also ensure that the habit of good hand washing is established early in life. Young children should be supervised to ensure that hand washing is carried out at the correct time and in the correct way. Hand washing needs continued reinforcement.

Hands should be washed:

- Before serving, preparing or eating food
- Before undertaking a first aid procedure
- After changing a nappy
- After cleaning up a contaminated area (e.g. vomit, urine or faeces)
- After visiting the toilet, **even if only to supervise a child**
- After playing in sand-pits
- After touching pets and animals

School nurses in schools, and practitioners in settings can carry out personal hygiene and hand washing education sessions. An effective hand washing technique is shown on the following page.

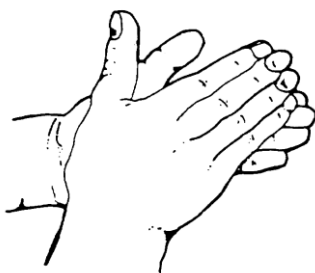
All surfaces of the hands must be washed. Each step consists of five strokes backwards and forwards. Ensure all parts of the hand are washed, paying particular

attention to the thumbs, fingertips, spaces between the fingers and the centre of the palm. These are the parts that are most often missed.

There should be ample access to hand washing facilities at all times. Comfortably hot running water, soap and a means of drying hands are essential. Warm air dryers are adequate but disposable paper towels are recommended. Shared cotton towels should not be used. Soap is best provided in wall-mounted liquid soap dispensers. Nailbrushes if used should be single use or disposable. Fingernails should be kept short.

Hand creams may be used after hand washing to reduce the risk of dryness and chapping - however pump dispensers are recommended.

Effective hand washing technique



1. Palm to palm



2. Right palm over left dorsum and left palm over right dorsum



3. Palm to palm fingers interlaced



4. Backs of fingers to opposing palms with fingers interlocked



5. Rotational rubbing of right thumb clasped in left palm and vice versa



6. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

6.1.2 Personal protective equipment (PPE)

The primary reason for using personal protective equipment is to reduce opportunities for cross infection/contamination. It is important to remember that using protective equipment does not prevent staff needing to adhere to the principles of good practice, including hand hygiene.

Protective equipment (e.g. gloves, aprons, eye protection) should be worn whenever there is a risk of exposure with blood or body fluids. This may include dealing with spillages.

Adequate supplies of protective equipment should be available within the area for use as required. This should include supplies of:

- Non-sterile latex /nitrile gloves
- General household gloves
- Single use disposable plastic aprons

Type of PPE	Indications for use
Aprons	<ul style="list-style-type: none"> • Single use disposable plastic aprons are advised to be worn for any direct contact with actual or potential blood, body fluids or chemicals • Aprons should be changed between each child and if necessary between dirty and clean tasks for the same child. • Aprons should be removed and disposed of immediately after the task is completed • Hand hygiene should occur after removal of the apron if there has been actual or potential contact with blood, body fluids or chemicals
Gloves	<ul style="list-style-type: none"> • Gloves are intended to protect the hands from becoming contaminated and to prevent the transfer of micro-organisms between individuals • Gloves should always be worn when there is actual or potential risk of contact with blood, body fluids or chemicals • Gloves are single use items only and must be changed between each child and if necessary between dirty and clean tasks for the same child • Gloves do not provide a substitute for hand hygiene. Hands should be cleansed after the removal of gloves. Gloves should not be washed or have alcohol or other sanitising gel applied to them
Eye protection	<ul style="list-style-type: none"> • Eye protection may be required if there is a risk of splashing or other contamination of the eyes/face • If eye protection is not single use it should be cleaned appropriately after use and stored dry • Hand hygiene should occur after the removal of eye protection

A risk assessment should be undertaken to identify whether personal protective equipment is required before a task is undertaken.

6.1.3 Handling of sharps

The use of sharps is limited in school, nursery and childcare settings and may only occur in special schools and in areas where there are children requiring healthcare interventions.

A sharp can be defined as any item that is capable of penetrating the skin and which may be contaminated with blood or other body fluids, e.g. needles, blades (BMA, 1990). In areas where sharps are used, it is vital that safe sharps handling and disposal occurs to prevent the risk of blood borne virus transmission (DH, 2009).

Sharps containers should be used and should comply with UN3291 and BS7320. All sharps containers should:

- Have a handle
- Have a closure device which remains closed if the container is dropped
- Be resistant to penetration
- Be yellow
- Be marked with the words 'Danger – contaminated sharps, destroy when full'
- Be marked to indicate 70-80% full

If sharps are handled within an area then the following indications apply:

- The person using the sharp is responsible for handling the device in a safe manner and for its safe disposal
- Sharps must not be passed directly from hand to hand and handling should always be kept to a minimum
- Do not re-sheath needles by hand
- An approved sharps container must be available at point of use
- Dispose of syringes and needles as one unit where possible
- The sharps container must not be overfilled
- Sharps containers should be kept away from children and the general public
- The temporary closure should be used when the bin is not in use
- The container must be locked and labelled prior to disposal

Should an injury occur due to a sharp, the procedure in section **6.2.4** should be referred to immediately.

6.1.4 Disposal of waste

Schools nurseries and childcare settings may produce differing types of waste. All waste generated should be segregated appropriately into:

- Domestic waste (household waste) – black bag
- Offensive waste (used nappies/pads, gloves, apron or sanitary waste) – yellow bag with black stripes
- Some areas may have yellow or orange bags in use for hazardous or infectious waste

Incontinence pads, stoma bags and urine containers present a low level of risk of spreading infection but disposal can present problems. The contents of these items should be flushed down the toilet where possible or disposed of via a sluice or purpose built disposable unit. Some disposable items may be macerated (if equipment is available) before flushing.

Soiled surgical dressings, swabs and other waste from treatment areas should be disposed of as offensive waste. This is sealed in a yellow and black striped plastic clinical waste bag and stored securely and labelled prior to collection by a clinical waste disposal contractor. Collections should be made every week. Syringe

needles, cartridges, broken glass and any other disposable sharp instruments or items should be stored in containers complying with British Standard 7320 and UN 3291. Containers should be sealed when $\frac{3}{4}$ full.

Personal protective equipment, e.g. gloves and aprons should always be worn when handling waste.

External storage should be inaccessible to children, the general public, and to pests. Locking bins are recommended.

Staff handling waste should take care to prevent injury or transmission of infection to themselves or others.

Advice and guidance on the management of waste in schools, nurseries and childcare settings may be obtained from the local Health Protection Unit.

For settings that produce waste generated from providing care for children with healthcare needs please see Appendix C.

6.2 Preventing the spread of blood borne virus infections

6.2.1 General/universal precautions for preventing the spread of blood borne virus infections

Practice good basic hygiene with regular hand washing.

- 1 Do not allow sharing of razors or toothbrushes (or anything which might cut the skin or damage the gums and cause bleeding). Infection control guidance on cleaning teeth in schools, nurseries and childcare settings is attached in Appendix B
- 2 Cover wounds or skin lesions with waterproof dressings
- 3 Avoid contamination of person and clothing with blood and body fluids
- 4 Disposable gloves and aprons should be worn when dealing with blood and body fluids
- 5 Avoid puncture wounds, cuts and abrasions in the presence of blood
- 6 Know what to do if there is an injury or blood exposure incident
- 7 Clear up spillages of blood promptly and disinfect surfaces (ensure gloves and aprons are worn)
- 8 Dispose of waste safely. Sanitary towels and tampons should be placed in a sanitising bin or flushed down the toilet. Other items can be disposed of as domestic waste after first sealing inside a plastic bag
- 9 If there is a risk of splash to the eyes, protective goggles should be worn

6.2.2 Blood spillages: what to do

Clean up spillages of blood or body fluids **however small** immediately. If there is broken glass, never pick it up with your fingers, even if wearing gloves. Use a paper or plastic scoop.

FOR ALL SPILLS - gloves should be worn and lesions on exposed skin covered with waterproof dressings.

Small spots of blood or small spills

- Contamination should be wiped up with a paper towel soaked in freshly prepared hypochlorite solution (e.g. household bleach) containing 10,000 ppm available chlorine (see dilution chart in Section **6.5.2**). This solution must be stored safely out of reach of children, within a labelled child-proof container at all times
- Towels and gloves should be wrapped in a plastic bag before disposal in a rubbish bin
- Wash hands

Larger spills

- Gloves should be worn and lesions on exposed skin covered with waterproof dressings
- If splashing is likely to occur while clearing up, other protective equipment such as a disposable plastic apron should be worn
- Liquid spills should be covered with chlorine producing (sodium dichloroisocyanurate/NaDCC) granules and left for at least two minutes before clearing up with paper towels and/or a plastic dustpan. Do not use on urine since chlorine may be released
- Alternatively, the spill may be covered with paper towels and the contaminated area carefully flooded (covered) with hypochlorite solution containing 10,000 ppm available chlorine (see dilution chart in Section **6.5.2**). This should be left for at least two minutes before attempting to clear up. Hypochlorite solutions (e.g. household bleach or Milton) may be replaced by solutions of sodium dichloroisocyanurates prepared from tablets (e.g. Sanichlor or Covchlor) according to the manufacturer's instructions. This solution must be kept in a labelled child-proof container and stored safely out of reach of children at all times.
- Towels and gloves should be wrapped in a plastic bag before disposal in a rubbish bin
- Finally, the area should be washed with hot water and detergent and allowed to dry

Note:

- There may be a release of chlorine from the treated area when hypochlorite or other chlorine containing compound is applied. Ventilation of the area will be necessary
- As the application of sodium hypochlorite may discolour carpets and soft furnishings, spillages should be cleaned with warm soapy water and steam cleaned
- Splashes of blood or body fluid on to the skin, eyes or mucous membrane (i.e. mouth), should be washed off immediately with soap and water
- If the clothing of a First Aider becomes contaminated with blood it should be sponged with cold water using a disposable cloth then laundered separately in a hot wash

6.2.3 Cuts and abrasions

All staff should ensure that wounds or moist skin conditions are covered with a waterproof dressing (without visible air holes). Change the dressing at least daily.

Under Health and Safety legislation, such dressings must always be available in the first aid box. Those involved in food preparation must use blue dressings.

6.2.4 Blood borne viral infections: action after exposure

The risk of spread of Human Immunodeficiency Virus (HIV) infection and Hepatitis C (HCV) infection is very low.

The risk of Hepatitis B (HBV) transmission following an exposure incident depends on the nature of the exposure, whether it is significant or not. Significant exposures include:

- An injury involving a contaminated needle, blade or other sharp objects
- A bite, which causes bleeding or other visible skin puncture
- Blood contaminating non-intact skin or eyes

Remember:

- These viruses do not cross intact skin. Exposure to vomit, faeces and un-contaminated sharp objects poses no risk
- Transmission is not known to have occurred as a result of spitting or urine splashing
- The proportion of the population in the West Midlands West area who are carriers of these viruses is very low

Following exposure the following action is recommended:

- The site of exposure (wound or non-intact skin) should be washed liberally with soap and water but without scrubbing. Eyes and mouths should be flushed with large amounts of water. Puncture wounds should be allowed to bleed freely but should not be sucked
- The incident should be documented and a full accident record prepared

The exposed person should be referred to the local accident and emergency department without delay.

6.2.5 Preventing spread of blood borne infections during sport

The risk of spreading these infections during sport is very low.

The following measures are recommended:

- Cover all skin lesions to prevent leakage of blood or fluids
- Injuries with bleeding should be treated off the field. The sports person can be permitted to resume when bleeding has been stopped and a secure waterproof dressing covers the wound
- First Aiders should wear disposable examination gloves when attending to injuries involving bleeding
- There is no reason for routine screening of sports people for blood borne viral infections such as HIV or HBV
- Generally sports people with blood borne viral infections can participate in most sports. Medical advice should be sought

6.2.6 Bites and scratches from pets and humans

Domestic animal and pet bites and scratches are not uncommon injuries. The mouths and claws of animals carry bacteria, which may cause bites and scratches to become infected.

The human mouth harbours a large number of organisms. Human bites are more likely to become infected.

Rabies is not present in the United Kingdom, except in bats. This is a similar virus to classical rabies

Action:

The wound should be cleaned thoroughly with soap and water.

Puncture wounds should be allowed to bleed freely but should not be squeezed or sucked.

Extensive bites and scratches, particularly deep puncture wounds, need medical attention. In the case of a human bite that has broken skin refer to section **6.2.4**.

6.2.7 Discarded hypodermic needles in and around schools, nurseries and childcare settings

Injuries from discarded hypodermic needles around school, nursery or childcare setting playgrounds are of concern. The risk of contracting a blood borne infection however is very low. There is no report of a child ever having acquired an infection in this way.

Action:

- Carefully, pick up and retain the needle by a non-touch method and retain it for inspection
- If there are several needles, inform the Police and the Environmental Health Department and stay on guard until they arrive
- Children should be warned about the dangers of playing on rubbish heaps
- Vigilant inspection of grounds and surrounding areas should be carried out as a matter of routine
- Children should be warned not to touch any needle or a sharp medical object but to report to a teacher/childcare practitioner at once

6.3 Enteric precautions to prevent gastrointestinal infections

Enteric precautions, which will minimise spread of infections by the faecal-oral route, comprise:

Hand washing

Thorough hand washing with soap in warm running water and drying is the most important factor in preventing the spread of gastro-intestinal infections. Relatives and other carers must wash their hands after touching patients, their bedding, clothing, or sick room equipment and again before preparing or serving food. Children and attendants must always wash their hands after using the toilet and before meals. Towels must not be shared.

Disposal of excretions and soiled materials

At home, people should normally use a flush toilet. If urinals or bedpans have to be used attendants should wear disposable gloves and wash their hands thoroughly after attending the patient.

Disinfection

Toilet seats, flush handle, wash-hand basin taps and toilet door handles should be cleaned at least daily or more often depending on how often they are used. Toilet seats should be wiped after use with a hypochlorite (bleach based) solution. This solution must be stored out of reach of children, in a labelled child-proof container at all times.

Alternatively, alcohol based wipes may be used on seats and other hard surfaces. These precautions are especially important in schools, nurseries and childcare settings. Bedpans and urinals should be processed in a washer disinfectant, or a macerator should be used. If this is not available they should be emptied and sluiced using a brush if necessary. A suitable disinfectant should be used and contact times should be in accordance with manufacturers' recommendations.

Education

Everyone should be instructed in personal hygiene, and in the hygienic preparation and serving of food. This information should be reinforced if there is an outbreak of gastrointestinal infection.

6.3.1 Advice for those with gastrointestinal infections at home

- Stay away from others until symptoms have stopped and you are symptom free for 48 hours
- Do not prepare food for other people if you have diarrhoea and vomiting. Ideally wait until you have been better for 48 hours. Avoid handling food that is going to be eaten by other people
- Soiled clothing and bed linen should be washed in a domestic washing machine with a hot cycle. If the amount of soiling is excessive as much faecal material as possible should be flushed away into the toilet bowl. However a pre-wash cycle is preferable
- Clean toilet bowls, seats, flush handles, doors and handles and taps frequently with a suitable household cleaner and wipe down with a bleach based disinfectant afterwards. Follow the manufacturers' instructions, store disinfectants out of children's reach. Wear rubber gloves when cleaning the toilet but don't use them for anything else
- Set aside a towel for your own personal use at home

6.3.2 Looking after someone with diarrhoea and/or vomiting

- If possible the affected individual should use the toilet as usual. If a commode or bedpan are used these should be carefully emptied in the toilet bowl after use. Hands should be washed after attending to the affected individual.
- Soiled bedding should be washed on a hot washing machine cycle. Use a pre-wash cycle if available. Rubber household gloves should be worn if possible. If at a childcare setting any soiled clothing should be placed in a plastic bag, sealed and sent home for washing. Do not hand sluice.

- Different brands and types of disinfectants can be used, but bleach is recommended for hard surfaces. The disinfectant should be diluted according to the manufacturer's instructions (see dilution chart in section **6.5.2**). If using bleach remember that it can remove the colour from fabrics and carpets and can burn the skin. **Keep disinfectants out of reach of children at all times and ensure they are within a childproof container.**
- Toilet seats, flush handles, wash hand basin taps and toilet doors and handles should be washed down with detergent and water at least twice a day. In an outbreak of diarrhoea and/or vomiting, cleaning should take place more frequently, and always after use by the known infected person. Wear rubber household gloves. Commodes should be emptied into the toilet bowl and washed with disinfectant and rinsed. If cleaning up diarrhoea or vomit the surface should be washed with detergent and water, disinfected, rinsed and allowed to dry. Cloths used for cleaning should be single use only. The bath should be rinsed thoroughly and disinfected after use. After loading clothing into the washing machine the outer-surfaces should be wiped down with disinfectant. This is particularly important if the machine is in the kitchen.

Take care when changing nappies or clearing up after someone who has been sick or had diarrhoea.

6.4 Managing infectious disease incidents

The responsibility for investigating and controlling such incidents lies with the PHE and Environmental Health Department. The initial investigation is carried out by the Health Protection Team which would include the CCDC and a decision is made on further action. The HPT will attempt to ensure that there is co-operation between schools, nurseries, childcare settings, parents, the local authority and health services so that the outbreak can be controlled as quickly as possible with the minimum of disruption and anxiety. In some situations it may be necessary to convene a meeting to discuss the management with other agencies.

Settings registered with Ofsted on the Early Years and/or Childcare Registers must also inform Ofsted of any serious illness of any child in their care and of the action/s they have taken. They must also report any child suffering from a notifiable disease identified as such in the Public Health (Infection Diseases) Regulations 1988, and of any action taken and any food poisoning affecting two or more children looked after on the premises.

6.4.1 The Outbreak Control Team

The CCDC will convene an outbreak control team if the outbreak warrants specific action. The CCDC, an environmental health officer and e.g. the head teacher or setting manager would be core members. The team will meet as often as necessary. Generally responsibilities will be shared.

6.4.2 Immediate action in an outbreak: guidance for schools, nurseries and childcare settings

The HPT should be notified when an outbreak is suspected. The HPT will provide advice on management of the outbreak and further documentation and guidance. This may include the Norovirus Toolkit: a set of resources for staff in schools, nurseries and childcare settings.

Isolating cases and minimising the spread of infection

- Parents of children that are affected should be contacted and advised to collect their child from the school, nursery or childcare setting. Affected members of staff should also be sent home
- Affected children should be isolated from other children until collected by a parent
- Staff and children suffering from diarrhoea and vomiting should not return to school, nursery or childcare setting until they have been symptom free for 48 hours
- As far as possible, the movement of staff and children between rooms should be restricted
- As far as possible, joint group activities e.g. assembly, should be stopped. Visits out of the school, nursery or childcare setting must be stopped immediately
- Groups visiting/using the school, nursery or childcare setting must be stopped immediately
- People visiting the school, nursery or childcare setting e.g. social workers, welfare officers and nurses must wash their hands on entry and exit to the premises and after contact with each child
- Food prepared on site must be for consumption at lunch and break times only and prepared by catering staff in a school, or appropriate staff in other settings
- Food brought into the setting must be consumed by that person and returned home or disposed of if not eaten. A risk assessment for communal sharing of food must be undertaken

Hand washing

- Good hand hygiene should be enforced for all children and staff
- A hand-washing programme should be put in place, which also encourages children to wash their hands at the start of the day and when returning home.
- Liquid soap should be available for use via a soap dispenser
- There should be a plentiful supply of paper towels, for hand drying

Universal precautions

- Disposable aprons and gloves should be worn when cleaning up vomit, changing nappies or toileting a child
- After carrying out the procedure they should be removed, disposed of and hands washed
- After cleaning a child's nose or mouth, used tissues should be disposed of immediately, into a foot operated lidded bin containing a bin liner (bin liners should be changed at least daily) and hands must be washed

Laundry

- Soiled children's clothing is sealed in a plastic bag to go home.

