Infection Prevention and Control Guidance for NHS and non-NHS Community and Primary Care Settings

Health Protection Scotland

Literature Review Strategy

Date of Issue: July 2009
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1. Literature reviewing process

1.1 Health Protection Scotland (HPS) Standard Infection Control Precautions Model Policies

The majority of evidence included in the “Infection Prevention and Control Guidance for NHS and Non-NHS Community and Primary Care Settings” has been taken from the HPS Standard Infection Control Precautions (SICPs) model policies and associated literature reviews (HPS, 2009). The model policies are evidence-based documents, which are written based on the most up to date scientific literature available at the time of publication.

Information in the field of infection prevention and control is constantly evolving with publications of new peer reviewed scientific studies and literature. It is therefore vital that the model infection control policies are subject to regular review. Since the publication of the first version of these policies, the SICPs have been reviewed annually to ensure that the most up to date evidence has been considered.

The full literature reviews on which these recommendations are based can be found at: http://www.hps.scot.nhs.uk/haiic/ic/standardinfectioncontrolprecautions-sicps.aspx?subjectid=00D

Outline of SICP Annual Review Process

The review of the policies involves the following processes:

- Updates from the initial literature review:
  - The original search strategy used by HPS Infection Control Team, set up a mechanism of auto alerts, which are automatic and identify new publications from peer-reviewed journals, which are then retrieved and checked for relevance.
- Repeating the original search strategy:
  - This process utilises the same databases and keywords but changes the search period to the previous year. This ensures that any relevant scientific literature, which has not been highlighted by the auto alert process, is identified and retrieved.
- Searching for new guidance documents produced nationally and internationally
- Quality Control Process:
  - Information scientists then initially check all the retrieved scientific literature for relevance.
- Critical appraisal of identified literature:
  - The retained literature is then subject to defined methods of critical appraisal. These are: the ROE model for critical appraisal of scientific studies, SIGN 50 methodology for systematic reviews and meta-analyses and the AGREE instrument for the evaluation of guidance documents.

Following this, the review process is completed by:

- Production of a summary of the systematic review of the literature, which is produced using the literature review template used for the original model policies. This summarises the scientific findings and identifies any potential recommendations for change to the model policies.
- The literature review template also includes a section on practical applications and resource implications, therefore any review that highlights recommendations for change in policy are then passed to an ICN, to assess the evidence and decide whether any potential changes can be translated to practice.
- The original model policies are then reviewed with reference to any change(s) identified during the process.

The recommendations included in the SICPs have been designed to be applicable for all healthcare settings. Some minor modifications may be required for specific settings.

**NB.** The references from the SICP literature reviews have been included in this document (See Section 2) to allow readers to refer to the primary literature if required.

### 1.2 Additional searches for specific aspects of community care

In addition, a further search was performed in order to assess whether “setting specific” recommendations were required in addition to the SICPs.

A scoping search (see Section 3) was undertaken for both scientific papers and guidance documents. The findings of this search were collated by the infection control scientists and then evaluated by the guidance development group and as a result a number of key settings were identified which required additional information and recommendations in the final guidance. As a consequence, a number of additional scoping searches (see Section 4) relevant to the identified settings were conducted.

<table>
<thead>
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<th>Additional scoping searches relevant to the identified settings</th>
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<tbody>
<tr>
<td><strong>Dental</strong></td>
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<tr>
<td>- Re-sheathing of anaesthetic needles</td>
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<tr>
<td>- Management/disposal of waste in a dental environment including teeth</td>
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<td>- Blood borne virus screening of staff</td>
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<td>- Traceability of instruments</td>
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<tr>
<td><strong>Domiciliary (Home) Care</strong></td>
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<td>- Control of the Environment</td>
</tr>
<tr>
<td>- How instruments/equipment are stored/transported</td>
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<td>- Management/disposal of waste as a result of healthcare in a domestic setting</td>
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<td>- Infusion devices</td>
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<td>- Enteral feeding</td>
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<td><strong>Vaccine storage in healthcare settings</strong></td>
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<td><strong>Acupuncture in healthcare settings</strong></td>
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<tr>
<td><strong>Transporting of Specimens in a Community Setting</strong></td>
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<tr>
<td><strong>Disinfection of Venepuncture Sites</strong></td>
</tr>
<tr>
<td><strong>Disposal of healthcare ‘special waste’ in the community</strong></td>
</tr>
<tr>
<td>- Haemodialysis</td>
</tr>
<tr>
<td>- Cytotoxic Waste</td>
</tr>
<tr>
<td>- Disposal of Placenta</td>
</tr>
<tr>
<td><strong>When to Use Sterile/Clean Instruments in the Community</strong></td>
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</tbody>
</table>
It was clear that much of the information found in the initial/additional searches was not of a high quality in terms of scientific evidence, as the documents mostly consisted of best practice papers/guidance. This information was therefore not able to be assessed using formal critical appraisal techniques. However, as the scope of this guidance allowed for the inclusion of best practice statements, any recommendations resulting from these additional community specific considerations were assessed by the guidance development group for possible inclusion in the guidance. The results and references used have been included at the end of this document to allow readers to refer to the primary information (see Section 4).

**Best Practice Recommendations**

Some recommendations included within infection control guidance are not evidence based; however they are regarded as ‘best practice’. This is due to a variety of reasons including ethical reasons and requirement for further research etc.

A recommendation for best practice can be based on low grade evidence and/or expert opinion/practical experience however it should be noted that these best practice recommendations may change if further specific evidence becomes available.

**Methods for additional literature searches**

Detailed below is a brief description of the methods used for all the additional searches:

<table>
<thead>
<tr>
<th><strong>Scientific Papers</strong></th>
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<tr>
<td><strong>Keywords</strong></td>
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<tr>
<td>A list was developed by the infection control team scientists and the guidance development group. These keywords were used to create the scoping search strategy (see Section 3).</td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th><strong>Databases</strong></th>
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<tr>
<td>For each search the following databases were used:</td>
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<td>CINAHL</td>
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<td>British Nursing Index</td>
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<tbody>
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<td>Year of publication</td>
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<tr>
<td>English language</td>
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</table>

**Guidance Documents**

Public Health Websites

For each search the following databases were used:

National Resource for Infection Control
Department of Health
Health Protection Agency
N. Ireland Department of Health, Social Services and Public Safety
National Public Health Service for Wales
Google Search (UK only)

**Limits**

For each website search the first 10 pages of results were assessed. (approx 100 results/>50% relevance according to search engine)

**NB. All search strategies and associated documents (e.g. reviewing logs) have been saved for the review process**

**References**


Hand Hygiene


Scottish Executive Health Department and Health Protection Scotland (2005) Pandemic Influenza - Infection Control Guidelines for use in hospitals and primary care settings, SEHD and HPS, Scotland.


Personal Protective Equipment (PPE)

Allen, J. and Henshaw, D. (unpublished) Static charge as a mediator of nosocomial infections in an isolation ward, University of Bristol.


European Standard (EN 13795) surgical drapes, gowns and clean air suits, used as medical devices, for patients, clinical staff and equipment. Part one: general requirements for manufacturers, processors and products, European Committee for Standardisation.


Medical Devices Agency (1998) Medical Devices Directive (MDD) Latex Medical Gloves (Surgeons and Examination) Powdered Latex Medical Gloves (Surgeons and Examination), MDA SN9825 (June), London.


Royal College of Nursing, Getting a Grip on Latex Allergy


Control of the Environment


Management of Blood and Body Fluid Spillages


Management of Care Equipment


Occupational Exposure (Including Sharps)


Management of Linen


Control of Substances Hazardous to Health Regulations (COSHH) (1988)


Department of Health (1991) Microbiology Advisory Committee, Decontamination of equipment, linen or other surfaces contaminated with hepatitis B and/or human immunodeficiency viruses, DH, London.


Health Protection Scotland (2008) Washing clothes at home - Information for people in hospitals or care homes and their relatives, HPS, Glasgow.

JLA, Distributor of Hospital Laundry Equipment, www.jla.com


NHS Executive (1995), Health Service Guidelines, HSG (95) 18, Hospital Laundry Arrangements for Used and Infected Linen, NHS Executive, London.


Safe Disposal of Waste


Carriage of Dangerous Goods (Classification, Packaging and Labelling) and Use of Transportable Pressure Receptacles Regulations (1996)


Control of Substances Hazardous to Health Regulations (COSHH) (1999)

Controlled Waste Regulations (1992)

Department of Environment, Food and Rural Affairs (DEFRA) – [www.defra.gov.uk](http://www.defra.gov.uk)


Environmental Protection Act (1990)

European Communities (Safety Advisers for Transport of Dangerous Goods by Road and Rail Regulations (2001)


Health Facilities Scotland (2006) NHSScotland - EWC coding guide for healthcare wastes - Interim SHTN 3 guidance, HFS, Glasgow
Health & Safety at Work Act (1974)


Management of Health & Safety at Work Regulations (1999)


Special Waste (Scotland) Regulations (1996)
Special Waste Amendment (Scotland) Regulations (2004)


Waste Management (Collection Permit) Regulations (2001)


Place of Care - Patient placement


NB. Further information on patient placement can be found in the transmission based precautions policies and associated literature reviews: http://www.hps.scot.nhs.uk/haiic/ic/transmissionbasedprecautions.aspx?subjectid=00D2
## 3. CHP Infection Control Guidance Scoping Search & Additional Scoping Searches