Cleaning

- Frequency of cleaning toilet must be increased
- Touch points (hand contact surfaces e.g. taps door handles, door frames, toilet flush handles and work surfaces/table tops) are cleaned after or during each break time with a chlorine based disinfectant diluted to 1,000 parts per million (see dilution chart in Section **6.5.2**). Examples of chlorine based disinfectant include: Chlorox, Bleach, Milton or other sterilising fluid, Presept, Sanichlor, Haz-tab, Biospot, Titan
- Potties should be thoroughly disinfected after use
- Carpets that have been vomited on should be steam cleaned

Play equipment and play activities with children

- Toys should be cleaned and washed and where appropriate disinfected with Milton or other sterilising fluid. Dressing up clothes should be laundered if visibly soiled
- Sand and water play must stop until after the outbreak is over and the sand thrown away
- Items such as play dough and Plasticene must be thrown away and not used until after the outbreak is over
- Cooking and other food preparation activities should not occur during an infection outbreak

Roles and responsibilities during an outbreak

Health Protection Team	Organisational arrangements Investigating the incident Advising on control measures including exclusion Information for parents and staff Dealing with the media Keeping local GPs informed
Outbreak team	Produce a report reviewing the outbreak and the lessons learned
EHO	Reviewing hygiene Inspecting kitchens and toilet accommodation
School including contractors and school health nurse	Providing names and addresses of children Communicating with children, parents and governors Sending letters to parents Hosting a parents meeting or school assembly Hygiene and hand washing education Supervision of hand washing School/nursery/childcare setting cleaning
Local Authority	Practical support for school/nursery/childcare setting Help with media enquiries Keeping local politicians informed Support with longer-term issues arising out of the outbreak, such as repairs etc.

- Formal written protocols to ensure regular and frequent cleaning of school, nursery or childcare setting toilets, cubicles, changing areas and rooms, and for dealing with environmental contamination due to accidents are essential. Attention should be paid to the cleaning of toys and equipment, especially during outbreaks, when consideration should be given to suspending play with water, sand, play-dough and plasticene.
- A child with diarrhoea should be excluded from school, nursery or childcare setting at least until symptom-free for 48 hours. Microbiological clearance is unnecessary where appropriate hygiene measures have been instituted in schools, nurseries and childcare settings but may be recommended for other causes of gastroenteritis.
- In outbreaks, there is little to be gained from routine screening of asymptomatic children in the school, nursery or childcare setting since, with good hygiene, they pose a negligible risk to others. Children with diarrhoea should be identified and excluded from school, nursery or childcare setting. The staff, children and household contacts should be offered hygiene advice. Children who are identified by PHE/GP/Environmental Health as asymptomatic excretors need not be excluded routinely if good hygiene can be practised, but hygiene advice must be given to the child, parents and staff. This advice can be obtained from HPT/GP/Environmental Health. Staff in schools, nurseries and childcare settings should be made aware that children in nappies who are symptomless excretors pose an increased risk of transmission of infection. Changing nappies should be

carried out in an area separate from other children, and on surfaces, which may be cleaned easily. Staff must wash their hands thoroughly after changing nappies, and surfaces must be cleaned frequently.

- The closure of schools, nurseries and childcare settings to control outbreaks of infection is seldom indicated. The possibility that closure may increase transmission in the community should be borne in mind. However, local authorities should ensure that schools, nurseries and childcare settings are inspected and that there are adequate toilet facilities with toilet paper, hot water, soap and hand drying facilities, and that toilet and environmental cleaning and disinfection programmes are in place.

6.4.3 Personal protective clothing

Refer to section 6.1.2 Personal protective equipment

6.4.4 School, nursery or childcare setting closure

It is very rare that a school, nursery or childcare setting is closed to control an outbreak of communicable disease. If circumstances arise in which closure is indicated, the head teacher/registered person must discuss this with the local authority/Governor support/Ofsted.

6.5 Using detergents and disinfectants

Cleanliness and general hygiene are essential in limiting the spread of infection in schools, nurseries and childcare settings. Some general points are:

- Cleaning surfaces with hot water and a detergent will usually remove soiling and reduce bacteria and viruses to safe levels. The school, nursery or childcare setting retains responsibility for the health and safety of children and staff. This principle also applies to the provision of meals, which may be contracted to an outside catering firm.
- Detergents are chemicals, which make grease and dirt particles soluble in water and easily removed from dirty surfaces. Washing-up liquids and commercial floor-cleaning compounds are detergent based. Rubber household gloves should be worn.
- Cleaning should be undertaken at least once a day in bathrooms and toilets and should include attention to taps, flush handles, toilet seats and door handles.
- Disinfectants do not kill all germs. However if a disinfectant is used correctly it will reduce germs to safe levels. Use of disinfectants should be confined to areas and surfaces where there is not only a danger of the presence of germs but also where conditions exist for their multiplication. Surfaces or areas which are to be disinfected must first be cleaned. Germs can survive in faeces, vomit, blood and secretions despite the use of a disinfectant. Thorough cleaning prior to disinfection gives the disinfectant the best chance of destroying germs. Disinfectants take time to work and sufficient contact time should be allowed

before wiping or rinsing the disinfectant away. Disinfectant should not be used indiscriminately.

- A policy defining the use of disinfectants must be in place. Generally manufacturers' directions should be followed. It is emphasised again that thorough cleaning with water and detergent is all that is necessary in most cases.
- Disinfectants vary in price, and the most expensive are not necessarily the best. The advice of staff of the Environmental and Development Services Departments should be sought if there are doubts about school, nursery or childcare setting regarding cleaning and use of disinfectants.

6.5.1 Cleaning and disinfecting agents

	Definition	Chemical agent	Examples of trade names
Detergent	A cleaning agent used to remove grease, dirt and food. Used for general cleaning	Various	General Purpose Detergent, e.g. Washing Up Liquid
Disinfectant	A chemical that reduces the numbers of micro-organisms to a level at which they are not harmful, but will not usually destroy spores Check that surfaces are free of grease, dirt and food before using a disinfectant	Hypochlorite Solutions (always add bleach solution to water rather than vice versa)	Household Bleach Chloros Domestos Milton
		Sodium dichloroisocyanurates (NaDCC) tablets/granules These solutions are usually more effective on viruses than liquid hypochlorite (bleach) preparations and can be useful in outbreak situations	Sanichlor Presept Actichlor Covchlor Haz-Tab Bio-spot
		Chlorxylenols	Dettol Ibcol
		Pine Oil – relatively ineffective against many organisms	Shop branded pine disinfectants
		Alcohol 70% May also be used for skin disinfection in certain preparations	Sterets Mediswab Alcowipes Azowipes
Sanitiser	A two-in-one product that acts as a detergent and a disinfectant	Various but must meet BS EN 1276:1997 and BS EN 13697:2001	Suma Bac D10 K2 Dettol Surface Cleaner Titan
Antibacterial	A compound or substance that kills or slows down the growth of bacteria	Various	Shop branded antibacterial items include soaps, cleaning products and first aid items
Antiseptic	A chemical used to kill microbes on body surfaces Not effective for environmental decontamination	Triclosan	Solarcaine
		Chlorhexadine	Hibiscrub Hibiclens Hibitane Savlon Hibisol
		Iodine and Iodophors	Betadine
		Cetrimide	Savlon Stericol

N.B. Disinfectants, sanitisers, antibacterial and antiseptic products must be kept within a labelled child-proof container and stored out of reach of children at all times.

6.5.2 Dilutions of hypochlorites and other disinfectants

Prior to using Hypochlorite solutions, surfaces/equipment should be physically cleaned with hot water and General Purpose Detergent (GPD) except in the case of blood spillages

Usage	Dilution of stock solution	Example dilution	Available Chlorine	
			%	Parts per million (PPM)
	Undiluted solution	No dilution required	10*	100,000
Blood spillages	1 in 10	One part hypochlorite to 10 parts water, e.g. 10 ml hypochlorite in 100ml water	1.0	10,000
Environmental disinfection	1 in 100	One part hypochlorite to 100 parts water, e.g. 10 ml hypochlorite in 1000ml (1 litre) water	0.1	1,000
Infant feeding utensils, catering surfaces and equipment	1 in 800	One part hypochlorite to 800 parts water, e.g. 10 ml hypochlorite in 8000ml (8 litres) water	0.0125	125

*Approximate value of some brands, e.g. Chloros, Domestos

ALWAYS CHECK DILUTIONS WITH PRODUCT INSTRUCTIONS. IF IN DOUBT, FOLLOW MANUFACTURER'S GUIDELINES.

USE PREPARATION AS SOON AS IT IS MADE UP.

ALWAYS KEEP DILUTED SOLUTIONS IN A LABELLED CHILD PROOF CONTAINER.

CORRECT DILUTIONS MAY BE OBTAINED BY USING A LABELLED MEASURING CONTAINER, E.G. KITCHEN JUG, DESIGNATED FOR THIS PURPOSE ONLY.

6.5.3 Cleaning of specific equipment in schools, nurseries and childcare settings

Item	Cleaning Guidance	Comments
Ball pools and pits	Visually check before and after each use. It is recommended that cleaning occurs every three months as a minimum, using hot water and detergent and allowing items to dry thoroughly. Cleaning must occur promptly after any soiling with blood or other body fluids	It is suggested that balls are placed in a mesh bag, washed in hot soapy water and dried thoroughly before replacing
Books	Inspect weekly and surface wipe where possible	Look for signs of body fluids, infestation, damp and mildew and discard if soiled. Leave damp or wet books out of use until dry
Cool packs used following a bump	After use wipe with a detergent solution and ensure they are dry before storage	These should be stored in a plastic tray/container within the fridge to ensure they remain separate from food items
Dressing up clothes	Ensure dressing up clothes are visibly clean and laundered on a regular basis at a frequency that is appropriate to the amount of use they receive, at the temperature recommended on the label	
Equipment in multi-sensory rooms, (e.g. optical displays, bubble tubes, etc)	All surfaces should be wiped weekly with hot water and detergent solution or a multi-surface detergent wipe and allowed to dry	Always refer to manufacturer's guidance for specific recommendations. Water in non-sealed bubble tubes should be changed in accordance with manufacturer's guidance or on a weekly basis
Food play	The use of dried or cooked products for play should be well supervised to ensure the items are not consumed. All food should be disposed of after play. Hand hygiene is recommended both before and after food play	Dried products, e.g. pasta, rice, used for food play should be stored in pest proof containers which are labelled as food play. They should not be stored in kitchen areas
Outdoor toys	Check visibly before use to ensure they are visibly clean. If soiled, they should be cleaned with hot water and detergent and left to dry thoroughly before re-use	Equipment stored over winter months should be cleaned and dried before storage
Paddling pools	Plastic or inflatable pools should be emptied, cleaned with hot water and detergent and stored dry after use	Children who have diarrhoea and/or vomiting should not be allowed in the pool whilst symptomatic and until 14 days after their symptoms cease. If soiling occurs during use the pool should be taken out of use and cleaned immediately

Item	Cleaning Guidance	Comments
Play dough	Ensure hand hygiene before and after using play dough. Play dough should be changed on a monthly basis and more frequently if contamination occurs between these times	Any play dough that is mouthed should be disposed of immediately. Staff should ensure that play dough remains in a good condition, free from staining, dry bits and other debris *During outbreaks of diarrhoea and/or vomiting the use of play dough should be suspended until 48 hours after the symptoms end. It is recommended that play dough used prior to the outbreak is disposed of
Play sand	Play sand should be covered when not in use with a ventilated lid. Toys used within the sand should be washed and dried thoroughly at the end of the session and stored separately from the sand. Children should be supervised to ensure hand hygiene occurs before and after sand play. Skin lesions on hands of staff or children must be covered; if this is not possible the person should not participate in this activity. Sand should be changed every three months or more frequently if contamination occurs. Sand that falls on the floor must be discarded and not put back in the sand pit	*During outbreaks of diarrhoea and/or vomiting the use of play sand should be suspended until 48 hours after the symptoms end. It is recommended that play sand used prior to the outbreak is disposed of
Soft play equipment	All surfaces should be wiped weekly with hot water and detergent solution or a multi-surface wipe and allowed to dry. Always refer to manufacturer's guidance for specific recommendations	Spillages of blood and other body fluids should be promptly removed (see Section 6.2.2 on spillages)
Storage of toys	Toys should ideally be stored in rigid, washable and preferably lidded containers. Boxes should be washed with hot water and detergent or wiped with a multi-surface detergent wipe and dried thoroughly before use	Ideally non-floor standing toys should be stored off the floor to allow for ease of floor cleaning and to minimise the risk of contamination occurring
Water play	Containers for water play must be cleaned thoroughly and emptied/freshly filled each day. Toys used in water play should be non-porous and cleaned after each use (toys that are hollow or sponge should not be used). All toys and containers should be dried thoroughly after use and stored dry. Children should be supervised to ensure hand hygiene occurs before and after water play. Skin lesions on hands of staff or children must be covered; if this is not possible the person should not participate in this activity	*During outbreaks of diarrhoea and/or vomiting the use of water play should be suspended until 48 hours after the symptoms end. Water play toys and equipment should be cleaned before they are re-used

6.6 Nappy and potty hygiene

Nappy changing

It is essential that any school, nursery or childcare setting that has children in nappies has the correct facilities to make sure that nappy changing can take place in a designated, appropriate area without being a risk to others.

General issues

- The nappy changing area and surfaces should be away from food preparation or storage areas and tables used for play or serving food should not be used for this purpose. Ideally staff who change nappies should not be involved in the preparation of food. **Where this is unavoidable (e.g. childminder setting) rigorous hygiene precautions must be in place prior to food preparation**
- Within the nappy changing area designated hand washing facilities should be available and hands should be washed before and after each child
- The nappy changing mat/table should be wiped after each child and at the beginning and end of each day. As a minimum requirement, the surrounding area should also be cleaned daily and whenever visible contamination occurs
- Where available, disposable paper should be placed on the mat/table to minimise possible contamination of the area during nappy changing. This should be disposed of along with the nappy after each child

Nappy changing equipment

- A supply of disposable gloves should be available and used appropriately for each child. Aprons are also recommended
- Nappy creams, lotions, etc. should be labelled with the child's name and must not be shared between children
- Equipment used for nappy changing should be clean and in a good state of repair. Mats should be checked frequently (at least weekly) for breaks or tears in the covering. Mats used on the nappy change table need to be intact without splits, have a smooth surface and be in good condition to enable effective cleaning as germs can survive in holes, creases, pleats, folds or seams
- Clean nappies should be stored within reach, but stored so as not to contaminate them with nappy changing activities in the area

Disposal of nappies

- Used nappies should be disposed of in a foot operated, lidded pedal bin that is lined with plastic bags or in specific nappy disposal units

Use of potties

- Potties should only be used in a designated area (e.g. in toilet or nappy changing areas), away from play facilities and away from where food and drinks are prepared or eaten/drunk
- Hand washing facilities should be available for use by child and staff member

- After use, the contents of the potty should be disposed of down a toilet. The potty should then be washed in hot soapy water in a sink (ideally used only for this purpose) and then dried thoroughly
- Staff should wear gloves and preferably aprons whilst emptying and cleaning potties. Hands should be washed when gloves are removed

6.7 Cooking activities with children

The prevention of food borne illness involves attention to hygiene, proper handling and preparation of food, and care during food storage and distribution. Food should not be prepared by individuals if they have a disease likely to be transmitted through food (e.g. gastroenteritis, hepatitis A or norovirus).

If food preparation/cooking occurs within the school, nursery or childcare setting, the following key points should be considered to ensure the risk of infection is minimised:

- Children who have had diarrhoea and/or vomiting in the last 48 hours should be excluded from the setting
- If there has been an outbreak of gastrointestinal infection within the setting, activities involving food preparation or cooking should be suspended until 48 hours after the symptoms of the last case have stopped
- Children and staff must thoroughly wash and dry their hands before handling food. After handling raw products, hands should be washed and dried thoroughly

6.8 Recreational and therapeutic pools

The common infections associated with pools are:

- Skin, ear and eye infections can occur 1-2 days after use of a pool
- Fungal infections and viral plantar warts
- Gastrointestinal infections such as giardiasis, cryptosporidiosis, hepatitis A and viral gastro-enteritis. hepatitis A and giardia from swimming pools are uncommon

A child who is not well should not use a recreational pool. In general if a child is well enough to attend school, nursery or childcare setting they can use a communal pool.

6.9 Pets

Animals can potentially carry infections and therefore guidelines should be in place to protect staff and children from these risks. Bacteria and viruses can be present on skin, hair, feathers and scales of animals and even fish have the potential to carry bacteria. The mouths and claws of animals can carry bacteria which can cause infections in the flesh around bites and scratches, and eventually, if left untreated, may spread into the bloodstream. The value of children looking after and having access to pets is obviously recognised, however it is important that the following guidelines are followed at all times:

- Pets should be healthy and free from parasites. They should be regularly checked by a vet, especially if any form of infection/infestation is suspected and

be immunised and wormed as required. When an animal is ill they are more likely to be irritable because of pain or illness and so more likely to bite or scratch.

- Bedding, housing, litter trays and feeding bowls should be kept clean. They should not be stored or cleaned in food preparation areas and they should be kept away from children. All staff should be aware of the need to wear gloves when handling animal waste, emptying litter trays and cleaning cages.
- Hands should be washed after handling animals or cleaning cages.
- Young children should be supervised when playing with animals and be discouraged from putting their faces close to animals.
- Particular care should be taken with reptiles and caged birds.
- With caged birds, wet the floor of the cage before cleaning it to avoid inhalation of powdered, dry bird droppings.
- Children should not help to clean bird cages, fish tanks or other animal cages or pens.
- All waste should be disposed of into a plastic bag and placed directly into the outside waste bin for collection.
- Pet food should be stored safely away from general food. Dried pet food should be stored in pest-proof containers to reduce the risk of infestation.
- Pregnant staff or children should not handle pet litter or litter trays.
- Pets/animals must not be allowed to contaminate sand pits, soil, pot plants and vegetable gardens.
- Fish tanks should be cleaned on a regular basis by staff, wearing gloves. Scratches from fish and other marine organisms such as coral can cause unusual infections. If an injury is caused by a fish, or a wound is contaminated by sea, pond or aquarium water and becomes infected, it is important to get medical advice.
- A risk assessment should be undertaken on the keeping of reptiles, e.g. terrapins, iguanas, lizards, etc, in a school, nursery or childcare setting as all species can carry the salmonella bacteria. Other animals that can carry infections include ferrets and birds of the parrot family. Wild or dangerous animals should not be kept.
- Fleas can occasionally cause problems. They infect both animals and humans, causing irritation and inflammation of the skin. It is recommended that animals, including their bedding and immediate environment, are treated regularly.