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**Databases searched** – Medline, CINAHL, British Nursing Index

**Limits** – English language, 2005 - 2008
**Dental Search**

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**Databases searched**  – Medline, CINAHL, British Nursing Index

**Websites**  – National Resource for Infection Control, Department of Health, Health Protection Agency, N. Ireland Public Health, National Public Health Service for Wales, Google Search (UK only)

**Limits**  – English Language, 1998 - 2008
## Home Care Search

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### Databases searched

- Medline
- CINAHL
- British Nursing Index

### Websites

- National Resource for Infection Control
- Department of Health
- Health Protection Agency
- N. Ireland Public Health
- National Public Health Service for Wales
- Google Search (UK only)

### Limits

- English Language
- 1998 - 2008
### AHP Search

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### Databases searched
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### Websites
- National Resource for Infection Control, Department of Health, Health Protection Agency, N. Ireland Public Health, National Public Health Service for Wales, Google Search (UK only)

### Limits
- English Language
**Venepuncture Skin Disinfection Search**

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**Databases searched** – Medline, CINAHL, British Nursing Index

**Websites** – NHS E-library, National Resource for Infection Control, Department of Health, Health Protection Agency

**Limits** – English Language, 1998 to 2008
4. Results of additional setting specific considerations for Standard Infection Control Precautions in Community and Primary Care Settings

Caveat

The “Infection Prevention and Control Guidance for Community and Primary Care Settings” is designed to be an adjunct to the Health Protection Scotland (HPS) Standard Infection Control Precautions Model Policies. It is therefore stressed that the ten elements of standard infection control precautions must underpin all activities. Furthermore it is assumed for the purpose of this literature review that all standard infection control precautions are being adhered to and therefore do not require specifically addressed within this literature review and associated recommendations. More information on the standard infection control precautions including associated literature reviews is available from the Model Infection Control Policies website:
http://www.hps.scot.nhs.uk/haiic/ic/modelinfectioncontrolpolicies.aspx

Dental

Re-sheathing of anaesthetic needles

One of the main potential occupational exposures to blood borne viruses is by percutanoeous injuries caused by used needles and this is particularly relevant to dental practice due to the manipulations involved in treatment (Leggat et al., 2007).

In general, procedures involving injections during delivery of care within most healthcare settings involve the use of disposable syringes, however within the field of dentistry there remains a requirement for non-disposable aspirating syringes for administering anaesthetic from cartridges. This also enables the needle to be used more than once on the same patient during the same procedure if additional administration of anaesthetic is required. If multiple injections of anaesthetic are required on one patient, the needle will require to be re-sheathed between procedures (Kohn et al., 2003). Partly as a consequence of this practice it is apparent that a large proportion of sharps injuries in dentistry result from the practice of re-sheathing dental syringes (Mamoun and Ahmed, 2005, Shah et al., 2006, Cleveland et al., 2007). It is clear however that the numbers have declined by the introduction and use of various methods such as; standard infection control precautions; use of devices with engineered safety features and alterations to existing working practices (Kohn et al., 2003).

The CDC have produced evidence based guidelines for infection control in dental healthcare settings (Kohn et al., 2003), which includes a number of recommendations for prevention of sharps injuries and a more recent review article (Mamoun and Ahmed, 2005) which updates the evidence base concurs on these recommendations.

The use of engineering controls is one way of reducing the risk and efficacy of this approach has been shown in other healthcare settings. One recently published article examined the role of the safety-engineered devices in preventing needlestick injuries within healthcare settings (Lamontagne et al., 2007). This study looked at the incidence of needlestick injuries pre and post the introduction of safety engineered devices in order to assess their efficacy and was carried out over 10 years in 32 hospitals in France. The results showed a statistically significant reduction in needlestick injuries within that time.
however it was noted that the additional cost could be a barrier to their use. This was a relatively small study however it does provide some evidence for the use of safety-engineered devices to reduce the risk of occupational exposure when HCWs are carrying out specific procedures.

It is apparent from the literature that re-sheathing of non-disposable anaesthetic needles is an important safety issue within dental healthcare and that further studies are required in this area to ascertain if alternative engineering controls or methods would reduce the risk of sharps injuries to practitioners. However, following the recommendations contained within the HPS SICP (HPS, 2009) model policies and CDC guidance (Kohn et al., 2003) will minimise the risks of sharps injuries occurring.

Key Points

- The use of engineering controls should be considered for sharps potentially contaminated with a patient’s blood or body fluids.
- Needles should only be re-sheathed using a re-sheathing device or a one (single) handed technique.
- When removing needles from a non-disposable aspirating syringe it is recommended that the needle be removed by holding the section closest to the syringe. This ensures the needle will not bend.

Management/disposal of waste in a dental environment including teeth

Dental settings may have an agreement with their local board area or a private contractor for the collection and disposal of healthcare “special waste” and all relevant forms should be completed and records kept (SEHD, 2006, HFS, 2002, NHSScotland, 2007, BDA, 2003, DH, 2006a). In addition the dentist has a “duty of care” to ensure that any waste generated is disposed of appropriately (HFS, 2002, BDA, 2003, NHSScotland, 2007, GDC, 1997, DH, 2006a).

From the available literature it can be concluded that most waste generated from dental settings can be disposed of as per standard infection control precautions (HPS, 2009), however some dental waste requires additional consideration and this includes the disposal of teeth. Most teeth can be discarded as high risk special waste into an appropriate container as they are hazardous and a potential source of infection, however teeth containing amalgam are unable to be incinerated and must be handled by special metal recycling companies (NHSScotland, 2007, DH, 2006a). Another possible route of disposal of extracted teeth is by donation to educational facilities, however this must have the consent of the patient. If teeth are to be donated for educational purposes, then the teeth must be thoroughly decontaminated either by autoclaving (non-filled teeth) or chemical decontamination (filled teeth) (Kohn et al., 2003, BDA, 2003).

Local anaesthetic cartridges also require special consideration with respect to disposal. Cartridges which are not fully discharged must be considered hazardous and treated appropriately as “special waste”. This includes provision of a consignment note, which must be completed and retained for at least three years (HFS, 2002, BDA, 2003, NHSScotland, 2007).
Key Points

- Amalgam filled extracted teeth should be processed as special waste and handled by specialist metal recycling companies.
- If teeth are to be donated for educational purposes they must be decontaminated prior to posting and packaged securely for transit following any guidance given from the educational institution.
- Local anaesthetic cartridges should be disposed of via sharps containers, which should be treated as hazardous and treated appropriately as “special waste”.

Blood borne virus screening of staff

A dental practitioner has a “duty of care” not to infect their patients. If they believe they have been potentially infected with a blood borne virus then they have an ethical responsibility to seek medical advice and testing if necessary (GDC, 1997, SG, 2008, BDA, 2003). Furthermore, documentary evidence of immunisation history must be kept (DH, 2006b, SG, 2008, BDA, 2003).

Government guidance (SG, 2008) has recently been released regarding health clearance for new healthcare workers, including students, who will have direct clinical contact (i.e. regular clinical contact) with patients (as opposed to casual or social contact). They recommend that healthcare workers have checks for tuberculosis disease/immunity; are offered hepatitis B immunisation, with post-immunisation testing of response; and are offered tests for hepatitis C and HIV.

The guidance recommends specifically in relation to dentistry that additional health clearance for all dental students (except dental nursing students, dental nurses or clinical dental technicians unless specified from the result of a specific risk assessment) be carried out prior to acceptance on to training courses, as they may have to carry out exposure prone procedures during their initial training and practice. Additional health clearance involves testing to ensure that they are non infectious for; hepatitis B, hepatitis C, HIV. The responsibility for these checks lies with the educational facility but NHS Boards should check that this guidance is being followed prior to accepting student placements.

In dentistry most procedures undertaken are exposure prone procedures (SG, 2008). The UK Advisory Panel for healthcare workers infected with bloodborne viruses (UKAP) criteria for exposure prone procedures are

“Exposure-prone procedures (EPPs) are those where there is a risk that injury to the worker may result in exposure of the patient’s open tissues to the blood of the worker. These procedures include those where the worker’s gloved hands may be in contact with sharp instruments, needle tips or sharp tissues (spicules of bone or teeth) inside a patient’s open body cavity, wound or confined anatomical space where the hands or fingertips may not be completely visible at all times. However, other situations, such as prehospital trauma care should be avoided by healthcare workers restricted from performing exposure prone procedures, as they could also result in the exposure of the patient’s open tissues to the blood of the worker” (UKAP, 2007, SG, 2008).
Key Points

- Guidance issued by Scottish Government, Health Clearance for tuberculosis, hepatitis B, hepatitis C and HIV, should be referred to regarding health clearance for new healthcare workers, including students, who will have direct clinical contact (i.e. regular clinical contact) with patients (as opposed to casual or social contact).

- Dental practitioners who have reason to believe that they may be infected with a blood borne virus have an ethical responsibility to obtain medical advice, which can include any required testing.

- Immunisation history must be kept as documentary evidence (e.g. by the employing dentist).