7 The child who is unwell in a school, nursery or childcare setting

Children often become ill in a school, nursery or childcare setting or early symptoms of an illness at home become more pronounced during the course of the day. Children may not complain of feeling unwell.

7.1 Management of the sick child

While symptoms vary according to the nature of the illness, there are certain symptoms that should always give rise to suspicion that a person is suffering from an infectious disease. These include diarrhoea and/or vomiting, high temperature and rash or skin spots.

- Segregate the child, as far as possible from others, (preferably out of the room), but do not leave the child alone in a room
- Contact the parents, to collect the child
- Seek advice from the school nurse, PHE and/or Early Years and Childcare Service
- Ask the child to cover nose and mouth when coughing
- Cover skin lesions which are discharging with a waterproof dressing
- Staff and other children should wash their hands after touching the ill child or materials they have recently played with

8 Exclusion

In a school setting the school nurse has no powers of exclusion but is free to advise a head teacher that a child should be excluded.

Rarely, if a child is or has been suffering from a notifiable disease then the Local Authority may need to use its legal powers to exclude that child from the school, nursery or childcare setting by serving the child's parents or guardian with a written notice. The purpose of the exclusion is to separate a child with a potentially dangerous or infectious disease from other children so the infection does not spread. This means that children will normally be excluded while they remain infectious.

Children who are ill should be excluded from school, nursery or the childcare setting until they have recovered from the illness. The recommended periods of exclusion for children suffering from specific infections are considered later (see Appendix D). These periods may need to be varied on medical advice. At the end of the recommended period children should no longer be infectious to others but may need time to recover further before returning to school, nursery or childcare setting.

Review any child who is at school, nursery or childcare setting with the following: diarrhoea, vomiting, severe and strange sounding cough, yellowish skin or eyes, conjunctivitis, skin rash, infected skin patches or severe itching.

Exclusion of staff

People employed in schools, nurseries and childcare settings as staff should have the same rules regarding exclusion applied to them as are applied to children. This should be mentioned in the HR policy. They may return to work when they are no longer infectious, provided they feel well enough to do so.

Food handlers

Any food handler who is unwell should immediately report to their line-manager and leave the food handling area. Management is responsible for ensuring the person is excluded from food handling duties. Catering staff should be encouraged in a positive way to report any illness or skin condition and not be penalised for doing so.

Food handlers with coughs, heavy colds, diarrhoea, vomiting and open wounds/sores should be advised not to work whilst symptomatic. Those with diarrhoea and/or vomiting should refrain from work for at least 48 hours after symptoms have ceased. Some infections may require a longer exclusion period and Environmental Health Officers and the HPT are able to advise individuals on recommended exclusion periods.

Food handlers who are excluded awaiting microbiological clearance but who are otherwise symptom free and have good personal hygiene could be considered for a return to work in a non food-handling capacity. Any such return to work should be discussed with an EHO.

Clean lesions on exposed skin such as cuts must be totally covered with a blue coloured waterproof dressing but there is no need to exclude from food handling duties.

Exclusion periods

Further guidance on specific infections and required exclusion periods for gastrointestinal infections may be found in Appendix D.

9 Immunisation against infectious disease

The schedule of routine immunisation from 2006 (updated 2011) is:

- 2 months - DTaP/IPV/Hib, Rotavirus and PCV
- 3 months - DTaP/IPV/Hib, Rotavirus and MenC
- 4 months - DTaP/IPV/Hib and PCV
- 12 to 13 months - Hib/MenC, MMR and PCV
- 2 to 3 years – Flu nasal spray
- 3 years and four months - dTaP/IPV or DTaP/IPV and MMR
- 12 to 13 years – HPV (girls only)
- 14 years - Td/IPV and MenC

Key to vaccines

- DTaP/dTaP – Diphtheria/tetanus/pertussis (whooping cough)
- IPV - Polio
- Hib – Haemophilus influenzae
- PCV – Pneumococcal infection
- MenC – Meningitis C
- MMR – Measles/mumps/rubella
- Td – Diphtheria/tetanus
- HPV – Human Papillomavirus

Immunisation of staff

Staff should check with their Occupational Health Service or their GP that they are up to date with their immunisations.

10 Infection and pregnancy

Infections in the community (not just in schools, nurseries and childcare settings) may pose some risk to the pregnant woman and her unborn baby. Examples are chicken pox and parvovirus infection.

In the event of exposure pregnant staff should get advice from their GP or midwife.

Reassurance is all that is required in most cases. Often laboratory tests will show that the staff member is already immune to the infection.

Any pregnant woman who develops a rash should see her GP or midwife promptly.

10.1 Chicken Pox

This is the most common infection that a pregnant woman will have contact with in the community. If a pregnant woman is not certain that she has had chicken pox in the past, a blood test can show whether she is immune. Ninety percent of people are immune to chicken pox even though they may not remember if they have had the characteristic illness. Treatment is available to protect non-immune pregnant women.

10.2 Parvovirus

If there is an outbreak or case of parvovirus infection in a school, nursery or childcare setting, staff who are less than 21 weeks pregnant should get advice from their midwife or GP. A blood test to find out if they are susceptible to infection can be carried out. Usually the infection affects the whole community and staying away from a school, nursery or childcare setting will not reduce the risk of exposure.

11 Children vulnerable to infection

Healthy children have normal immune defences against infection. However, some children may have medical conditions or be on treatment that affects their immune system. These children are said to be immunocompromised. These children may be more likely to contract infection or suffer adverse consequences from it. There is usually no additional risk to healthy children when in contact with these vulnerable children.

Children at increased risk from infectious disease include those with reduced immunity because of treatment for cancer or with high dose steroids and those with HIV infection or other medical conditions that lower immunity.

Infection may have more serious consequences in children with chronic chest conditions and extensive skin problems. Children with indwelling medical devices such as tracheostomies, feeding tubes or catheters may be more vulnerable to infection. **Hand washing plays a vital role in the prevention of spread of infection.**

Schools, nurseries and childcare settings may be told about vulnerable children by their parents, carers. A named person at the school, nursery or childcare setting should ensure that this information is accurate and treated in confidence. Details should include the name of the child, illnesses from which the child is to be protected and the circumstances under which the parents are to be notified.

Vulnerable children are particularly at risk from chickenpox and measles. If unvaccinated vulnerable children are exposed to measles, their parents or carers should be informed promptly so that further medical advice can be obtained.

11.1 Children with Special Needs

Disability in itself does not pose an increased risk of infection. Children with disabilities are no more likely to transmit infection to others than children without disabilities.

However, children with certain disabilities may find it difficult to observe good personal hygiene. Such children may be unable to tell an adult that they feel unwell. This may be important since many diseases are most infectious before signs of the illness appear. High standards of hygiene will minimise the risk .

If there is concern about the effect of an infectious disease on a child with disability in a school, nursery or childcare setting the head teacher / manager can seek advice from the HPT or with the parent's / guardian's permission , from the child's GP. In school, the school health nurse can liaise with the GP on behalf of the school.

In children with disabilities the appearance of two or more simultaneous/ consecutive cases of the same infection should be discussed with the HPT.

12 Outings to open farms and zoos

Farm visits are becoming increasingly popular with schools, nurseries and childcare settings. Educational farms should invest in high standards of hygiene to reduce the risk of infection to children from farm animals.

The likelihood of the children being infected from contact with livestock or the farm environment is small. However, reports of outbreaks of gastrointestinal illness associated with visits to farms show that there is a small risk. Emphasis should be placed on the importance of personal hygiene for children who visit farms and on the need to report any subsequent gastrointestinal illness. Cryptosporidiosis and E coli infection have been linked to farm visits. A leaflet *Avoiding ill health at open farms- Advice to teachers* is available from the Health and Safety Executive.

12.1 Preparation for the visit

- Check that the farm is well managed, that the grounds and public areas are as clean as possible and that suitable First Aid arrangements are made
- Ensure that the farm has adequate hand washing facilities (including provision of hot & cold running water, soap and paper towels or hot air dryers) and has established procedures to prevent the spread of infection to visitors
- Ensure that there are adequate numbers of adults to supervise the children, taking into account the age and stage of development of the children
- Explain to children that they cannot be allowed to eat or drink anything while touring the farm, because of the risk of infection

12.2 During the visit

- Do not allow any sucking of fingers, touching faces or putting pens, pencils, crayons, etc, in the mouth whilst on the visit
- If children are in contact with, or feeding farm animals, they should not be allowed to place their faces against the animals or put their hands in their own mouths after handling animals. Sick or distressed animals must not be approached under any circumstances
- Children must wash their hands after contact with any animals, fences or other surfaces in the animal area, and always before eating. If young children are in the group this must be supervised at all times. Avoid use of alcohol gels or wipes as they do not remove all infections that may be in dirt
- Meal breaks or snacks must be taken well away from animal compounds or buildings used to store animal bedding or foodstuffs. Picnic areas must not be sited in an area where animals are roaming free. Hands must be washed prior to eating

- Children should be warned not to eat anything that may have fallen to the ground. Any crops produced on the farm must be thoroughly washed in clean drinking water before consumption
- Ensure children do not consume unpasteurised produce e.g. milk or cheese or taste animal feedstuffs, such as silage or concentrates
- Manure and slurry present particular risks of infection: children must be warned not to touch it. If they do, ensure that they thoroughly wash and dry their hands immediately
- Children should not be allowed in the lower walk-way of herring bone parlours when milking is in progress
- In wet or muddy pastures or on any land contaminated by animal faeces, visitors should wear impervious outer clothing (wellington boots and plastic macs)

12.3 At the end of the visit

- Ensure all children wash and dry their hands thoroughly before departure
- Ensure footwear is as free as possible from faecal matter. Wash hands thoroughly after removal of footwear that has been worn in the animal area

Further advice and guidance may be found at
<http://www.hse.gov.uk/pubns/ais23.pdf>

13 The child from abroad

People who come from different parts of the world are generally quite fit and healthy. Even if infectious diseases are more common in their country of origin there is little public health risk that infections will be imported and spread locally. People arriving for the first time should register with a GP straight away so even if they do have any health problems they can be diagnosed and treated quickly.

A new arrival is defined as:

- An adult or child entering the United Kingdom for the first time and planning to stay for six months or longer
- A child entering the United Kingdom for the first time who will attend school even though the planned duration of stay is less than six months
- An adult or child entering the United Kingdom for a second or subsequent time having been absent for 18 months or longer

13.1 Pre-school age children

Health Visitors who identify or are notified of pre-school new arrivals will review immunisation status in the usual way and make arrangements for TB screening and BCG immunisation if necessary. Results will be sent to the Child Health Department so that the computer record can be updated.

13.2 School age children

Similarly School Health Nurses who identify or are notified of school age new arrivals will review immunisation status and make arrangements for TB screening and BCG immunisation if necessary. Again results will be sent to the Child Health Department so that the computer record can be updated. There is no need to delay the child's entry into school. A certificate allowing the child into school is not required.

14 Specific infectious disease fact sheets

Key to symbols used in this section

ⓘ **Exclusion** - denotes information on exclusion, the recommended period for the child/member of staff to be kept away from the school, nursery or childcare setting

✚ **Response to a case** - a guide for teachers, setting managers, parents and school health staff

⊘ **Prevention** - steps which can be taken to prevent the spread of the infection

14.1 Chicken Pox (Varicella) and Shingles (Herpes Zoster)

Introduction

Chicken pox and shingles are two separate infections caused by the same virus, the varicella-zoster (V-Z) virus. Following the initial infection (chicken pox) the V-Z virus remains in the body in an inactive state but it can be re-activated later causing shingles. The first attack confers lifelong protection against further chicken pox.

Chicken pox is the commonest childhood infection and more than 90% of people are infected by the time they reach adulthood. Cases occur throughout the year but are most common in the winter and early spring. Epidemics occur every 1-2 years.

Chicken pox is well tolerated by children but can be more severe in adults. It is also more severe, and there is a greater risk of complications in pregnancy and those with reduced immunity.

Appearance

Chicken pox. The illness has a sudden onset with fever, runny nose, cough and a general rash. The rash starts with blisters, which then dry to form a scab. Several crops of these blisters occur so that at any one time there will be scabs in various stages of development. The rash tends to be more noticeable on the trunk than on exposed parts of the body and may also appear inside the mouth and on the scalp.

Shingles. Latent infection re-emerges in about 20% of individuals, usually several years after the primary infection. Shingles may occur at any age, but the incidence is higher in the older age groups. There is a blistering rash in the area supplied by the affected nerve. Usually only one side of the body is affected, with the trunk being a common site. There is severe pain in the affected area. Most patients, especially those under 50 years of age, recover fully without developing serious complications. Pain usually lasts for about four days. There is often altered sensation before the rash appears accompanied by 'flu like' symptoms.

Spread

Chicken pox is spread by the respiratory route through discharges from nose and throat but sometimes through direct contact with the rash. Chicken pox is very infectious. The attack rate in susceptible exposed children is 87%.

Shingles cannot produce shingles in another person but the virus can spread in fluid from the blisters to cause chicken pox.

The incubation period of chicken pox is 11 – 21 days (average of 15 – 18 days) and the person is usually infectious for 1-2 days before and until all vesicles have crusted over. Patients with shingles are infectious for one week after the appearance of the rash.

+ Response to a case

- 1 Chicken pox and shingles usually get better without treatment. Chicken pox can be severe in adults, pregnant women, newborn infants and those with reduced immunity. Treatment with anti-viral drugs may be needed
- 2 Children should be excluded from school/nursery/childcare setting (see below)
- 3 Hygiene should be emphasised. Wash hands after contact with the affected person
- 4 Anti-viral therapy and immune globulin (VZIG) can be given to contacts that are at high risk of complications because of other medical problems. It is not recommended for normal healthy children
- 5 Parents of immuno-compromised children must be informed of a case. Pregnant staff should consult their GP if they have not had chicken pox or shingles before and they are not known to have antibodies. The CCDC should be informed if several cases occur at the same time

ⓘ Exclusion from school, nursery or childcare setting

Chicken pox - Until all vesicles have crusted over.

Shingles – Only necessary if rash is weeping and cannot be covered.

Investigation of a cluster

Not usually necessary.

⊗ Prevention

Immunoglobulin (VZIG) can be used to protect vulnerable children and adults. A vaccine is now available and is used selectively in most of Europe (including the UK). Its use in this country is restricted to immunocompromised children, particularly those with cancer and leukaemia, and healthcare workers who care for high risk patients.

14.2 Cholera

Introduction

Cholera is a serious infection caused by *Vibrio cholera*. Rare in the UK and Europe it is always acquired abroad as a result of exposure to contaminated water. Cholera commonly accompanies war, famine and other disasters. European visitors are unlikely to visit areas where cholera is common.

Appearance

There is sudden onset of copious, watery diarrhoea and sometimes vomiting.

Spread

Spread is faecal-oral, commonly through contaminated water. Undercooked seafood can also be a vehicle. Epidemics may occur. The incubation period is 6-48 hours and the person will be infectious while there is diarrhoea, usually about seven days. Person to person spread is uncommon in the UK and where sanitary conditions are acceptable..

+ Response to a case

Prompt replacement of fluid and salts lost as a result of the diarrhoea is life saving.

i Exclusion

A child who has had cholera while abroad or developed it shortly after returning home can return to their school, nursery or childcare setting 48 hours after their vomiting and diarrhoea has stopped if well enough to do so.

⊗ Prevention

Control is by ensuring good sanitation and clean drinking water supplies, however in developing countries, this may be difficult. Breastfeeding in these areas protects infants from disease. Visitors to these countries can protect themselves by taking care with what they eat and drink.

A vaccine has been widely used in the past but it is ineffective and no longer available in the UK. Antibiotics can be taken for short periods of time in high-risk situations.

14.3 Cold Sores (Herpes Simplex)

Introduction

Cold sores are caused by the Herpes simplex virus (HSV 1). Another type of Herpes simplex virus (HSV 2) causes genital herpes (herpes genitalis). HSV 1 infection peaks in pre-school aged children but there is a second lower peak in young adults. It is rare in infancy. It is estimated that 50-90% of adults have been infected with HSV 1.

Appearance

Initial infection produces painful ulcerating blisters in the mouth with fever and malaise. Lesions may develop at other sites such as the nose, eye and finger (herpetic whitlow). The illness resolves after 10-14 days. Complications are rare. Following infection, HSV persists in the nerves and at a later date may reactivate and cause a painful local skin eruption, usually on the lip (cold sore). Reactivation may affect 45% of persons who had an infection and may be provoked by fever, sunlight, trauma, menstruation and emotional stress. The risk of reactivation declines with age.

Spread

Humans are the only source of infection. The virus may be shed from the mouth of people who have never had secondary lesions. Infection is spread by direct contact with contaminated saliva often by kissing but also as a result of contact sports. Airborne transmission is unlikely. The virus does not survive for long periods in the environment and cannot penetrate intact skin. The virus is highly infectious, particularly in young children and following contact, 80% of non-immune subjects will be infected. The incubation period is 1-6 days and a person may remain infectious for several weeks as a result of intermittent shedding of virus in the saliva. Patients with impaired cellular immunity, skin disorders and burns are at risk of severe and persistent HSV infections.

+ Response to a case

Depending on severity, control of pain, maintenance of oral hygiene and adequate intake of fluids will be the priorities. Treatment with oral or topical acyclovir may shorten the illness if it is started at an early stage. Oral acyclovir is also effective for prophylaxis in patients who experience frequent recurrences.

① Exclusion

Children with cold sores do not need to be excluded from a school, nursery or childcare setting.

⊗ **Prevention**

Health education and attention to personal hygiene may reduce exposure. Gloves should be available for health and social care staff in contact with potential infection. Patients with HSV infection should avoid contact with infants, burns patients, and people with eczema or impaired immunity. The use of sunscreens may prevent reactivation.

14.4 Conjunctivitis

Introduction

An infection of the outer part of the eyes caused by a variety of bacteria or viruses.

Appearance

There is watering, or thin, sticky discharge, irritation and redness of the whites of one or both eyes.

Spread

It is spread by contact with the discharges from the eyes of affected people or through contact with fingers, clothing and other articles such as eye make-up. Conjunctivitis caused by a virus can be transmitted in poorly chlorinated swimming pools. The person will be infectious for as long as the infection is present.

+ Response to a case

Treat with prescription eye drops if a bacterial cause is suspected. Promote hygiene and avoid sharing personal items.

ⓘ Exclusion

Not necessary.

⊗ Prevention

Promote personal hygiene, especially hand and face washing, minimise hand-eye contact, do not share personal items especially eye make-up, eyedroppers etc. Swimming pools must have adequate chlorine levels.

14.5 Cytomegalovirus (CMV)

Introduction

Cytomegalovirus (CMV), a herpes virus, causes a variety of infections: its major impact is in the newborn, and the immunocompromised. In Europe, most people will have had the infection by the time they reach adulthood.

Appearance

In adults with normal immune systems, the infection may go unnoticed or it may produce an illness rather like glandular fever. CMV causes around 10% of all cases of glandular fever seen among University students and young adults. The infection can recur as a result of reactivation of the dormant virus. It can cause serious lung, liver, gastrointestinal and eye infection in people who are immunosuppressed, including people with HIV infection. Infection in newborn or unborn babies can be serious where it produces brain, liver and lung problems.