- The UK Advisory Panel for healthcare workers infected with bloodborne viruses (UKAP) criteria for an exposure prone procedures are as follows:

  “Exposure-prone procedures (EPPs) are those where there is a risk that injury to the worker may result in exposure of the patient’s open tissues to the blood of the worker. These procedures include those where the worker’s gloved hands may be in contact with sharp instruments, needle tips or sharp tissues (spicules of bone or teeth) inside a patient’s open body cavity, wound or confined anatomical space where the hands or fingertips may not be completely visible at all times. However, other situations, such as prehospital trauma care should be avoided by healthcare workers restricted from performing exposure prone procedures, as they could also result in the exposure of the patient’s open tissues to the blood of the worker.”

Traceability of instruments

The traceability of instruments is an important aspect of dental care given the high turnover of clients and the possible infections that could be contracted. One of the key aspects in this area is the quality of the record systems in place in the practice (HPA (South West), 2007, HPS, 2007, DH, 2009). It is recommended that these systems should be either manual or IT based and should include the cycle number and the person responsible for carrying out each stage in the decontamination process (HPS, 2007). For invasive procedures, especially those which carry a medium to high risk of transmission of CJD, the device(s) used should be able to be traced to a particular treatment episode and again this can be done both manually or using an IT system (HPS, 2007).

Key Points

Procedures for decontaminating of equipment in a primary care setting should be referred to –

Health Protection Scotland: Local Decontamination Units: Guidance on the Requirements for Equipment, Facilities and Management –

Control of the Environment

It is clear from the available literature that maintenance of the domiciliary (home) care environment is difficult due to the variability of conditions that can be faced (Kenneley, 2007, Rankin and Kean, 2005, Cole, 2007, Ward, 2000, HPA (South West), 2007). However, healthcare workers have a responsibility to provide a service that reduces the risks of infection to the patient, therefore a more adaptive approach to infection control has to be taken based on a risk assessment of the conditions (Kenneley, 2007, Rankin and Kean, 2005, Ward, 2000). One paper found discusses performing of aseptic techniques in patients’ homes (Cole, 2007). It concludes that the procedures for carrying out aseptic techniques should be flexible and aim to minimize cross infection, and not focus on eliminating it completely, as this would be impossible in when care is being provided in the domiciliary environment.

Another aspect of infection control that is common in home care is the use of needles and other sharps (Bennett and Mansell, 2004). In these situations aspects such as the available working space and lighting should be taken into consideration to prevent otherwise avoidable injuries.

The principles of standard infection control precautions, should apply for example when dealing with specific spillages (e.g. blood) but taking into account the limitations of such cleaning on some surfaces (HPS, 2009, Rankin and Kean, 2005, HPA (South West), 2007). The use of disinfectants, particularly the use of hypochlorite, is mentioned in a paper published in the Journal of Community Nursing (Ward, 2000). It states that although disinfection of blood and body fluid spillages is the norm in healthcare environments it is unlikely that this practice would take place in a domestic environment where this type of solution would damage carpets. They recommend that in circumstances such as this that hot water and detergent be used. Additional standard precautions (e.g. personal protective equipment) should be implemented when dealing with spillages (HPS, 2009).

Key Points

- The healthcare worker has to be satisfied that they are providing care in the best environment for both the safety of the patient and themselves, while taking into account that they are not in a healthcare setting but a domestic home where diplomacy will have to be taken when discussing any issues that may occur.
- Standard infection control precautions should be applied for example when dealing with specific spillages (e.g. blood) but care should be taken not to damage material or furnishings in the patient’s home.
**Storage/transportation of instruments/equipment in domiciliary settings**

It is vitally important that the methods used for the storage and transportation of surgical instruments ensure that the sterility of the instruments is not compromised during transit. Sterile devices that are transported outside the clinic e.g. dental or podiatry instruments used for treatment in the home should be carried in a sterilised container or pouch to protect them from contamination and if possible within individualised sets for each treatment (HPA (South West), 2007, HPS, 2007).

If any patient care equipment is being loaned to patients being cared for within a home setting then it is the responsibility of the healthcare worker to ensure that the equipment has been adequately cleaned when they are using it for patient care (Rankin and Kean, 2005). When any loaned specialist care equipment (e.g. nebuliser) is no longer required by the patient the healthcare worker should complete the appropriate decontamination certificate prior to returning it to home loans store/LDU/CDU (MHRA, 2006).

**Key Points**

- Reusable surgical equipment should be stored and transported in a way to ensure their sterility (e.g. in a sterilised pouch/container).

- Procedures for decontaminating of equipment in a primary care setting should be referred to –

  Health Protection Scotland: Local Decontamination Units: Guidance on the Requirements for Equipment, Facilities and Management –

  Scottish Health Planning Note 13 Part 2 Decontamination Facilities: Local Decontamination Units –

  Decontamination in Practice – Cleaning of Dental Instruments (Dental Clinical Guidance) -

- Patient care equipment which is loaned to patients cared for within domestic settings should be checked for cleanliness prior to use by the HCW.