Spread

CMV is present in all body fluids including blood, saliva, urine, semen, vaginal fluid, breast milk etc. Someone with CMV infection may shed the virus in these secretions for years. CMV is spread by direct or sexual contact with these body fluids or by blood transfusion. It can also spread before birth, at the time of birth or after birth (in breast milk). The incubation period is 3-8 weeks. About 1:3000 newborn infants are infected but only about 10% of these will show any signs of infection.

+ Response to a case

CMV does not spread from person to person under normal conditions and no special action is needed.

i Exclusion

Not necessary.

o Prevention

Because the virus is so wide spread, there is little that can practically be done to control infection apart from observing good standards of hygiene, such as hand washing.

14.6 Diarrhoea, Vomiting and Gastroenteritis

Introduction

- **Diarrhoea** is defined as the sudden onset of two or more liquid or semi-liquid stools in a 24-hour period.
- **Gastroenteritis** is an inflammation of the gastro-intestinal tract. The symptoms of gastroenteritis include diarrhoea, stomach pains, vomiting and fever. Many different types of bacteria, viruses and other micro-organisms can cause gastroenteritis.

Appearance

Diarrhoea, vomiting, abdominal pain and fever are the symptoms of gastroenteritis.

Spread

Spread is faecal-oral, from someone with diarrhoea, directly by contaminated hands or indirectly through contamination of food, drink or objects that allow germs to enter the mouth of another person. Spread of infection through water occurs with cryptosporidium and giardia. Aerosol spread of gastroenteritis viruses in vomit from infected people is a cause of outbreaks in communal settings such as hospitals, nurseries and schools and nurseries. A person will be infectious while there is diarrhoea or vomiting and for up to 48 hours after the stools return to normal.

+ Response to a case

- Any person with vomiting or diarrhoea should not attend a school, nursery or childcare setting
- Recover at home with enteric precautions

i Exclusion

Any child or member of staff with a potentially infectious cause of vomiting should not attend a school, nursery or childcare setting until they are sure it has stopped and been free of symptoms for at least 48 hours and they are feeling well enough to return.

For some infections longer periods of exclusion from a school, nursery or childcare setting are required. For these groups the advice of the Environmental Health Officer should be sought. The infections where longer periods of exclusion may be needed are: dysentery, *E coli* VTEC infection typhoid and paratyphoid.

Investigation of a cluster

Clusters of cases of diarrhoea should be reported to the HPT.

⊖ Prevention

- Hand washing after using the toilet
- Hand washing before eating
- High standards of hygiene and cleaning particularly in toilet areas
- Provision of a supply of toilet paper, liquid soap and paper towels
- Wearing gloves and using an effective disinfectant to clean up after accidents
- Safe disposal of human and animal/pet faeces
- High standards of hygiene when storing and preparing food
- Exclusion of cases until symptom free for 48 hours

Specific causes of gastroenteritis

Salmonella

Salmonella is a cause of food poisoning caused by eating contaminated food, particularly poultry or eggs. The faecal-oral route can also spread it directly from person to person.

Campylobacter

It is spread between people and animals by the faecal-oral route. The germs are present in the faeces of adults and children with diarrhoea and spread to the mouths of other people directly on their hands or by food or objects. The germs are also present on raw meat, especially chicken and can spread to other foods in the kitchen or contaminate surfaces and utensils.

Viral causes of diarrhoea (rotavirus, adenovirus, Norovirus)

These are common causes of diarrhoea in schools, nurseries and childcare settings and are spread by direct contact with the faeces or vomit of those with the illness or from the consumption of contaminated food or drink. They are more prevalent in the winter months.

Typhoid and Paratyphoid Fever

These are rare but are serious illnesses. They are spread by consuming food or water contaminated by the faeces or urine of someone with the acute illness or by someone without symptoms who is excreting the organisms. Infections with these organisms are usually acquired abroad and rarely spread from person to person. The symptoms of typhoid fever include fever, malaise and constipation, whereas those of paratyphoid fever include fever, diarrhoea and vomiting. The need for exclusion will be assessed on an individual basis by the EHO when cases arise.

Giardia

The faecal-oral route spreads this parasitic infection from those with the infection to others. It may also be spread by drinking water contaminated with the faeces of infected people. Infection with giardia may not cause any symptoms. When symptoms do occur they may include abdominal pain and chronic diarrhoea. Cases should be treated with antibiotics.

Cryptosporidiosis

The faecal-oral route spreads this infection from those with the infection to others. It can also be spread by direct contact with farm animals, particularly cattle and sheep. Spread via contaminated or untreated water and milk has also been reported. The symptoms are abdominal pain, diarrhoea and occasionally vomiting.

Bacillary Dysentery (Shigella)

The faecal-oral route passes this disease directly from person to person. It is usually spread from those with diarrhoea but can be spread from those recovering from the illness even if they do not have symptoms, particularly if they belong to one of the 'high risk' groups. The symptoms of *shigella* include bloody diarrhoea, vomiting, abdominal pain and fever

E coli VTEC See fact sheet 14.8

14.7 Diphtheria

VACCINE PREVENTABLE

Introduction

A throat or skin infection caused by toxin-producing bacteria called *Corynebacterium diphtheriae*. Diphtheria has been eradicated in Britain but it may be imported from countries where it is still common. Due to economic and social factors, and inadequate healthcare delivery systems, there has been an increase in cases of diphtheria in the states of the former USSR, the Indian Subcontinent, South East Asia and South America. It is important that a high immunisation uptake rate is maintained in order to protect children when abroad and from imported cases of diphtheria.

Appearance

There is a sore throat with a thick grey exudate on the tonsils or there may be an infected skin ulcer.

Spread

Humans are the only reservoir of diphtheria. Spread is by close contact with an infected case or a carrier, either directly by airborne droplets and discharges from nose, throat or skin or indirectly through contact with articles contaminated by infected discharges. The incubation period is 2-5 days, but occasionally longer. If treated with antibiotics, patients cease to be infectious within 3 days. Untreated cases are infectious for 2-3 weeks.

+ Response to a case

The case is isolated and treated in hospital. Close contacts are tested for diphtheria and kept under surveillance. Their immunity is checked and preventative antibiotics given. Non-immunised children immediately begin a full course of immunisation. Others, who have a history of previous immunisation, receive a single booster dose. Carriers (those who are well but harbour the organism in their throats) are isolated and treated with antibiotics.

i Exclusion

Affected children and their contacts will stay away from school, nursery or childcare setting until advised clear to return by the local HPT.

⊗ Prevention

The most important preventative measure is the maintenance of high levels of immunity in the child population by immunisation.

14.8 Escherichia Coli (E.coli) O157 and other Verocytotoxin producing *Escherichia coli* (VTEC)

Introduction

Escherichia coli (*E. Coli*) are common bacteria which live in the intestines of warm blooded animals. There are certain forms (strains) of *E. Coli* which are normally found in the intestine of healthy people and animals without causing any ill effects, however some strains are known to cause illness in people. Among these is a group of bacteria which are known as Vero cytotoxin-producing *E. Coli* or VTEC.

Appearance

The symptoms of VTEC infection include diarrhoea (which may be blood-stained), severe abdominal pain and vomiting.

A small proportion (2-7%) of people with VTEC infection may develop haemolytic uraemic syndrome (HUS). HUS is the commonest cause of renal failure in children and may be fatal (3-17% of cases) or lead to long term complications.

A further complication of VTEC infection particularly in adults is thrombotic thrombocytopenic purpura (TTP).

Spread

VTEC are present in the intestines and faeces of farm animals especially cattle.

Most cases are thought to be food borne as a result of eating contaminated beef products, particularly under-cooked beef burgers. Cases also occur after drinking unpasteurised cows milk, contaminated pasteurised milk and contaminated water, and some fruit, salad items or uncooked vegetables fertilised with cattle manure or slurry. Infection can occur if these have been eaten uncooked without proper washing. This has occurred with lettuce.

Someone with diarrhoea may spread VTEC from his or her faeces directly to another person. This is particularly likely to happen between young children or where personal hygiene is poor. Young children can continue to excrete the organism in their faeces for several weeks after they are better.

VTEC infection can also occur when there is transfer of animal faeces to the mouth. This could happen after touching animals or the environment which might be contaminated on a visit to a farm.

The time between exposure and onset of symptoms is about between 1 and 6 days.

+ Response to a case

There is no specific treatment for VTEC infection and in uncomplicated cases symptoms usually resolve within two weeks. If complications develop, the person may be seriously ill and intensive supportive treatment including dialysis may be required in hospital for several weeks.

To prevent spread to others:

- 1 Stay away from others until the diarrhoea has stopped
- 2 Do not prepare food for other people if you have diarrhoea and vomiting. Wait until you have been better for 48 hours. Avoid handling food that is going to be eaten by other people
- 3 Clean toilet bowls, seats, flush handles, doors including handles and frames and taps frequently with a suitable household cleaner and wipe down with a disinfectant afterwards. Follow the manufacturer's instructions and store disinfectants out of children's reach. Wear rubber gloves when cleaning the toilet but do not use them for anything else. Soiled clothing should be sent home in a sealed plastic bag and washed on as hot a washing-machine cycle as possible. If possible set aside a towel for your own personal use at home
- 4 Take care when changing nappies or clearing up after someone who has been sick or had diarrhoea
- 5 If a young child has been infected it is worth continuing with these increased hygiene measures for a few weeks after the child is well as they can continue to excrete the organism even after they appear better

i Exclusion

It is the responsibility of management to ensure the person is excluded until symptoms cease and microbiological clearance has been established. An EHO will be involved with management and the necessary exclusion period.

Older children should stay away from school until they are well again and two days have passed since the diarrhoea has stopped. Younger children will be asked to stay away from school, nursery or childcare setting until their symptoms have stopped and two faeces samples have been found to be negative on laboratory testing.

⊗ Prevention

- 1 Cook all minced beef and hamburgers thoroughly. Make sure that the cooked meat is grey or brown throughout (not pink), that the juices run clear and the inside is hot. Take particular care at barbecues
- 2 Take care with vegetables that have been fertilised with manure or slurry or if they have soil on them. Wash thoroughly, peel or cook before eating

- 3 People visiting farms should wash their hands before eating and drinking especially if they have touched the animals. Children should be advised not to put their fingers into their mouths
- 4 Wash and dry hands thoroughly after handling raw meat
- 5 Cooked and perishable food should always be stored in a refrigerator
- 6 Keep raw meat away from other foods, particularly in the fridge. Ensure raw food is NEVER stored above cooked food in the fridge
- 7 Wash utensils and chopping boards thoroughly with hot water and detergent
- 8 Wash hands thoroughly, particularly after using the toilet, before preparing or eating food and after changing a baby's nappy
- 9 Be particularly careful when travelling abroad to countries where there is poor sanitation and drinking water may not be pure

14.9 Fleas and diseases carried by fleas

Introduction

There are probably over 2000 species of flea. Adult fleas live and feed on animals and humans but their eggs, larvae and pupae develop off the host. Adult fleas can lie dormant off their hosts for long periods. They are activated by vibrations and other stimuli and then jump in the direction of the approaching host.

Appearance

Irritation and inflammation at the site of the bite are either seen immediately or appear a few hours after the bite. There may be secondary infection.

Spread

Fleas from a range of wild and domestic animals can also feed on humans.

+ Response to a case

If fleabites are suspected, pets and other animal should be examined and treated with an insecticide. Their bedding should also be treated or washed on a hot washing machine cycle.

Floor coverings including carpets and furniture used by the animals should be cleaned and vacuumed. Insecticides should not be applied to carpets and furniture. Combs and brushes should be washed with a detergent and hot water after use.

① Exclusion

Not required.

⊖ Prevention

Pets should be examined regularly and treated if necessary.

14.10 Glandular Fever (Infectious Mononucleosis)

Introduction

This is a common illness of older children and young adults usually caused by the Epstein-Barr virus (EBV).

Appearance

In young adults the symptoms are fever, sore throat, swollen glands (especially at the back of the neck) and occasionally jaundice. In children the disease is generally mild and difficult to recognise. Duration of the illness is from one to several weeks or even longer. The incubation period is 4 - 6 weeks. The infectious period is not accurately known, but is thought to be several months. Virus is probably present in saliva for up to a year after the acute illness.

Spread

Spread is as a result of contact with saliva either directly during kissing or indirectly on hands or objects. Attack rates may be as high as 50%.

+ Response to a case

There is no specific treatment. Bed rest and reduced physical activity is often recommended.

i Exclusion

Not required.

o Prevention

- 1 Health education and hygienic measures where practical to reduce exposure to saliva especially from infected persons
- 2 Avoid kissing children on the mouth
- 3 Avoid putting toys in the mouth

14.11 Haemophilus Influenzae type B (Hib)

VACCINE PREVENTABLE

Introduction

An infection caused by Haemophilus influenzae type b (Hib), a gram-negative bacterium. Hib used to be a major cause of meningitis in children under five years, until immunisation was introduced in October 1992. Now it is a rare infection. It is occasionally seen in children who have not been immunised as they were born overseas.

Appearance

Hib meningitis, the commonest form of bacterial meningitis in young children, has now virtually disappeared from the United Kingdom. Fever is present in all forms of Hib disease. Symptoms of meningitis also include stiff neck, headache and vomiting. Pneumonia symptoms include rapid breathing and a cough that produces mucus. Epiglottitis symptoms include noisy breathing and a very sore throat. Joint infections can also occur.

Spread

Humans are the only host: spread is by the respiratory route.

⊗ Prevention

Routine immunisation against Hib is given at 2, 3 and 4 months in the first year of life.

14.12 Hand, Foot and Mouth Disease (Coxsackie Virus)

Introduction

Coxsackie virus causes various diseases including skin rashes, pharyngitis, meningitis, myocarditis and pericarditis (inflammation around the heart). Hand, foot and mouth disease (HFMD) is usually due to Coxsackie virus serogroup A16. Epidemics occur every 2-3 years. The seasonal pattern peaks in summer and early winter. Children aged 0-4 years are usually affected.

Appearance

It is usually a mild infection with ulcers in the mouth and a red blotch or blistering rash on the hands, feet and buttocks. Recovery is uneventful.

Spread

Human cases are the source of infection and spread is by direct contact with blisters, faeces, nose and throat discharges or respiratory droplets. The incubation period is 3-5 days and a person will be infectious from 2 to 3 days before to a few days after the appearance of a rash. The person may remain infectious for several weeks as the virus may persist in the faeces increasing the need for good hygiene practices to be put in place throughout.

+ Response to a case

Most cases are mild and self-limiting.

i Exclusion

Children with HFMD do not need to be excluded from a school, nursery or childcare setting.

Investigation of a cluster

PHE may alert local schools, nurseries and childcare settings and General Practitioners if an outbreak of HFMD occurs. The school, nursery or childcare setting may send an advice letter to parents.

⊗ Prevention

Health education and an emphasis on personal hygiene will reduce the opportunities for exposure. Pregnant women may wish to avoid exposure as a possible risk of miscarriage has been suggested.

14.13 Head lice

Introduction

Head lice are parasitic insects called *Pediculus humanus capitis*. There are three forms of head lice: nits, nymphs and adults. Head lice are a common problem in Britain and are most common amongst children between the ages of 7 to 11 in particularly amongst girls, although anyone can catch them. Hair type does not make a difference as all hair types and lengths can be affected and they will live happily in 1cm of hair: short hair's only advantage is that detection and treatment can be easier.

Appearance

Finding a living adult head louse is not always easy, but a fine plastic detection comb is the best solution. It is advisable to use a detector comb on wet and conditioned hair, parting the hair into small sections and combing through from scalp to ends of hair, section by section. This should be done for all members of the family at least once a week, especially if you have school aged children. Young head lice are the size of a full stop whilst adult head lice are the size of a sesame seed. Female lice will live for about one month, laying 4-6 eggs a day — that's a lot of eggs!

Head lice are often referred to a 'nits' however these are empty or dead egg cases and finding these in hair is often a good indicator that lice are about, but not proof that someone is infected.

If a live head louse is found check everyone in the family with a detector comb and apply treatment **ONLY** to the people who have living lice in their hair.

Spread

Head lice cannot live away from the human head and they do not mind if the hair is dirty or clean so home hygiene has nothing to do with infection. They are purely a human parasite and cannot infect dogs, cats or other animals and they are spread by close head-to-head contact **ONLY**. They cannot jump, fly or crawl across clothing as they do not have wings or the right sort of legs for jumping and they cannot be transmitted through clothing, hats, headphones, furniture or any other means.

+ Response to a case

There are 3 main options for the treatment of live head lice; pesticide lotions and shampoos, non-pesticide lotions and wet-combing with conditioner (bug-busting). Alternative treatments are also available but have no proof of effectiveness. When choosing a head lice treatment option consider how easy a treatment is to use, how long it takes and how easily the person will accept it. For information on the main treatment options see overleaf. Contact tracing is also a vital part of head lice treatment as infected individuals can pass head lice back again quickly. Consider everyone who has had close head to head contact with the infected individual including household members, grandparents, best friends, school friends and contacts.

Pesticide lotions and shampoos

Pesticide lotions are very good at killing lice and easy to apply but resistance can reduce effectiveness. Some may have a strong odour and some are unsuitable for people with allergies. Pesticide shampoos are usually quicker and easy to apply but not as effective as lotions. Resistance can still be a problem and they are not available on prescription. There are four main pesticides used in Britain: malathion, carbaryl, permethrin and phenothrin. Head lice can become resistant to a particular pesticide, often by overuse, reducing its ability to kill them, which is why four are needed to combat this potential resistance. Lotions, shampoos and rinses should be applied carefully according to pack instructions and repeated, usually after one week. To check effectiveness, use a detector comb after the first treatment and if live lice are found then get another pesticide. Families should not treat everyone 'just in case' as this can trigger resistance and may cause scalp irritation.

Non-pesticide lotions

Non-pesticide lotions are very quick and easy to apply, very effective at killing head lice and have no resistance problems, however they have to be left in the hair for at least 8 hours or overnight. Non-pesticide lotions use an odourless dimeticone compound that coats head lice and smothers them. Because they use purely mechanical non-toxic methods, resistance cannot develop and they can be used as often as necessary without irritating the scalp. Non-pesticide lotions should also be applied as directed in the pack instructions and repeated, usually after one week so that it will catch lice that have hatched between treatments and before they can lay eggs of their own. To check effectiveness, use a detector comb 24 hours after the second treatment and if live lice are found then repeat the entire treatment until no lice are present.

Wet combing (Bug-busting)

Wet combing can be very effective if the correct technique is used as often as required. It can be very time consuming for both the parent and child but does not lead to any problems with allergies or resistance. Combing must occur for all affected individuals every 3 days for at least 2 weeks or until live lice cannot be found.

The technique involves wetting the hair with water or conditioner and using a fine toothed plastic nit comb. All of the hair must be combed from scalp to tip and the use of hair slides/grips may assist to separate combed hair from the rest. Proper combing takes at least half an hour per person (longer if the hair is longer). It is important to check for lice nymphs (newly hatched lice) and eggs as well as live adults: if any of these are missed, the infestation will continue.

❶ Exclusion - There is no exclusion period for head lice.