- Any specialist care equipment (e.g. nebuliser) no longer required by the patient within their home setting should be appropriately decontaminated by the HCW and/or provide the appropriate decontamination certificate prior to return to home loans store/LDU/CDU.

**Management/disposal of waste as a result of healthcare in a domestic setting**

It is important when providing healthcare in a domestic setting that ‘Healthcare (including clinical) Waste’ is disposed of through the correct waste route. A healthcare worker’s “duty of care” for the disposal of waste is no different in a domestic setting than that of a normal healthcare setting. Those providing health and social care in these settings must ensure
health and safety issues are considered, risk assessed and managed appropriately, following current waste disposal guidance (HFS, 2002, DH, 2006a). Some waste (e.g. plasters, small dressings and incontinence products) produced as a result of care by a healthcare worker in the domestic setting may be disposed of via the normal domestic waste. However, if any of this waste can be classified as “special waste” or any additional concern has been highlighted in the risk assessment then it should not be disposed by this route and other local arrangements will be required. All other types of waste produced in a domestic setting must be managed as per local procedures (e.g. sharps, disposable instruments, etc).

The transport of 'Healthcare (including clinical) Waste' by healthcare workers providing care in a domestic setting is another consideration (Blenkham, 2008). Although the specifics of this area differ due to local issues, there are two overall methods of disposal of waste from a domestic setting – transport in the healthcare worker’s vehicle or collection by a designated organisation. For both of these, the healthcare worker’s “duty of care” remains until the waste has been correctly disposed of (i.e. waste must be stored correctly prior to collection) (HFS, 2002, DH, 2006a).

Those who care for themselves at home and generate waste, e.g. self-injecting diabetics, must also be a considered. The GP or healthcare worker in charge of these patients’ care should carry out a risk assessment and prescribe the appropriate waste disposal materials and provide appropriate support and guidance must be in place locally to ensure the waste is disposed of correctly (HFS, 2002, DH, 2006a).

Key Points

- Waste should be managed as per national/local policies.
  - Those who care for themselves (e.g. self-injecting diabetics) should be managed as per local policy (i.e. a risk assessment and prescription of appropriate waste disposal materials to ensure correct disposal).

Infusion devices in the domiciliary setting

The use of infusion devices such as peripheral catheters and Hickman type (CVC) catheters within home settings has substantially increased due to the increase in community based care (Kelly, 2008, HPA (South West), 2007, NICE, 2003). The insertion and care criteria for these devices is the same as those used in a hospital setting or primary care however additional advice will need to be given to the patient, family or carers regarding maintenance of the system.

The guidance recommends that individuals should be taught how to maintain the catheter and given information of who to contact should any problems occur (NICE, 2003).

It is important that a clean dressing at the catheter site is maintained in order to avoid potential infections. It is recommended that CVC catheter dressings are changed every 7 days or when visibly soiled, damp or loose. When changing a dressing an appropriate antiseptic solution should be used to clean the site. It is advisable to check the insertion
site for any signs of infection such as inflammation and swelling so that the catheter can be removed. Administration sets if used for general purposes do not need to be changed more frequently than 72 hours however this time is reduced to 24 hours if they have been used for products that could promote microbial growth such as total parental nutrition (NICE, 2003, HPS, 2008a).

Peripheral catheters should be changed at least every 72 hours however central venous catheters do not need to be changed routinely and should only be removed if no longer needed or if infection occurs (HPS, 2008b).

Key Points

- Individuals should be taught how to maintain the catheter and given information of who to contact should any problems occur.
- Any manipulation of the catheter is done using an aseptic technique.
- Devices should be maintained and changed in accordance with existing local/national guidance.
- The HPS care bundles for PVC and CVC catheters should also be referred to:
  - PVC Care Bundle
    http://www.hps.scot.nhs.uk/haiic/ic/PVCCareBundle.aspx
  - CVC Maintenance Care Bundle
    http://www.hps.scot.nhs.uk/haiic/ic/CVCMaintenanceCareBundle.aspx

Enteral feeding

The use of enteral feeding devices has also substantially increased in the home setting due to the increase in community based care (HPA (South West), 2007, NICE, 2003). The insertion and care criteria for these devices is the same as those used in a hospital setting however additional advice will need to be given to the patient, family, carers regarding maintenance of the system. The guidance recommends that these individuals should be taught how to maintain the device and given information of who to contact should any problems occur. The evidence for the recommendations given surrounding this procedure is of mixed quality (NICE, 2003).