More Information For further information on head lice, their detection and treatment go to <https://www.gov.uk/health-protection> or www.nhs.uk

14.14 Hepatitis A

Introduction

An inflammation of the liver caused by the hepatitis A virus (HAV). The disease occurs sporadically throughout the year but may occur in outbreaks every few years. Hepatitis A is a highly infectious disease and its rapid control, once an outbreak occurs, is difficult. Poor personal hygiene and low cleaning standards contribute to spread of infection. Humans are the only source of HAV. An attack confers life long immunity. HAV infection is not a persistent infection and patients almost always recover from it without long-term effects.

Appearance

The infection often produces no symptoms or it may give mild symptoms in young children. Older children and adults are much more likely to have symptoms. Symptoms are abdominal discomfort, loss of appetite, nausea, low fever and tiredness, followed by yellow skin and eyes (jaundice), dark urine and pale faeces. The illness in children usually lasts 1-2 weeks. It may be longer in adults.

Spread

The mode of spread is faecal-oral, usually directly from person to person. It is therefore more common in toddlers and young children in whom personal hygiene would be expected to be poor. Asymptomatic children are unknowingly largely responsible for spreading the infection through soiled hands after using the toilet. The soiled fingers may directly transfer infection to others or indirectly contaminate food and drink which other people then consume.

Water and food such as milk, sliced meats, salads and raw or undercooked shellfish can be a source of infection particularly overseas. Person to person spread is the more common mode of spread in schools, nurseries and childcare settings. The incubation period is on average 2 to 6 weeks. The infectious period is two weeks *before jaundice* appears and for one week after the jaundice appears.

+ Response to a case

There is no specific treatment for hepatitis A once symptoms develop, but an effective vaccine is available to prevent it. The vaccine is not part of the childhood immunisation programme but is used to protect people travelling abroad to countries where sanitation and hygiene are poor.

① Exclusion

An affected child can return to a school, nursery or childcare setting seven days after the onset of jaundice if well enough to do so.

Food handlers may be excluded for longer periods and advice will be given by the HPT.

Investigation of a cluster

Hepatitis A may cluster in families and rarely in schools, nurseries and other childcare settings. PHE will advise on measures to stop spread.

⊗ Prevention

- 1 Exclusion of affected children and attention to hand washing and hygiene
- 2 Preformed antibodies (immunoglobulins) can be given by injection to reduce the chance of infection after exposure as a result of close contact with a case, usually in the family. They are of particular benefit to adults who may develop a more serious illness. Immunoglobulins do not prevent the spread of HAV infection
- 3 Vaccine may be offered to some people who are at increased risk of infection

14.15 Hepatitis B

Introduction

Hepatitis B infection of the liver is caused by the hepatitis B virus (HBV). Unlike hepatitis A, HBV can be present in the blood without symptoms but capable of spread. This is called the carrier state.

The virus is found in the blood of an infected person. Other body fluids are less important in the spread of hepatitis B virus in schools, nurseries and other childcare settings. HBV is uncommon in children. When it does occur it usually affects children born to mothers who are carriers of the virus. However this group of children are now immunised at birth to prevent infection.

Children who were born in countries with a higher prevalence of HBV infection may be carriers of the virus. However the numbers are small.

Normal hygienic precautions will safeguard other children and staff.

There is a higher level of infection amongst children with learning difficulties. There is a small risk of spread if these children have behavioural problems involving bleeding, biting or scratching. However evidence from the USA suggests that when such children are placed in an mainstream school setting there are no additional cases of infection despite this behaviour.

Hepatitis B is more common in adults in whom there are routes of spread not present in children such as sexual intercourse and injecting drug use.

Appearance

Symptoms include abdominal discomfort, loss of appetite, fever, joint pains, dark urine, pale stools and yellow skin or eyes (jaundice).

Spread

HBV is a blood borne virus. The incubation period is 6 weeks to 6 months. The infectious period is from about one month before jaundice appears, to one to three months after while the virus is still present in the blood.

Some children recover from the illness but continue to carry the virus in their bodies for months or years. Such carriers remain infectious.

+ Response to a case

Report cases to PHE

Specific treatment is available in specialist centres.

1 Universal blood precautions should be applied (see **6.2.1**)

- 2 Cover sores, cuts and abrasions with a waterproof plaster
- 3 Children should be discouraged from sharing personal items
- 4 Seek advice if a child who is known to be infectious has violent or aggressive behaviour and bites or scratches

ⓘ Exclusion

Children can return to school, nursery or childcare setting when well enough to do so.

It is not necessary to exclude carriers from a school nursery or childcare setting as spread from a carrier child to other children or staff although theoretically possible is not found in practice. The practice of universal blood precautions will prevent spread of infection and provide added assurance to children and staff.

⊘ Prevention

- 1 Immunisation is available for those who are at special risk. These include certain health care workers and some teachers in special schools and nurseries
- 2 Ask the HPT for the local policy. Advice on immunisation is available from Occupational Health, your GP or the HPT
- 3 See section **6.2.4/6.2.6** for advice on what to do after an exposure to blood or a bite
- 4 Household contacts of a case of hepatitis B are usually tested and offered vaccination if they are at risk of infection

14.16 Hepatitis C

Introduction

Hepatitis C is infection of the liver with hepatitis C virus (HCV). It is uncommon.

Appearance

Hepatitis C is a mild infection and three quarters of those infected have no symptoms at all. Often the only evidence of infection is seen in the results of blood tests. Those who do have symptoms usually feel off colour for a few days. It is unusual to have jaundice, which is a common sign of other forms of hepatitis. Following infection, 20% of those will clear the virus.

80% of those with HCV will continue to be infected with the virus. HCV is present in blood and other body fluids and tissues and they are said to be carriers. About 10-20% will progress to liver damage over a period of 20 years and a few may develop liver cancer. However many people with HCV will have near normal livers despite many years of infection.

Spread

HCV is a blood borne virus. It is spread by contact with blood or other body fluids from an infected person. This can occur in the following ways:

- Drug users who share needles or syringes
- By blood transfusions. Since September 1991 all blood transfusions have been tested for HCV
- By clotting factor concentrate for haemophilia and other blood disorders. Since 1985 all clotting factors have been heat treated to kill any viruses
- By transfer of blood or body fluids from an infected person to another person through a break in the skin such as a wound or through inoculation or injection. Some healthcare workers become infected in this way
- By acupuncture, tattooing, ear piercing or electrolysis if the equipment has been used on someone with the infection and has not been sterilised properly
- Spread of HCV during sexual intercourse or from a mother to her baby before birth, during birth or after birth (as a result of breastfeeding) is not an important route of transmission
- HCV cannot be passed by sharing food, utensils, baths or toilets with someone with the infection and it cannot be passed on by coughing, sneezing or touching

HCV has an incubation period of approximately 2 weeks to 6 months and cases remain infectious whilst the virus is detected in the blood.

+ Response to a case

Treatment for HCV is available and can continue for 6 – 12 months.

People with HCV infection should follow these rules to make sure they do not pass on the infection to anyone else:

- 1 Keep cuts or grazes covered with a waterproof plaster until their skin has healed
- 2 Items that might cut the skin or damage the gums and cause bleeding such as razors or toothbrushes should not be shared
- 3 If they cut themselves, wipe up any blood with paper tissues and flush these down the toilet. Wipe any surfaces where blood has been spilt with some household bleach diluted in cold water (1 part bleach to 10 parts water). Do not use this on your skin or on any fabrics
- 4 Wash any wounds and cover them with a waterproof plaster. Tell any helpers that you are a carrier of hepatitis C infection. If available they should wear plastic gloves. Otherwise they can use a towel or cloth to prevent them from getting blood on to their skin
- 5 If your clothing is soiled with blood or other body fluids, wash them using a hot washing machine cycle
- 6 Dispose of used tampons straight away by flushing down the toilet. Dispose of sanitary towels by burning or by putting in your rubbish after first sealing inside a plastic bag
- 7 If you go for medical or dental treatment, tell your doctor or dentist you have HCV
- 8 Do not donate blood or carry an organ donor card
- 9 Do not have acupuncture, tattooing, ear piercing or electrolysis
- 10 Injecting drug users should not share your *works* and dispose of used needles and syringes safely by putting them in a rigid container with a lid
- 11 Those in a stable relationship with one partner you may not feel the need to start using condoms. Otherwise condom use should be encouraged and safe sex should continue to be promoted for the prevention of HIV and other sexually transmitted infections
- 12 The risk of transmission from mother to child appears to be very low. At the present time there is no need to advise against pregnancy based on HCV status alone or to advise any special treatment or precautions for pregnant women or their children
- 13 As damage to the liver is continuous alcohol intake should be reduced as much as possible or ideally avoided

❗ Exclusion

Hepatitis C is not infectious under normal school/nursery/childcare setting or work conditions. There is no need to stay away from school/nursery/childcare setting or work.

⊗ **Prevention**

- 1 At present no vaccine is available for hepatitis C
- 2 All blood products are now tested for HCV
- 3 Great efforts are made to educate health care workers and injecting drug users and make sure injecting drug users have access to sterile needles and syringes through needle exchange schemes

14.17 Human Immunodeficiency Virus (HIV) and AIDS

Introduction

The Human Immunodeficiency Virus (HIV) is the virus that causes the Acquired Immune Deficiency Syndrome (AIDS). The syndrome is characterised by repeated infections because of reduced body resistance.

Appearance

There is an initial self-limiting influenza like illness. After a period of several years patients may develop a long lasting generalised enlargement of the lymph glands. Non-specific illnesses such as fever, night sweats and lymphadenopathy (involvement of the lymph nodes) are associated with progressive immune deficiency. The development of AIDS is characterised by the appearance of opportunistic infections and tumours. The incubation period is 1 to 12 weeks. Testing for antibodies in blood makes diagnosis. These are present about three months after infection. Antibodies indicate infection with the virus. Patients are infectious from about two to four weeks after the initial infection and remain so throughout life.

A problem that makes diagnosis difficult is that a baby may be born with antibodies from an infected mother. These may persist for 18 months. A positive antibody test in a baby before that age therefore does not necessarily mean infection.

Spread

Most infections are transmitted sexually or by blood, either by transfusion (usually only seen in the UK from those that have received transfusions overseas in undeveloped countries) or by use of contaminated needles and syringes.

Sexual contact is the main route of spread in the UK.

HIV is not spread by ordinary social contact and will not spread in families, schools and nurseries or other childcare settings.

+ Response to a case

- 1 Parents will be advised by their doctor when to inform the school/nursery/childcare setting of their child's infection
- 2 Confidentiality of medical information about an infected child must be observed. The number of persons who are aware of the child's condition must be kept to the minimum compatible with the need to ensure proper care of the child and to deal with situations where there is a potential for spread
- 3 Contact with parents should be maintained and there should be co-operation to safeguard the health of the affected child and the school/nursery/childcare setting

- 4 Children with HIV infection are prone to more severe infections than others and parents should be informed if another child has an infection, which could pose a risk to the child with HIV
- 5 Their doctor should see children who are unwell and will decide whether the child stays at home or continues to attend school/nursery/childcare setting
- 6 Moist skin lesions or abrasions should be covered with a waterproof plaster. If lesions are weeping or discharging, and cannot be covered, the children should stay at home until the lesions have healed
- 7 Children with behavioural disturbances may need to be excluded from school/nursery/childcare setting for expert assessment for future management in consultation with the child's doctor, parents and the school authorities
- 8 There is no need to segregate items such as eating utensils, plates and cups. Separate toilet and other washing facilities are not necessary
- 9 Universal blood precautions should be followed. Schools, nurseries or childcare settings with a child who has HIV infection should stock equipment that allows mouth to mask resuscitation. If these are not available, direct mouth-to-mouth resuscitation should never be withheld, as the risk of infection during resuscitation is very small
- 10 Staff with HIV infection are not obliged to inform their employer of their condition but most will do so. Guidelines are available and the CCDC will assist the school/nursery/childcare setting and the affected staff member (if desired) in dealing with such a situation, especially when the disease reaches an advanced stage and the person is seriously ill

① Exclusion

Not necessary. Children with HIV infection who are healthy can attend school/nursery/childcare setting.

⊗ Prevention

Apply universal precautions (see section 6.2.1) when handling blood stained items and spillages.

14.18 Impetigo

Introduction

Impetigo is a very infectious condition of the skin caused by streptococci or staphylococci bacteria.

Appearance

The infection starts with vesicles, which rupture to form raw moist areas which then dry and form crusts. The crusts of streptococcal impetigo are thick, adherent and golden-yellow. The crusts of staphylococcal impetigo are brown, thin and varnish like.

Spread

Spread is by direct contact with discharges from sores on an infected person. The bacteria invade skin through minor abrasions and then spread to other sites by scratching. Infection is spread mainly on hands but indirect spread via toys, clothing, equipment and the environment may occur. In some cases the bacteria are already present in the nostrils or on the skin of the affected child.

The incubation period is 4-10 days and a person will remain infectious to others as long as the infection (lesions) persists.

+ Response to a case

The infected area should be washed daily with mild soap and water. Antiseptic or antibiotic creams may be used. Antibiotics by mouth may hasten healing. Sores may be covered with an impermeable dressing if practicable. Clothes, linen and towels should be changed regularly. The importance of hand washing should be emphasised for all staff and children. Contact with infants and other susceptible groups should be avoided.

i Exclusion

The child should stay at home until the sores have crusted and healed or 48 hours after the commencement of antibiotics.

Investigation of a cluster

Discuss management with the school nurse or PHE.

o Prevention

Prevention of impetigo depends on good personal hygiene, especially hand washing and prompt identification and treatment of cases. Prompt attention to skin injuries will prevent impetigo. Insect bites, cuts and abrasions should be kept clean and treated if necessary.

14.19 Influenza (Flu)

Introduction

There are three types of influenza virus (types A or B are the commonest, type C is rare), which cause a variety of symptoms. Influenza infections occur during the winter months, often in epidemics. The spread is often rapid with widespread absenteeism from schools, nurseries or other childcare settings. Children at additional risk from influenza include those with medical conditions including moderate to severe asthma.

Appearance

Fever, headache, muscle pains and chills are prominent at the beginning of the illness. Respiratory symptoms, including cough become more pronounced from the third day and last for 3-4 days though the cough may persist for a further 1-2 weeks. Young children typically have milder disease though the fever may be higher. There may be croup and bronchitis. Muscle pain and headache are typically seen in older children and adults. Complications are less common in children. Up to 25% of children may also have nausea, vomiting or diarrhoea.

Spread

The respiratory route spreads influenza virus. The incubation period is 1-3 days. The infectious period for adults is from 24 hours prior to the onset of symptoms until 5-10 days after the first symptoms. Children may be infectious from 3 days before until 9 days after onset of symptoms.

+ Response to a case

There is no specific treatment. Children should stay at home while unwell. Plenty of liquids to drink and paracetamol for fever are recommended. Hand hygiene should be encouraged particularly after wiping noses/handling used tissues.

Schools, nurseries and childcare settings may need to close, completely or in part, during an influenza outbreak because of high absenteeism among staff. If an outbreak occurs, it is important to inform the HPT immediately in order that appropriate control measures are implemented swiftly.

i Exclusion

A child with influenza can return to the setting when well enough to do so.

o Prevention

Influenza immunisation is recommended for children with medical conditions who are at risk of complications if they get influenza. This includes heart and lung conditions, diabetes and moderate or severe asthma. Immunisation is offered each year usually by the end of November. Immunisation of healthy people is not recommended. Immunisation is not helpful once an influenza outbreak has become established.

14.20 Kawasaki Disease

Introduction

Also known as the *mucocutaneous lymph node syndrome* Kawasaki disease (KD) is a rare generalised inflammation of small blood vessels thought to be caused by an as yet unidentified infectious agent.

Appearance

There is fever, lymph node enlargement, an inflamed throat and tongue and a skin rash.

Spread

Unknown.

+ Response to a case

Treatment is aimed at reducing fever and other inflammatory features to prevent the development of lasting damage to the coronary arteries. Aspirin and intravenous immunoglobulin are used.

i Exclusion

Not necessary. The child can return to school/nursery/childcare setting when well enough to do so.

o Prevention

None.

14.21 Legionellosis (Legionnaires' Disease)

Introduction

Legionellosis is the term used to cover Legionnaires' disease and Pontiac Fever, infections caused by the bacterium *Legionella pneumophila*.

Legionnaires' disease is pneumonia. The source of infection is air conditioning systems and hot water systems in large buildings such as hospitals, hotels and office buildings. Cooling towers serving factories have also been responsible in the past for cases of infection. Pontiac fever is a milder flu-like form of the infection

Appearance

Legionnaires' disease begins abruptly with high fever, headache and muscle pain. A dry cough soon develops and most patients suffer difficulties with breathing. Pontiac fever is a short feverish illness without pneumonia.

Spread

The infection is acquired by inhalation of organisms in small water droplets and aerosols generated by running taps or showers and during the operation of cooling towers and evaporative condensers. Aerosols containing bacteria travel great distances if the wind direction is in their favour. Low concentrations of the bacteria in most water systems of large buildings are unavoidable. The incubation period is 2-10 days (average 5.5 days). Person to person spread does not occur.

① Exclusion

Not necessary.

⊘ Prevention

These organisms grow rapidly in water temperatures of 30°C-40°C. Regular maintenance is the best safeguard against infection.

14.22 Malaria

Introduction

Malaria is a potentially fatal infection caused by the malaria parasites. It is acquired abroad.

Appearance

The main presentation is with fever and rigors. Infection with most malaria is usually mild. Fatal infections are rare unless there is impaired immunity.

Spread

Malaria is transmitted by the bite of the female mosquito. Absence of the insect in the UK and Europe means that there is no risk of secondary cases.

+ Response to a case

Prompt diagnosis and effective treatment is important to prevent complications.

① Exclusion

Not necessary.

⊘ Prevention

Avoiding mosquito bites and taking anti-malarial tablets can prevent malaria. The mosquitoes bite mainly at night. Those at risk should sleep in screened rooms or under nets. Arms and legs should be covered during the hours of darkness and insect repellents should be used. Spraying with insecticide and destroying breeding sites such as stagnant water controls mosquitoes.

14.23 Measles

VACCINE PREVENTABLE

Introduction

The measles virus causes measles. The measles-rubella (MR) immunisation campaign in 1994 and subsequent MMR vaccination in the UK has resulted in a dramatic reduction in cases of measles. Measles is now extremely rare. Children notified as having measles are usually found on laboratory testing to be suffering from other viral infections with rash and fever.

For further information see: <http://www.dh.gov.uk/en/publicationsandstatistics>

Appearance

Measles is highly infectious. The illness begins with fever, tiredness, cough, runny nose and inflamed eyes. The symptoms usually worsen over the next three days. In some cases, Koplik's spots (small white spots) may appear on the cheeks inside the mouth prior to the appearance of a rash. Between the third and seventh day, a rash appears and in 24-48 hours spreads over the entire body. The rash on the head and face begins to fade after about 6 days. The illness lasts about ten days and the cough may be the last symptom to disappear. A child with measles usually feels quite ill. The virus can cause complications, such as pneumonia and encephalitis. The incubation period is 7 to 14 days (usually 10 days) and the infectious period is a few days before the appearance of the rash to four days afterwards.

Spread

The virus spreads by the respiratory route.

+ Response to a case

Cases of measles should be notified to the PHE.