Recommendations extracted from NICE Guidance

- Hand hygiene should be carried out as per standard infection control precautions
- Wherever possible pre-packaged, ready-to-use feeds should be used in preference to feeds requiring decanting, reconstitution or dilution.
- If pre-packed food is not going to be used, should be mixed using cooled boiled water or freshly opened sterile water and that an aseptic technique should be employed throughout the process.
• A designated clean area should be used for preparation of food which should be stored in a fridge and used within 24 hours.

• The use of an aseptic technique when connecting the system to the feeding tube should be adhered to minimise any cross contamination risks.

• When ready to use foods are being given to the patient, these can be left in place for a maximum of 24 hours, however self prepared foods should only be left in place for a maximum of 4 hours.

• Once the procedure has been completed all administration sets and food containers should be discarded as these items of care equipment are designed to be single use only.

• The stoma should be washed with water and thoroughly dried on a daily basis.

• Finally the feeding tube should be flushed with fresh tap water (cooled freshly boiled water/sterile water should be used for immunocompromised patients) before and after feeding/administrating medicines.

Vaccine storage in healthcare settings

The administration of vaccines is common place in any GP surgery. It is therefore vital that the storage of vaccines within GP surgeries is performed in a safe and efficient manner considering any local policies. A series of best practice points are given in the HPA community guidance (HPA (South West), 2007).

Best practice points adapted from HPA Guidance:

• Vaccines arriving at a GP setting should be processed as quickly as possible.

• The delivery should be checked to ensure that it is intact and rules regarding the “cold chain” have been followed.

• The total transit time should be checked to ensure that it is not more than 48 hours in total.

• If any of these factors are not to standard then the delivery should be refused as it could lead to ineffective or potentially dangerous vaccines being used.

• In the surgery there should be a lockable fridge to contain the vaccines. This fridge should be big enough to house routine stocks but should also have additional space to carry seasonal vaccines such as the yearly flu vaccine.

• It is good practice to have a list of the vaccines available and their location in the fridge as this will minimise the length of time the door of the fridge is left open and also ensure that a good stock rotation is in place guaranteeing that vaccines will be used by their expiration date.
• It is important that accurate records are made with regards to the temperature of the fridge and an action plan should be in place should there be a power failure.

• When transporting vaccines a cool box should be used and the temperature monitored. It should be noted on any unused vaccine that is being transferred back into the fridge from the cool box – the time they were out of the fridge and that these vaccines should be used as soon as possible.

Acupuncture in healthcare settings

Acupuncture is a widely used alternative therapy using solid bore needles at particular points on the body. As with any procedure involving needles there is a potential risk of exposure to blood borne viruses. One concern is the use of re-usable needles that have not been adequately sterilised. It is therefore strongly recommended that only single use needles are used (HPA (South West), 2007, Walsh, 2001). Over and above normal standard precautions some additional best practice points (HPA (South West), 2007) have been given:

Best practice points adapted from HPA Guidance:

• Only single use acupuncture needles should be used

• The patient’s skin does not need to be disinfected. But if the site appears dirty the skin should be cleaned with soap and water and dried

• Do not test the sharpness of the needle on your own skin

• Do not touch the shaft of the needle

• Do not point the needle towards yourself when inserting

• Discard needles into a sharps container immediately after the procedure

Transporting of Specimens in a Community Setting

The information found to inform this section was from legislation and best practice guidance. The Department of Health (DH, 2007) have recently published best practice guidance for microbiology laboratories regarding the transport of infectious substances. Contained within this guidance is a section relating specifically to the transport of clinical samples from general practitioner surgeries. They recommend that any samples should be packed in accordance with packing instruction P650. One issue highlighted is that in this particular setting the packing of specimens individually may be impractical. In this situation they recommend that multiple specimens be packed by putting each sample container into its own transport bag. These transport bags are then put collectively into one large bag containing enough padding to prevent the samples from breakage. This large bag containing all the samples should then be placed in a rigid, sealable container.
Each sample should have its own specimen form and the rigid outer container should be clearly labelled according to the P650 instructions.

Due to the best practice procedural nature of this guidance a brief search for further local guidance documents was undertaken. A number of local guidance documents were found in this regard and stated similar recommendations to that of the DH guidance (Bassetlaw PCT, 2007, North Yorkshire & York PCT and North Yorkshire & Humber HPU, 2008).

**Key Points**

- All specimens should be packaged in accordance with the legal packing requirements (i.e. appropriate container, label and adequate precautions in place should a spillage occur)


**Disinfection of Venepuncture Sites**

Venepuncture involves the insertion of a needle into a vein to obtain a sample of blood for haematological, biochemical or bacteriological analysis (Lavery and Ingram, 2005, Campbell et al., 1999). It is clear from the limited evidence available that the preparation of skin for venepuncture is a highly debated area (Campbell et al., 1999, Franklin, 1999, Lavery and Ingram, 2005, Lavery and Smith, 2008), however, there is clear evidence that skin preparation for blood cultures is vital to ensure that the blood obtained is not contaminated (Scales, 2008, Suwanpimolkul et al., 2008, Qamruddin et al., 2008).