There is no specific treatment. The affected child should be kept at home until five days after the onset of the rash. Unimmunised children who have been exposed, or are likely to be exposed to measles, should be immunised immediately or at least within three days of exposure.

i Exclusion

The child can return to school/nursery/childcare setting four days after the onset of the rash when well enough.

o Prevention

Children are routinely offered immunisation with Measles-Mumps-Rubella (MMR) vaccines at 13 months of age and at school entry. It is important to maintain immunisation levels of 95% or more.

14.24 Meningitis (Viral)

Introduction

Anyone can get viral meningitis, but it occurs most often in children. It is more common in the summer.

Symptoms

Most cases of viral meningitis are relatively mild, with symptoms of headache, fever and general ill feeling, and those affected recover without medical treatment. This is one reason why it is so difficult to measure how many cases of viral meningitis actually occur, but we do know that it is fairly common, probably more common than bacterial meningitis.

Sometimes the disease progresses with further symptoms: nausea and vomiting, stiff neck, sore throat, abdominal pain, muscle pain, photophobia, altered consciousness. Very unusually, it can become life-threatening or cause long-term after effects. Viral meningitis is not usually associated with septicaemia.

Spread

There is no person to person spread with viral meningitis.

+ Response to a case

Although most people recover within 5 days to a fortnight, it may take more time, and for some people the recovery period is prolonged. Antibiotics are ineffective against viruses, so treatment is normally limited to easing the symptoms of the disease (for example, painkillers for headache, anti-emetics to stop vomiting).

Many different viruses can cause viral meningitis, and most people are exposed to some of them during their life without developing meningitis. The most common causes are enteroviruses, mumps, measles, herpes virus or arboviruses. In cases of viral meningitis, it is not always possible to identify the type of virus responsible for the disease.

i Exclusion

There is no exclusion required for viral meningitis. The child can return to school/nursery/childcare setting when well enough to do so.

⊗ Prevention

Aside from MMR vaccination, a good general precaution against viral meningitis is attention to hand-washing, since these viruses usually enter the body via the hand to mouth route. They can also be passed by respiratory contact. Viral meningitis does not normally require public health measures to be taken, because although some of the viruses that cause it are contagious, most people infected have no symptoms, or very mild symptoms.

14.25 Meningococcal Infection: Meningitis and Septicaemia

VACCINE PREVENTABLE (Groups A, C & W135)

Introduction

Bacteria or viruses can cause meningitis. It is an infection of the protective covering of the brain, the meninges, which line the skull.

Septicaemia is an infection of the bloodstream.

Meningococcal infection is infection with *Neisseria meningitidis*, a bacterium which colonises the throat and nose and can cause serious infection, both meningitis and septicaemia. The organisms are widely present in the noses and throats of healthy children and adults. The three presentations of meningococcal disease are:

- Meningitis, when the disease is confined to the covering of the brain
- Septicaemia, when the bloodstream is affected
- A combination of the two, which is the most common presentation

Meningococcal disease affects all age groups but the highest rates are seen in infancy. Cases occur throughout the year but the incidence is highest in winter.

There are three main types, Group B accounts for the majority of cases and Group C accounts for the remainder. Group A is found abroad.

Meningococcal infection is the commonest cause of bacterial meningitis in the UK. Other causes of meningitis include *Streptococcus pneumoniae*, other bacteria and viruses.

Appearance

Symptoms include headache, fever, and loss of appetite, vomiting, stiff neck, and irritability. Older children may experience confusion, drowsiness, stupor and coma. Younger children and infants may have a high-pitched cry, bulging of the fontanelle (soft spot on the top of the head) and convulsions.

There may be a reddish purple skin rash that starts as pinprick spots and then merges to form bruise-like blotches. The rash does not fade when pressed.

Spread

There is no reservoir other than humans and the organism does not survive in the environment. Children acquire the infection from healthy carriers rather than from ill children. The incubation period varies. The person is potentially infectious while the organism remains in the nose or throat: however most cases of infection are acquired from carriers rather than cases.

+ Response to a case

If the GP suspects meningococcal infection the child should be given an immediate antibiotic injection and sent urgently to hospital.

It may be possible to confirm the diagnosis by laboratory tests but not for several days, so often the patient will be treated on clinical grounds alone as if they had meningococcal infection.

Meningococcal infection responds to antibiotic treatment. Unfortunately, the rapid spread of the disease means that sometimes the infection is too advanced to respond to treatment even when the child is admitted to hospital promptly. In severe cases intensive care may be required. Most children will recover fully but a few may have long-term effects. About 10% of patients with the infection will die.

PHE should be informed by the hospital of all cases of meningococcal infection.

Preventative antibiotics are offered to all close household contacts. School, nursery or childcare setting contacts and social contacts do not usually need antibiotics.

If the child attends school, a nursery or childcare setting, the HPT will contact the setting and advise that an information letter is sent to all parents. The HPT will draft this letter and provide the setting with an information sheet. These should be sent out to parents as soon as practical.

If the child attends school the school nurse should be informed.

If a letter is sent to parents then the HPT alerts local GPs by fax. This is because on receiving the letter many parents go along to ask their GP for advice.

If parents need more information they can contact one of the meningitis charities, which operate 24-hour help lines. They can also call NHS Direct or speak with the school nurse.

A letter to parents is not needed for the brother or sister of the case of meningococcal infection.

Parental reassurance

Despite public interest, meningococcal disease is rare. Nearly all children recover in hospital with antibiotic treatment. Only very close family contacts need preventive treatment and that will be arranged by the hospital or PHE. PHE will decide if anyone needs immunisation in the event of a case of group C or W135 infection. Knowing the symptoms and signs of the disease helps. A rash accompanying a fever needs medical attention. Parents should not delay seeking help if they are not certain about the signs and symptoms of the disease. If the child appears ill and parents are worried, then medical attention should be sought sooner rather than later.

i Exclusion

Children who have had meningococcal infection can return to school, nursery or childcare setting as soon as they are well.

Children who are taking preventative treatment can continue to attend school, nursery or childcare setting.

Investigation of a cluster

Nearly all cases of meningococcal infection are single or sporadic, unconnected cases. Fortunately linked cases are very rare. Less than 1% of cases will be followed by a second linked case.

If a second case occurs in the school/nursery/childcare setting or neighbourhood within 30 days of a first case then the HPT will investigate further.

Often the second case turns out not to be a case. Anxiety in the community following the first case has led more parents to take their children to their GP or hospital with other illnesses and often they are admitted as a precaution because of the first case.

If after investigation it appears that the cases are linked then the HPT may recommend a mass antibiotic or immunisation programme. This may be targeted at the whole or only one part of the school/nursery/childcare setting.

⊗ Prevention

Preventative antibiotics are offered to close household contacts of a case. The immediate family is more at risk of spreading the disease than the general population. Only the family needs to receive the protective antibiotic. School, nursery and childcare setting contacts do not usually require antibiotics. Children enjoy natural protection by the presence of bacteria in their nose and throat. It is not helpful to deliberately remove these bacteria by giving antibiotics without good reason.

Immunisation

Immunisation is available for Groups A, C and W135 meningitis.

Group A rarely occurs in this country. Group A immunisation is only needed for travel abroad to certain countries.

Group C vaccine became available in October 1999 and all infants are now offered group C immunisation as part of their routine immunisations.

In 2000 and 2001, there was an increase in W135 infections linked to the annual Hajj pilgrimage to Mecca. Travellers wishing to visit this area must now show receipt of vaccination which includes groups A, C, W135 and Y as a condition of entry.

14.26 Molluscum Contagiosum

Introduction

Molluscum contagiosum is a viral disease of the skin.

Appearance

There are smooth surfaced white or pearly spots 2-5 millimetres in diameter on the skin. In adults the spots mostly occur on the lower half of the body around the genitalia and on the inner thighs. In children they appear on the face and body. The number of spots varies from person to person; they may enlarge and join together. Sometimes the spots are itchy.

Spread

Molluscum contagiosum spreads from an infected person by direct skin-to-skin contact. The time between exposure and the appearance of spots varies. It may be several months. Scratching will encourage spread. The incubation period is 2 – 12 weeks. Transmission is thought to be higher in family settings than community settings such as schools, nurseries and childcare settings.

+ Response to a case

Without treatment molluscum contagiosum lasts between 6-24 months. Any one spot will usually last 2-3 months. If the spots are knocked or scratched they may become reddened and infected but after that they may disappear. The spots are a nuisance but not dangerous. They only need attention if they are troublesome, very numerous or become infected.

ⓘ Exclusion

There is no need to stay away from work or school/nursery/childcare setting. A person with molluscum contagiosum can take part in all normal activities at school including swimming. However it may be sensible to avoid some sports where there is direct contact.

⊗ Prevention

If possible, try to avoid contact with the spots.

14.27 Mumps

VACCINE PREVENTABLE

Introduction

Prior to the introduction of vaccination in 1988, mumps caused epidemics every 3 years. The highest attack rate was in children aged 3 – 9 years. A fall in incidence occurred following the introduction of the MMR. However, since 1998 the incidence has risen amongst unvaccinated older children and adults. Outbreaks have been reported in secondary schools and nurseries and universities and military settings.

For further information see: <http://www.dh.gov.uk/en/publicationsandstatistics>

Appearance

The infection produces fever and parotid swelling (glands in the throat). In some cases the testes, ovaries and meninges may be involved.

Spread

The virus only affects human beings. Spread is by the respiratory route. The incubation period is 12 to 25 days (average 18 days). Mumps is infectious for 6 days before the onset of swelling until 9 days afterwards.

+ Response to a case

All cases should be reported to PHE. There is no specific treatment: affected children should recover at home.

Previously unimmunised contacts should get vaccinated. They should consult their General Practitioner.

❗ Exclusion

Infected children can return to school/nursery/childcare setting five days after the onset of swelling.

⊘ Prevention

MMR (measles, mumps and rubella) immunisation has proved highly effective in controlling mumps in the community.

Outbreaks

Outbreaks of mumps have occurred in groups of teenagers who missed the introduction of the MMR vaccine in 1988 and in children who have never been vaccinated.

14.28 Pneumococcal Infection

Introduction

Streptococcus pneumoniae (pneumococcus) causes ear infections, pneumonia, bacteraemia and meningitis.

Appearance

The symptoms of pneumonia are cough, sputum and fever. Many cases have other illnesses such as chest, heart or kidney disease, immunosuppression or diabetes, which puts them at risk. Blood stream infections have a mortality rate of 20%. The pneumococcus may be present in the nose and throat without causing illness.

Spread

Pneumococci are spread by extensive close contact with human cases or carriers by the respiratory route or direct contact with respiratory discharges.

+ Response to a case

Antibiotic treatment and good cough and sneeze hygiene. Separate affected cases from others with an increased risk of serious disease until 48 hours after treatment has started.

i Exclusion

Children can return to school/nursery/childcare setting after completing 24 hours of antibiotics.

⊗ Prevention

Pneumococcal vaccine became part of the routine childhood immunisation programme from late 2006 (see immunisation schedule, section 9).

The Department of Health issues annual guidance identifying those at risk and requiring vaccination.

14.29 Psittacosis (Ornithosis)

Introduction

Psittacosis is a chest infection caused by a type of bacteria, *Chlamydia psittaci*.

Appearance

There is high fever, headache, generalised aches and pains, coughing and other respiratory symptoms. Signs and symptoms of pneumonia are present later. Mild forms are common. Vets, farmers and poultry workers are often infected without being aware of it. The incubation period ranges from 4 days to 4 weeks.

Spread

Over 140 species of birds harbour *Chlamydia psittaci*. Parakeets, poultry and pigeons are the major sources of human infection. Infection is contracted by the respiratory route by inhaling dried bird faeces or secretions from an infected bird. Human to human spread is rare.

+ Response to a case

The illness responds to antibiotics.

i Exclusion

A child can return to school/nursery/childcare setting when well enough to do so.

⊘ Prevention

- 1 Identify, quarantine and treat infected birds
- 2 Always wash hands after handling birds
- 3 Keep cages and aviaries clean by frequent removal of droppings and replacing contents of water and food trays with clean water and food
- 4 Cleaning should be carried out by a responsible adult
- 5 Use detergent and warm water to clean adjacent surfaces to reduce inhalation of powdered droppings
- 6 Wear gloves while cleaning and disposing of droppings and litter

14.30 Respiratory Syncytial Virus (RSV)

Introduction

Respiratory syncytial virus (RSV) causes bronchiolitis in infants and upper and lower respiratory tract infections in all ages. RSV epidemics occur every winter in December and January. Infants are mainly affected.

Appearance

There is rhinitis, cough and fever. Bronchiolitis (wheeze, breathlessness) develops after a few days. In adults, RSV infection may aggravate asthma or chronic bronchitis and cause pneumonia.

Spread

Humans are the only source of RSV. Spread occurs by the respiratory route or indirectly through contamination of hands or objects by respiratory discharges. The incubation period is 2-8 days with an average of five days.

The infectious period starts shortly before the symptoms. Some infants may shed RSV for many weeks. Immunity is incomplete and short-lived.

+ Response to a case

Good 'cough and cold' hygiene.

① Exclusion

Exclude from school/nursery/childcare setting until recovered.

⊖ Prevention

- 1 Attention to personal hygiene, particularly hand washing and sanitary disposal of nasal and oral discharges
- 2 If practicable separate young infants, frail elderly and immunocompromised persons from people with respiratory infection

14.31 Ringworm (Superficial Fungal Infections, Tinea)

Introduction

Tinea and ringworm are superficial fungal infections of the skin, hair and nails. They are caused by various types of fungus and are named after the parts of the body that are affected, namely body, face, groin, foot, hand, scalp, beard area and nail. Scalp ringworm in children is becoming more common in the UK.

Appearance of ringworm infection

Ringworm of the scalp	Infection with animal ringworm starts as a small red spot, which spreads leaving a scaly bald patch. The hair becomes brittle and breaks easily. The picture with human scalp ringworm varies from lightly flaky areas, often indistinguishable from dandruff to small patches of hair loss on the scalp. There may be affected areas on the face, neck and trunk
Ringworm of the body	Infected areas are found on the trunk or legs and have a prominent red margin with a central scaly area
Athlete's Foot	Affects the feet particularly the toes, toe webs, and soles
Ringworm of the nail	Infection of the nails often with infection of the adjacent skin. There is thickening and discolouration of the nail

Spread

Spread is by direct skin-to-skin contact with an infected person or animal or by indirect contact with objects (seat backs, combs and brushes) or environmental surfaces (showers, changing-rooms) contaminated with hair or skin scales.

The incubation period varies with the site of infection, but it usually takes 3-5 days for infection to become established and a further two to three weeks for symptoms to appear. The infectious period lasts for as long as infection is present: it may be from months to years if untreated.

+ Response to a case

- Confirm diagnosis
- Start effective treatment. Most cases respond to antifungal creams or powders, e.g. clotrimazole, econazole, ketoconazole
- In scalp ringworm and some stubborn cases of body ringworm tablets (usually griseofulvin) are prescribed for up to 12 weeks

- Selenium sulphide lotion (used as a shampoo) is used to limit the spread of infection in combination with oral griseofulvin or other oral anti-fungals such as imidazole, triazole, itraconazole and Terbinafine. It is not recommended for use in children under the age of five for whom an alternative anti-fungal lotion may be used
- If the source is an animal, family pets should be screened by a veterinary surgeon

① Exclusion

Human-source fungi can be transmitted between children at school/nursery/childcare setting but exclusion of an infected child from school/nursery/childcare setting is unnecessary once treatment has started. However activities involving physical contact or undressing, which may lead to exposure of others, should be restricted. There is no evidence that shaving the head aids therapy or reduces the risk of transmission.

Surveillance

Cases of scalp and body ringworm in school age children should be reported to the school nurse. Clusters of cases should be discussed with PHE.

Investigation of a cluster

- Clusters of cases of scalp or body ringworm should be reported to PHE
- Confirmation of the diagnosis is important and contacts may need to be examined to identify cases and carriers. Samples may be requested for culture
- PHE are available to give advice and practical assistance
- Prompt effective treatment should be offered to cases and carriers (see above)
- Exclusion from school/nursery/childcare setting is not normally necessary once treatment has started but may be considered if control proves difficult
- An environmental investigation should be carried out to ensure a high standard of hygiene, particularly in communal changing rooms

⊖ Prevention

- Early recognition of animal and human cases and carriers and prompt effective treatment

Maintain high levels of personal and environmental hygiene with attention to hand washing, care of pets, regular cleaning and maintenance of floors and surfaces at home, in schools, nurseries, childcare settings and in swimming pools and communal changing rooms

14.32 Roseola Infantum (Sixth Disease)

Introduction

Roseola is an infection with human herpes virus-6 (HHV-6).

Appearance

There is fever and rash. Most reported cases of measles and rubella are in fact roseola. It is a disease of infancy and early childhood. Nearly every child has been affected by the time they reach adulthood. The incubation period is 10 days.

Spread

Spread is by the respiratory route.

+ Response to a case

The illness is mild. Affected children can recover at home.

① Exclusion

The child can return to school/nursery/childcare setting when well.

14.33 Rubella (German Measles)

VACCINE PREVENTABLE

Introduction

Rubella is an infection caused by the rubella virus. The main significance of rubella lies in the risk of congenital rubella syndrome (CRS). When a pregnant woman, who is not immune, gets rubella infection, the virus crosses the placenta to the foetus and can cause damage including deafness, cataracts and brain damage.

In the UK the introduction of rubella vaccine for both sexes has resulted in the infection being virtually eliminated. The elimination of the virus from the population and testing women during pregnancy has resulted in the disappearance of CRS.

For further information see: <http://www.dh.gov.uk/en/publicationsandstatistics>

Appearance

Symptoms include mild fever, sore throat or conjunctivitis for 2 - 3 days, before a diffuse patchy red rash may appear. There is often swelling of the lymph nodes. The incubation period is 2 to 3 weeks and the infectious period is from one week before the appearance of the rash and to 6 days after onset.

Spread

Spread is by the respiratory route.

✚ Response to a case

All cases should be notified to PHE. The affected child can recover at home.

ⓘ Exclusion

The child should be excluded from school/nursery/childcare setting for four days from the appearance of the rash.

⊘ Prevention

- 1 A high level of immunity in the population achieved by immunisation will stop the circulation of the virus
- 2 Pregnant women are tested for rubella antibodies as part of their antenatal care. Those who are not immune can be immunised after the birth of their baby
- 3 Pregnant women should seek medical advice if they are exposed to rubella or develop a rash

14.34 Scabies

Introduction

Scabies is a skin problem caused by tiny mites called *Sarcoptes scabiei var. hominis* that burrow in the skin. The pregnant female burrows into the top layer of the skin and lays about 2-3 eggs per day before dying after four or five weeks. The burrows may be several centimetres long but they are very close to the surface of the skin. The eggs hatch after 3-4 days into larvae, which move to hair follicles where they develop into adults. Mating takes place and then the male dies. The life cycle takes 3-4 weeks. The pregnant female is about a third of a millimetre long, slightly bigger than the male.

Appearance

Scabies can affect all social classes without regard to age, sex or personal hygiene.

There may be no sign of a problem for 2-6 weeks after infection but then an allergy develops to the mites and an itchy rash can appear anywhere on the body. If the person has had scabies before the rash may appear within a few days.

The appearance of the rash is quite variable but tiny pimples and nodules are characteristic. With scratching, reddening and infection can occur. The scabies mites are attracted to thick folded skin such as the webs of the fingers but other areas can be affected. Burrows may be seen on the wrist, palms, elbows, genitalia and buttocks.

Occasionally if there is impaired immunity or altered skin sensation large numbers of mites occur and the skin thickens and becomes very scaly. This is crusted, atypical or Norwegian scabies.

Spread

Scabies is infectious until treated. Infectiousness depends on the number of mites on the affected person. Usually there are only 10-20 mites, but there are many more in atypical scabies which is highly infectious.

The human body is the only source of the infection and the spread is from person to person by skin contact. Scabies mainly spreads in families where there is close contact. It may also spread in nursing homes, hostels and day centres. Spread in schools, nurseries and other childcare settings is unusual.

The infectious mite only survives a short time away from the human body, so spread by bedding and clothes is very uncommon. However in atypical scabies, skin scales with mites attached may spread into the environment.

+ Response to a case

- 1 Two treatments with Malathion (aqueous) lotion or Permethrin cream one week apart is recommended
- 2 Inflammation and itching may not disappear for several weeks after treatment because it is due to an allergic reaction, which takes time to settle even after the mite has been killed. This should not be interpreted as a treatment failure and repeating the treatment is not necessary
- 3 There is no need for any special precautions with clothing or bedding other than washing on the hottest wash for the fabric. Any items that cannot be washed in this way should be set aside and not used for 24 hours. Under these conditions mites will quickly become dehydrated and die
- 4 It is important that all close family members in the same house are treated even if they do not have any symptoms. Every one should be treated at the same time to ensure that they do not re-infect each other. Boyfriends and girlfriends should also be treated

i Exclusion

Affected children and staff can return to the setting after the first treatment is completed.

o Prevention

Early recognition and prompt effective treatment is the key to preventing further cases of scabies.

14.35 Scarlet Fever (Streptococcal Sore Throat)

Introduction

A wide variety of bacteria and viruses can cause tonsillitis and other throat infections. Most are caused by viruses but *streptococci* account for 25-30% of cases.

There is acute inflammation extending over the pharynx or tonsils. The illness varies in severity. In severe cases there may be high fever, difficulty in swallowing and tender enlarged lymph nodes.

Certain strains of *Streptococcus* bacteria produce a toxin, which causes scarlet fever in susceptible subjects.

Appearance

The tonsils may be deep red in colour and partially covered with a thick yellowish exudate/coating.

In scarlet fever a rash develops on the first day of fever. It is red, generalised, pinhead in size and gives the skin a sandpaper like texture. The area around the mouth is often spared. The tongue has a strawberry appearance. The fever lasts 24-48 hours. Scarlet fever is now usually a mild illness but is occasionally complicated by ear infections and/or rheumatic fever which affects the heart and kidney problems.

Differentiation of streptococcal tonsillitis from viral sore throat can only be made with certainty by laboratory examination of a throat swab.

Spread

Spread is through inhaling or ingesting respiratory droplets or by direct contact with nose and throat discharges, especially during sneezing and coughing. Spread is also possible by contact with contaminated hands or objects (cups, eating utensils, handkerchiefs) and contaminated food or milk.

The incubation period is 1 - 4 days. A person is no longer infectious after about 24 hours of antibiotic treatment, but if untreated the bacteria may linger in the throat for several weeks.

+ Response to a case

Antibiotics should be started promptly and personal hygiene should be emphasised. The nose and mouth should be covered when coughing and sneezing. Care should be taken with items soiled with discharges. Personal items should not be shared.

ⓘ Exclusion

Children can return to school/nursery/childcare setting 24 hours after starting antibiotics, if well enough to do so.

Surveillance

Cases should be reported to the school nurse.

Investigation of a cluster

Outbreaks are uncommon and should be reported promptly to PHE.

⊗ Prevention

Health education, good hygiene and prompt recognition and treatment of cases.

14.36 Slapped Cheek Syndrome (Parvovirus B19/Fifth Disease/ Erythema Infectiosum)

Introduction

This is a common childhood illness presenting with rash and fever, caused by Parvovirus B19. The illness occurs most often in school age children and the peak season is late winter to early spring. It is also called Fifth Disease, as it is one of the five common infections of childhood.

Infection is common in school children and 60% of the adult population have been infected. Children aged 5-14 are the most at risk. Outbreaks in schools, nurseries and childcare settings usually occur in early spring though cases may be recorded in any month.

Appearance

The illness may only consist of a mild feverish illness, which escapes notice, but in others a rash appears after a few days. The rose-red rash makes the cheeks appear bright red, hence the name 'slapped cheek' disease. The rash may spread to the rest of the body but unlike many other rashes it rarely involves the palms and soles. The child begins to feel better as the rash appears. The rash usually peaks after a week then fades. The rash is unusual in that for some months afterwards, a warm bath, sunlight, heat or fever will trigger a recurrence of the bright red cheeks and the rash itself. Most children recover and need no specific treatment. In adults the virus may cause arthritis.

It is important due to the risk of complications in early pregnancy, and in those people who are immunocompromised.

The virus does not cause lasting damage. The incubation period is usually between 4 and 20 days.

Spread

Spread is by the respiratory route and a person is infectious before the appearance of the rash. A case is no longer infectious once the rash appears.

+ Response to a case

No specific action is needed. Children can return to school/nursery/childcare setting when well enough to do so.

ⓘ Exclusion

If spread is going to occur it will have taken place before the rash appears, so exclusion is not necessary.

Investigation of a cluster

Clusters are common in schools, nurseries and childcare settings. No special action or precautions are usually necessary.

⊗ Prevention

Only people likely to develop complications need to consider special preventative measures. These are women who are in the first 20 weeks of pregnancy, people with sickle cell anaemia and those who are immunosuppressed. They may choose to minimise exposure (i.e. a susceptible teacher in the first 20 weeks of pregnancy may be excluded during an outbreak until she is more than 20 weeks pregnant).

Often exposure has already taken place by the time the cluster is recognised. Once the rash appears the person is no longer infectious. Exposure is as likely in the wider community as it is in school/nursery/childcare setting and many people will already be immune as a result of earlier exposure.

Any woman in the first 20 weeks of pregnancy who has been exposed can discuss the risks with her midwife or obstetrician.

14.37 Staphylococcal Infection including MRSA

Introduction

Staphylococcus aureus is a bacteria that is commonly found in the noses and on the skin of healthy people. When *Staphylococcus aureus* is present on the body without causing illness it is called 'colonisation'. At any given time 20 – 30% of the population are colonised with *Staphylococcus aureus*. These bacteria can occasionally get through the skin barrier and cause simple, uncomplicated skin or soft tissue infections. Although most such infections are not a problem, *Staphylococcus aureus* can cause more serious infection in those with breaks in the skin (for example after surgical procedures).

Staphylococcus aureus with resistance to the antibiotic meticillin (or flucloxacillin) are known as **M**ethicillin **R**esistant **S**taphylococcus **A**ureus or MRSA. Resistance means that a particular antibiotic will not work against the bacteria (sensitivity means that the antibiotic will work against the bacteria).

Appearance

Infection

Symptoms of infection vary depending on the part of the body that is infected. Skin infections (the most common site) typically result in local redness and warmth of the infected area with or without pus. Such infections include boils, impetigo and wound infections. Most infections are uncomplicated but very occasionally the bacteria can get into the bloodstream and other body sites and cause severe infection.

Spread

The source of *Staphylococcus aureus* could be the patient's own flora or from other colonised or infected individuals. The bacteria (sensitive and resistant strains) are spread from individual to individual usually by direct contact (especially on hands).

+ Response to a case

(Prevention and control)

Hand washing is the most effective means of preventing the spread of infection. Carers and those who have contact with secretions from the nose, tracheostomies, or skin / wound drainage from infected or colonised individuals should wash their hands thoroughly after contact.

① Exclusion

Recommendations

- 1 Children known to be colonised with MRSA in the nose or skin do not need to be excluded from the school/nursery/childcare environment
- 2 Children known to be colonised with MRSA who have draining wounds or skin sores should only be excluded from school/nursery/childcare setting if the wounds cannot be covered, contained, or dressings maintained intact and dry
- 3 Consideration needs to be given before placing children colonised with MRSA into a room environment that may contain other children that may be susceptible to significant *Staphylococcus aureus* infection, these include:
 - Children with indwelling IV lines (e.g. Broviac) or other devices (e.g. PD catheters)

There may be concern about other children with medical conditions that may make them susceptible to *Staphylococcus aureus* infection. In such cases decisions will have to be made about placement: considerations include:

- Specific needs or characteristics of the children
 - Child colonised with MRSA
 - Vulnerability of other children within the classroom
- The room setting
- The number and types of children
- Room staffing
- The ability to implement precautions that need to be taken to minimise the risk of transmission
- Availability of alternative provision

Assessment may be complex. The consultant in charge should provide medical advice, and an on-site assessment should be undertaken by infection control with the school nurse and an appropriate member of staff.

⊘ Prevention

General recommendations

- 1 Use of protective equipment
 - a Disposable gloves for contact with secretions
 - b Gloves and plastic apron when suctioning a tracheostomy site
 - c If there is a likelihood of spraying of respiratory secretions resulting from suctioning, face and eye protection is recommended

- 2 Hand hygiene
 - a Wash hands thoroughly with soap and warm running water and dry on paper towels after contact with secretions from the nose, tracheostomy or wound drainage and after removing gloves
 - b Alcohol hand rub can be used as an alternative to hand washing if the hands are visibly clean
- 3 Perform suctioning at a distance from others in the classroom
- 4 The child's environment should be cleaned routinely and immediately if soiled with body fluids or secretions. Disposable cloths should be used
- 5 Any change in secretions (i.e. amount or colour) or increased cough in the child with a tracheostomy indicates the need for clinical evaluation and consideration of exclusion from the room/classroom until signs and symptoms resolve and/or adequate therapy has been completed. Similarly clinically infected wounds may require antibiotic therapy.

14.38 Thread Worms

Introduction

Threadworm (pinworm) infection is an intestinal infection with *Enterobius vermicularis*, a nematode worm. It is very common in temperate regions particularly amongst children.

Adult worms live in the small intestine. Mature female worms migrate through the anus and lay thousands of eggs on the perianal skin. Infective embryos develop within 5-6 hours and these are transferred to the mouth on fingers as a result of scratching. Larvae emerge from the eggs in the small intestine and develop into sexually mature worms.

Re-infection is common and infectious eggs are also spread to others directly on fingers or indirectly on bedding, clothing and in environmental dust. Adult worms do not live for longer than six weeks. Direct multiplication of worms does not take place and eggs must be swallowed for new worms to develop although retro-infection may occur as a result of hatched larvae migrating back through the anus from the perianal region.

Appearance

Some infections give no symptoms but there may be perianal itching and sleep disturbance.

Spread

The infective larvae are transferred to the fingers and then to the mouth of another person directly or indirectly. Infectiousness lasts until the worms are treated.

+ Response to a case

Treatments such as mebendazole or piperazine are effective but must be combined with hygienic measures to break the cycle of infection. All household members should be treated.

i Exclusion

Exclusion is not necessary. Treatment recommended for the child and household contacts.

⊗ Prevention

Prevention is by prompt recognition and treatment of cases and their household contacts, health education and attention to personal and environmental hygiene, particularly hand washing

14.39 Thrush (*Candida*)

Introduction

The skin and the mucous membranes are the most common sites of involvement in infections caused by the various species of *Candida*, the most common being *Candida albicans*. In most cases the infection is superficial and acute: however in neonates and immunocompromised patients of all ages the infection may be invasive and has the potential to cause widespread or chronic infection.

Appearance

Oral thrush is the most common infection caused by *Candida*. This is an acute inflammation of the tongue and oral mucous membranes that is manifested as white or greyish-white plaques on the mucous membranes of the mouth. In severe cases the lesions may spread to the angles of the mouth causing fissures and cracking to occur. The plaques adhere themselves to the mucosa and attempts to remove them can result in bleeding and tender erosion of the mucosa.

Nappy, underarm and groin areas are the most common sites for *Candida* infection of the skin. Regardless of the area involved, the clinical appearance is similar: the affected skin is fiery red and depending on the duration of the infection, contains lesions that range from slightly raised red papules to discrete eroded lesions with a red raised border. *Candida* may also infect the skin of the hands and feet, particularly in infants and children who suck their thumbs and other digits. The lesions are similar to those on other areas of the body.

Spread

The mode of spread is dependent on the age of the patient. Newborns generally acquire the organism from their mother's colonised vagina during the birth process. By contrast, infants and older children acquire the infection from their mother's skin or hands or from unsterilised teats or bottles. Additionally, in situations where there are breaks in the mucosal or skin barrier, children may acquire the organism from infected individuals.

Incubation period

The incubation period for *Candida* infections is not known.

+ Response to a case

Superficial skin infections may be treated with imidazole anti-fungal creams (Clotrimazole, econazole, ketoconazole, miconazole and sulconazole). Nystatin cream is also effective against *Candida* infections.

Oral *Candida* infections respond well to nystatin. For unresponsive infections imidazole, fluconazole or triazole can be given.

Children who wear nappies should have them changed frequently. The skin should be cleaned with soap and water, and dried thoroughly. Occlusive (air and water-tight) pants and baby powders should be avoided.

ⓘ Exclusion

Affected young children may attend school, nursery or childcare settings without limitation.

Recommendations for older children

Careful hygienic procedures should be followed by both pupils and teaching staff. If the infected child is on treatment then there is little risk to other children.

Recommendations for staff

Immunosuppressed staff should avoid contact with infected children but may work with uninfected children, as transmission would be via direct contact with a case. Healthy staff are at little risk of acquiring the infection provided effective hand-washing techniques are adhered to.

Parental advice

Parents of children who are immunocompromised should be informed of cases of *Candida* so they can consult their child's physician to obtain advice about the management of their child.

⊗ Prevention

Care should be taken with the cleaning and sterilisation of feeding equipment and the cleaning and disinfection of toys that become contaminated by putting in babies' mouths.

Scheduled hand washing techniques should be adhered to.

Nappies should be changed frequently and the nappy area cleaned with soap and water, and dried thoroughly. Baby powders should be avoided.

14.40 Tuberculosis

Introduction

Tuberculosis (also known as TB) is an infection caused by *Mycobacterium tuberculosis*. It can affect any part of the body but particularly the lungs.

Appearance

Early infection with pulmonary (lung) TB may pass unnoticed: later there will be cough with sputum (phlegm), loss of appetite, loss of weight, fever, sweating, breathlessness and pains in the chest.

Tuberculosis in a part of the body other than the lungs may produce a lump or swelling which can be painful.

Children under the age of fifteen years usually have a type of tuberculosis known as primary infection. Most of these infections pass unnoticed: the infected children do not become ill and they are not infectious to others.

Tuberculosis is diagnosed by chest X-ray and by examining a sample of sputum under the microscope if the patient has a productive cough. A skin test called a Mantoux test, which involves a pinprick on the forearm, will show whether or not there has ever been tuberculosis infection in the past. It will also indicate previous exposure to mycobacterium i.e. BCG vaccination or from the environment.

Spread

Tuberculosis is spread by adults and older children who develop TB of the lungs (pulmonary tuberculosis). Tuberculosis germs are present in their sputum (phlegm) and are inhaled into the lungs by someone else if there is prolonged close contact and especially if there is coughing. TB is spread by close contact and so normally spreads in families rather than in school/nursery/childcare settings.

When they are inhaled the germs may be destroyed by the immune system and cause no further problems. Otherwise an illness may develop after a few weeks or months. Sometimes the germs remain dormant in the body but reactivate after several years, particularly if the immune system is weakened by some other illness, or in old age. The incubation period is 4-12 weeks. Young children rarely transmit the disease, even if they have a positive skin test. Adults are infectious if they have active pulmonary TB.

+ Response to a case

1 With modern antibiotics tuberculosis can be completely cured and it is rare for there to be any lasting ill effects. The only disadvantage with treatment is that it must be taken every single day for between six to nine months or longer. However a few weeks after starting treatment most patients can get back to normal activities. Most patients can be treated at home as only a small proportion will need hospital admission

- 2 Treatment for two weeks usually makes a patient non-infectious but they require treatment for a longer period to recover fully from the illness.
- 3 Someone with tuberculosis germs in the sputum may be infectious to other people. That person can prevent the spread of infection by covering their mouth and nose with a tissue when coughing and disposing of any sputum hygienically
- 4 Close contacts of someone with tuberculosis will be offered a check-up. Further testing may be offered including X-rays, skin and blood tests
- 5 When an infectious case of TB occurs in a school, nursery or childcare setting, the Community TB Nurse may arrange to screen staff and pupils. Depending on the circumstances adult staff and children may be offered further testing

❗ Exclusion

Children with infectious TB can usually return to school/nursery/childcare settings after two weeks of treatment if well enough to do so.

🚫 Prevention

Any signs or symptoms suggestive of TB should be investigated without delay.

14.41 Warts (including Verrucae)

Introduction

Warts are caused by human papilloma viruses (HPV). They may occur anywhere on the body and usually disappear spontaneously.

Warts are common in childhood with 4–5% of school children having warts at any one time.

Appearance

Four types of wart are recognised: common warts (verrucae vulgaris); plantar warts (verrucae plantaris); flat or planar warts (verrucae plana) and condylomata acuminata (genital warts). Warts are more common in immunocompromised people.

Spread

Warts spread by direct contact or indirectly via contact with contaminated floors. Autoinoculation occurs as a result of scratching. The incubation period ranges from 1 month to 2 years, and the person will remain infectious as long as the warts persist.

+ Response to a case

Nearly all warts resolve spontaneously in time. However treatment may be necessary because of pain, mechanical interference, immunosuppression, fear of malignant change or for cosmetic reasons.

i Exclusion

Children with warts do not have to stay away from school/nursery/childcare settings. Affected children can go swimming but plantar warts should be covered if practicable.

Pool hygiene is more important in preventing the spread of plantar warts than stopping children using the pool or other leisure facilities.

⊘ Prevention

Health education, environmental hygiene in swimming pools and other communal areas and avoiding direct contact with warts if practicable may reduce spread.

14.42 Whooping Cough (Pertussis)

VACCINE PREVENTABLE

Introduction

Whooping cough (Pertussis) is an infection caused by *Bordetella pertussis*, a bacteria.

In 1957 national whooping cough immunisation commenced. There were large epidemics in the 1970's and 1980's when vaccine acceptance fell due to (unfounded) concerns about vaccine safety. The uptake of vaccine has now improved to nearly 90%.

Appearance

The incubation period is 7-10 days. There is fever, bouts of coughing, whooping and vomiting. The cough may last for 2 -3 months. Young infants do not usually whoop and coughing spasms may be followed by apnoea (stop breathing). Whooping cough is very infectious early in the illness until about 3 weeks after the onset of the coughing bouts. With antibiotic treatment the infectiousness can be limited to five days after the start of treatment.

Spread

Human beings are the only host. Whooping cough spreads by the respiratory route.

+ Response to a case

Affected children should be treated at home.

Immunisation should be offered to unimmunised children who have been exposed to a case. Exclude unimmunised children and infants from contact with infected cases.

Within households, preventative antibiotics may be considered for younger infants who have not yet been immunised. In some cases it may be necessary to give antibiotics within a household if there are vulnerable/susceptible adults or children.

ⓘ Exclusion

A patient should not return to school/nursery/childcare settings until they have had five days treatment with antibiotics and they feel well enough to do so, or 21 days from the onset of illness if there is no antibiotic treatment.

⊖ Prevention

An effective vaccine is offered routinely to infants. High levels of immunisation have been achieved.

15

Glossary of Terms

AIDS	Acquired Immunodeficiency Syndrome caused by HIV
Anaemia	A lack of red blood cells, or their haemoglobin (the oxygen carrying substance) in blood
Anaerobic	The absence or near absence of oxygen
Anaphylaxis	A severe allergic reaction characterised by collapse, shock, poor pulse, sometimes with wheezing and swelling of the soft tissues
Antibody	A protective protein in the blood formed in response to the introduction into an individual of a micro-organism or toxin (called an antigen). Antibodies combine with their specific antigens to neutralise toxins or destroy bacteria
Antigen	Any substance which can cause an immune response from the body, such as stimulating the formation of antibodies
Attack rate	See Incidence rate
Attenuated vaccine	A live vaccine which is derived from a disease-causing organism but altered to render it harmless
Bacteria	Very small, self-contained micro-organisms, which are often shaped as rods or spheres (cocci)
Bactericidal	Able to kill at least some types of bacteria
Barrier nursing	Strict nursing in hospital with an individual room, use of masks, gowns and gloves by all entering the room and hand washing after contact with the patient or potentially contaminated material before attending to other patients
Booster	A term meaning a subsequent immunisation to an initial course of injections, e.g. pre-school booster, tetanus booster
Carrier	A person harbouring an infectious agent bacteria, virus, parasite etc. who appears quite well but has the potential to infect others. A short carrier state is common after many diseases but may be long term e.g. typhoid fever
Case	A person in the population identified as having a particular disease
Cleaning	The removal, by scrubbing and washing with hot water, soap or detergent or by vacuum cleaning, of infectious agents and of organic matter from surfaces on which infectious agents may find favourable conditions for surviving or multiplying
CNS	Central nervous system
Colonisation	The phenomenon of micro-organisms becoming established in certain environments (especially in the intestinal tract of humans or animals) without necessarily giving rise to disease
Commensal	An organism which derives benefit from living in close physical association with another organism, the host, which derives neither benefit nor harm from its relationship with the commensal
Communicable disease	A disease that is capable of being transmitted from one person to another
Communicable period	The length of time a person carries the infectious agent of a contagious disease
CSF	Cerebrospinal fluid
Disinfection	The killing of infectious agents outside the body by chemical or physical means

Endemic	A disease that is always present in a community e.g. malaria in India, whooping cough in England
Enteric precautions	Measures taken to limit spread of gastrointestinal infections. This includes wearing gloves and washing hands after contact with the patient or potentially contaminated articles before contact with another person. Masks are unnecessary, but aprons are needed where soiling is likely. Where possible an individual toilet facility should be used or care taken to clean a shared toilet facility after use
Enterotoxin	See Toxin
Epidemic	A large-scale outbreak of disease
Epidemiology	The study of patterns of disease and factors affecting health and disease in populations and the application of this study to the control and prevention of disease
Erythematous	Red appearance of skin
Exotoxin	See Toxin
First degree relations	For a person this includes their full brothers and sisters (siblings) and natural parents, not more distant relatives
Host	An individual (human or other species) who is infected with an organism, with or without symptoms
IgA, IgG, IgM	Different types of immunoglobulin (antibody) found in body fluids
Immune individual	A person who has specific protective antibodies or cellular immunity as a result of previous infection or immunisation
Immunisation	The process of giving a vaccine to obtain immunisation or protection against the corresponding disease
Immunity	The ability of an individual to resist disease, especially infection. Can be natural, active or passive
Immunity passive	Specific immunity acquired artificially by injection of a preparation of antibodies, or naturally through the placenta from mother to foetus and via colostrum and breast milk from mother to baby
Immunity, active	Immunity acquired during life as a result of infection or immunisation
Immunity, herd	The level of immunity in the general population against a particular disease
Immunity, natural	The non-specific immunity, which depends on genetic and non-specific, factors (e.g. mucus secretions and antiseptic agents in sweat) and makes different species susceptible to some organisms and resistant to others
Immuno-compromised	An individual whose immune system is impaired and unable to mount a normal immune response
Immuno-globulins	A class of proteins which are antibodies and found in the blood
Immuno-logical tests	Tests based on antigen-antibody reactions
Incidence	The rate of new cases of a disease in a population
Incubation period	The time interval between initial contact with an infectious agent and the appearance of the first sign or symptom of the disease in question

Index case	The first case in an outbreak of infectious disease
Infection	The entry and development or multiplication of an infectious agent in the body. In many cases, illness does not take place. In other words, infection can occur without leading to infectious disease
Infectious agent	An organism (virus, rickettsia, bacteria, fungus, protozoa) that is capable of producing infection or infectious disease
Infectious disease	A disease affecting humans which is caused by an infectious agent
Infectious dose	The amount of infectious material, e.g. number of bacteria, necessary to produce an infection
Infectious period	The length of time a person who is infectious can pass the infection on to others
Microflora	The microbial population of an area such as the gastro-intestinal tract
Mortality rate	The number of deaths occurring amongst a defined number of people in a given time period
Outbreak	Two or more cases of disease linked to a common source
Parenteral	Given by injection
Pathogen	Any biological agent that can cause disease
Pathogenesis	The manner in which a disease develops
Pathogenic	Producing disease
Plasma	The colourless fluid part of the blood in which the cells are suspended
Prevalence	The proportion of a population having a specific disease at a given point in time
Prodromal	Relating to the period of time following the incubation period when the first symptoms of illness appear
Prophylaxis	The process of protecting an individual with a vaccine or an antibiotic
Protozoa	A unicellular, microscopic parasite
Pyrexia	Fever
Rash, confluent	A rash where the spots join up
Rash, discrete	A rash where the spots stay separate
Rigor	A reaction involving shaking associated with high fever
Rubella	German Measles
Sequelae	A condition(s), which follows the occurrence of a disease, e.g. late complications, permanent ill effects
Sero-diagnosis	Identification of a micro-organism by means of serological tests
Serology	Looking for antibodies in an individual's blood as evidence of infection
Serotyping	A method of distinguishing varieties of bacteria (serotypes) by defining their antigenic properties on the basis of their reaction to known antisera (serum antibodies). A number of serotypes constitute a serogroup
Serum antibodies	Antibodies found in the fluid fraction of coagulated blood

Species	A classification of organisms within a genus, which have similarities and can be further, sub-divided into sub-species
Sporadic case	A single case of disease apparently unrelated to other cases
Susceptible individual	An individual who has no pre-existing immunity or resistance to infection, who is, therefore, liable to become infected
Toxin	A poison produced by an infecting organism
Triple vaccine	The immunisation incorporating diphtheria, tetanus and whooping cough (DTP)
Typing	Any method used to distinguish between closely related micro-organisms
Vaccine	Vaccines contain attenuated (made less intense) live or dead organisms, or parts of organisms selected to induce antibody resistance to infection
Virulence	Virulence defines the severity of the symptoms in the host. A highly virulent strain would cause severe symptoms in a susceptible individual, while a less virulent strain would produce relatively less severe symptoms in the same individual
Virus	A group of infectious agents, which are much smaller than bacteria. They are responsible for some of the most important diseases affecting human beings, e.g. most childhood illnesses

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Appendix B: Teeth cleaning guidance

- Early Years and Childcare staff must wash their hands prior to and following each tooth brushing session. This includes prior to handling or coming into contact with toothbrush programme equipment, e.g. brushes, toothpaste, storage containers, etc. As is usual practice, cuts, abrasions or breaks in the skin should be covered with a waterproof dressing.
- Toothbrushes should be labelled for each child. It is recommended that this is done with a permanent marker pen as the application of labels or stickers reduces the ease of effective cleaning.
- Where appropriate, based on tasks undertaken prior to brushing their teeth, children should undertake hand washing as required.
- If staff are likely to come into contact with aerosols from brushing or items contaminated with saliva they should wear a single use disposable plastic apron and gloves.
- It is recommended that each child has their own toothpaste which should again be labelled with a permanent marker. If a decision is made that toothpaste can be dispensed from a single tube then extreme caution is required to ensure that toothpaste to brush contact does not occur and all staff must be aware of the increased risks of cross contamination and how they can be minimised. (Toothpaste could be dispensed on to a clean surface e.g. plate for each child and picked up on their brush.) A toothpaste tube allocated for each child is the preferred option.
- An appropriate sink should be designated for cleaning of toothbrushes and associated items. This needs to be in a clean area, e.g. not in a toilet/nappy change area. Ideally settings should have sinks available that are designated for tooth brushing and personal hygiene. Where only one sink is available, settings should be encouraged to work towards the provision of a second dedicated sink. Sinks should be cleaned appropriately as part of locally agreed policies.
- Care should be taken when cleaning items to ensure that brushes are cleaned individually to avoid cross contamination. Toothbrushes should not come into contact with the sink. They could be rinsed by the children (under supervision) or by the supervisor once tooth brushing is completed. It is imperative that brushes do not come into contact with each other during this process and care should be taken not to touch the head of the brush during this process. If brushes require drying to remove excess water this should be undertaken for each brush with a single use disposable paper towel prior to leaving them to air dry. Shaking excess water off brushes following rinsing increases the risk of cross contamination and is therefore not recommended.
- Ensure brushes are replaced in an upright position in the storage system to allow them to air dry. Brush heads must never touch and must not drip on one another. Depending on the storage system in use lids can be replaced at this stage provided there is sufficient air circulation. Wet brushes should not be stored in sealed containers.
- Paper towels should be used to mop up any drips from the storage system and be disposed of immediately in the appropriate waste stream along with any other paper towels or tissues used by the children.
- Storage systems without manufacturers' covers should be stored within a designated trolley or in a clean dry cupboard. Storage systems must not be kept within toilet areas: they should be stored in a clean area, protected from contamination and out of reach of children.

- All storage equipment should be checked before and after each use to ensure that it remains visibly clean and free from dust and debris. Cleaning of storage equipment should be undertaken at least weekly or when visibly soiled. Staff should wear appropriate protective clothing and clean equipment with a general purpose detergent solution and warm water, then rinse and dry thoroughly.
- Storage equipment must be replaced immediately if cracks, scratches or rough surfaces develop.
- If toothbrushes are accidentally dropped on the floor, staff need to consider whether it is appropriate to wash each brush and dry thoroughly prior to use or to dispose of it in the appropriate waste stream.

Appendix C: Management of healthcare waste

Community healthcare can take many forms and occurs in various environments including in school/nursery/childcare settings.

Where waste is produced that is classified as clinical/hazardous/infectious waste (see below), a risk assessment should occur to ensure it is segregated, described, classified and disposed of appropriately. All clinical/hazardous waste must be correctly bagged, sealed, tagged and stored appropriately prior to collection by a licensed disposal contractor for incineration /alternative treatments as appropriate.

Waste segregation and disposal

Type of waste	Includes	Method of disposal
Domestic waste	Normal household rubbish	Black bag For disposal by Local Authority (Landfill)
Infectious waste (clinical)	Waste soiled with blood or body fluids such as swabs, dressings, used gloves	Orange bag Licensed / permitted treatment facility
Offensive waste	Offensive / hygiene waste e.g. human hygiene waste	Yellow bag with black stripe Deep Landfill
Sharps waste with no residue medicine	Fully discharged needles & syringe units	Yellow container orange lid Use an appropriately sized, dedicated sharps box that complies with BS7320 and UN3291
Sharps waste with residue medicine	Partially discharged needles & syringe units	Yellow container, yellow lid Use an appropriately sized, dedicated sharps box that complies with BS7320 and UN3291
Glass and Bottles		Recycling bin or a strong cardboard box lined with a heavy-duty clear plastic bag for bottles and breakages marked Glass and Breakages only
Aerosols	Aerosol cans, which if incinerated or compacted may lead to explosion	A strong cardboard box lined with a heavy-duty clear plastic bag marked Aerosols Only.

Hazardous /clinical waste handling, storage & disposal

- Bags must be filled to no more than 2/3rds capacity, and securely fastened with adhesive tape or plastic security grips to prevent risks of spillage of contents
- Hazardous/clinical waste bags must be labelled to identify their source (i.e. name of school/nursery), and dated appropriately. Coded closure tag systems are available and may be used

Hazardous/clinical waste bins must have a close fitting, foot operated lid and be

- Accessible in all clinical and treatment areas (medical room/sick bay)
- Fully enclosed and of a suitable size for the bag used
- Labelled or colour coded to clearly identify contents

- Hazardous/clinical waste must be stored in a designated secure area, separate from domestic waste prior to collection by a registered waste disposal company

- The storage area must be locked and inaccessible to unauthorised persons, vermin and free from infestation

- This area should be sited on an impervious hard surface with good drainage

Waste handling

All staff required to handle waste must be trained to:

- 1 Understand the categories of waste and segregation policy
- 2 Seal bags effectively and ensure bags are labelled appropriately
- 3 Handle filled bags by the neck only
- 4 Know the procedure in the event of spillage

An area which produces hazardous/clinical waste must ensure that a named individual is responsible. This responsibility includes ensuring that all disciplines and grades of staff have undertaken instruction in the safe handling and disposal of waste.

Disposal of waste

- Regular collection is essential to avoid accumulation

- The individual responsible for the establishment producing the waste is legally responsible for transfer of hazardous/clinical waste and must ensure that:
 - Transfer is only made to an authorised person
 - That a written description of the waste is produced
 - Carriers of waste hold the appropriate registration and licences to dispose of the waste

Accidents and incidents

- 1 All accidents and incidents should be reported to the line manager and the occupational health & safety section. An accident / injury form must be completed

- 2 If an accident occurs when handling hazardous waste or sharps, the relevant guidelines should be followed, e.g. inoculation injury guidelines (section **6.2.4**) and/or body fluid spillage guidelines (section **6.2.2**)

Appendix D: Recommended exclusion periods for childhood infections

DISEASE	INCUBATION PERIOD	PERIOD WHEN INFECTIOUS	EXCLUSION PERIOD OF INFECTED PERSON	EXCLUSION OF CONTACTS
Athletes Foot	Unknown	Whilst active lesions present	No exclusion but treatment recommended	None
Chicken Pox	11 – 21 days	1 to 2 days before to 5 days after spots develop	Until all vesicles have crusted over	None *Female staff see below
Conjunctivitis	Varies	None	No exclusion but treatment is recommended	None
Cytomegalovirus (CMV)	3 – 8 weeks	Someone with CMV infection may shed the virus in body fluid secretions for years	None	None
Diarrhoea & Vomiting	Varies	Whilst having symptoms of diarrhoea and/or vomiting	Until symptom free for 48 hours	None
Diphtheria	2 – 5 days	Variable but usually 2 weeks or less	Until advised clear to return	HPT to advise
E. coli 0157	1 – 6 days	May be up to 3 weeks in children	PHE to advise	HPT to advise
Glandular Fever	4 – 6 weeks	Whilst virus is present in the saliva	None	None
Hand, Foot & Mouth Disease	3 – 5 days	From 2 – 3 days before to a few days after the appearance of rash	None but contact PHE if large numbers (The presence of a rash does not indicate infectivity)	None
Head lice	Eggs hatch in 7 – 10 days	Whilst lice or eggs remain alive on host	None. Parents should be advised to treat their child	None but contacts should be checked
Hepatitis A	2 – 6 weeks	From 14 days before to 7 days after the appearance of first symptoms	Until 7 days from onset of jaundice symptoms and the person feels well	HPT to advise
Hepatitis B	6 weeks to 6 months	One month before symptoms to 1 – 3 months after, however it is not infectious under normal nursery conditions (universal precautions should be adhered to)	Until person feels well	None
Hepatitis C	2 weeks to 6 months	As Hepatitis B	Until person feels well	None
Herpes Simplex (cold sore)	2 – 20 days	None	None	None
HIV	1 – 12 weeks	Not infectious under normal nursery conditions (universal precautions should be adhered to)	None	None
Impetigo	4 – 10 days	Whilst lesions present	Until lesions crusted/healed or 48 hours after starting antibiotics	None
Influenza	1 – 3 days	Adults 1 day before until 5 days after onset Children 3 days before until 9 days after onset	Until recovered	None

DISEASE	INCUBATION PERIOD	PERIOD WHEN INFECTIOUS	EXCLUSION PERIOD OF INFECTED PERSON	EXCLUSION OF CONTACTS
Measles	7 – 14 days	From a few days before, to 4 days after the appearance of the rash	4 days from the onset of the rash	None – female staff, see text below chart
Molluscum Contagiosum	19-50 days	Whilst lesions are present	None	None
Mumps	12 –25 days (average 18)	From 6 days before to 9 days after onset of illness	5 days from onset of swelling	None
Poliomyelitis	3 – 35 days (average 7–14)	Whilst organism is present in the stools	As advised by HPT	HPT to advise
Ringworm (scalp / body)	2 – 4 weeks	Whilst active lesions present	Exclusion is not required but it is recommended that treatment is commenced before return to school/nursery/childcare setting (Symptomatic pets should also be treated)	None
Rubella (German Measles)	14 – 21 days	7 days before to 4 days after onset of rash	4 days from onset of rash	None *Female staff see below
Scabies	Few days to 6 weeks	Whilst mites remain alive on the host	Until 1 st treatment completed	None Treat contacts
Scarlet Fever	1 - 3 days	Day sore throat starts to 24 hours after commencing antibiotics	24 hours from commencing antibiotics	None
Shingles	Reactivation	Until 7 days after rash appears	Exclude only if rash weeping and cannot be covered. (Can lead to chicken pox in susceptible children)	None
Slapped Cheek (Parvovirus/Fifth Disease)	4 – 20 days	Before the rash appears (but probably not afterwards)	None (once rash has developed)	None *Female staff see below
Threadworms	2 – 6 weeks	Whilst eggs still being produced (Eggs can survive for 2 weeks in the environment)	None Treatment advised	None Treatment advised
Tuberculosis	2 – 10 weeks	Only when sputum contains bacteria	Until advised to return by PHE	None. Close contacts may be screened
Warts and Verrucae	2 – 3 months	Whilst warts are present	None	None
Whooping Cough (Pertussis)	7 – 10 days	2 – 4 days before until 21 days after start of coughing	5 days from commencing antibiotic treatment or 21 days from onset of illness if no antibiotics	None

Most adults are likely to be immune to common childhood infections and therefore they are unlikely to cause any problems when a pregnant woman is exposed.

For advice on specific infections see below:

Chicken Pox: can affect the pregnancy of a woman who has not previously had the disease. If a woman is exposed in the pregnancy she should inform her GP or midwife

German Measles (Rubella): although rubella is a rare infection, if a pregnant women is concerned she is not immune and is exposed during pregnancy she should inform her GP or midwife.

Slapped Cheek (Parvovirus/Fifth Disease): occasionally, parvovirus can affect an unborn child. If a woman is exposed in pregnancy she should inform her GP or midwife. **Measles:** measles during pregnancy can result in early delivery or even loss of the baby. If a pregnant woman is exposed she should inform whoever is giving antenatal care to ensure investigation.

Additional Information / Notes