Many of the papers found suggest that it should be considered good practice to cleanse all sites where venepuncture takes place and not just those where the blood will be used for blood culture (Lavery and Ingram, 2005, Lavery and Smith, 2008, Campbell et al., 1999, Franklin, 1999). This view that skin preparation should be performed is also shared by a recent HPA guidance (HPA (South West), 2007) document and Association of Anaesthetists of Great Britain and Ireland practice guidance (Association of Anaesthetists of Great Britain & Ireland, 2008).

The most popular method for the decontamination of the skin is to wash the skin (if visibly soiled) and then to use chlorhexidine in alcohol or 70% alcohol. It is made clear in the evidence found that the alcohol wipe should be used for at least 30 seconds and allowed to dry for a further 30 seconds (Scales, 2008, Lavery and Ingram, 2005, Lavery and Smith, 2008, Campbell et al., 1999, Franklin, 1999). It is suggested in one recent paper that this drying time provides the healthcare worker with an opportunity to check such things as equipment expiry dates and packaging as well as allowing them to open any equipment ready for the procedure (Lavery and Smith, 2008).

**Key Point**

- It is best practice to cleanse all sites where venepuncture takes place (e.g. with a 70% alcohol wipe) and not just when the blood being taken is being used for blood culture purposes.
Disposal of ‘Healthcare (including clinical) Waste’ and other ‘Special Waste’ in the Community

The information for this subject area is legislative/procedural. In addition “the professional, arranging or undertaking patient care, must carry out a risk assessment and identify and action the appropriate waste disposal route” (HFS, 2002).

### Key Points

#### Haemodialysis

The dialysis waste should be placed into a “ECO “UN type approved” sharps bin/container that is resistant to puncture and retains liquid or an orange plastic bag marked with the type of substance contained” (HFS, 2002).

#### Cytotoxic Waste

The cytotoxic waste should be placed into a “yellow “UN type approved” sharps bin/container (resistant to puncture and retain liquids) or heavy duty yellow plastic bag, marker with type of substance contained” (HFS, 2002).

#### Disposal of Placenta

The placenta should be “sealed in a small plastic bag and placed in a “UN type approved” yellow placentapak” (HFS, 2002).

When to Use Sterile/Clean Instruments in the Community

The information for this subject area is legislative/procedural.

### Key Points

Procedures for decontaminating of equipment in a primary care setting should be referred to –

Health Protection Scotland: Local Decontamination Units: Guidance on the Requirements for Equipment, Facilities and Management –

Scottish Health Planning Note 13 Part 2 Decontamination Facilities: Local Decontamination Units –
http://www.hfs.scot.nhs.uk/online-services/publications/property/


Also see Fig.1 and Fig.2
Procedure for home care

Devices are reprocessed in a dedicated LDU sterile/sterilized/disinfected devices are transported to the patient home – packaged.

Contaminated devices are then transported from a domiciliary visit (if applied) using a transport packaging and vehicle meeting the dangerous good regulations (The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004 http://www.opsi.gov.uk/si/si2004/20040568.htm).
**Fig.1 – Glennie Technical Requirements for Decontamination Processes**

**GLENNIE TECHNICAL REQUIREMENTS FOR DECONTAMINATION PROCESSES**

<table>
<thead>
<tr>
<th>Clinical procedures*</th>
<th>Categorisation by risk for all types of CJD</th>
</tr>
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**High Risk**
- All procedures that involve piercing the dura, or contact with the trigeminal and dorsal root ganglia, or the pineal and pituitary glands.
- Procedures involving the optic nerve and retina.

**Medium Risk**
- Other procedures involving the eye, including conjunctiva, cornea, sclera and iris.
- Procedures involving contact with lymphoreticular system (LRS).
- Anaesthetic procedures that involve contact with LRS during tonsil surgery (for example laryngeal masks).
- Procedures in which biopsy forceps come into contact with LRS tissue.
- Procedures that involve contact with olfactory epithelium.

**Low Risk**
- All other invasive procedures including other anaesthetic procedures and procedures involving contact with the cerebral fluid.

Fig. 2 – Spaulding classification.

Devices used in invasive procedures classified as low risk under the Glennie categorisation, can present a significant risk for other HAIs, and must be reprocessed utilising validated decontamination processes. The risk of other HAIs is related to:

- The nature of the clinical procedure;
- The infection status of the previous patient;
- The immune status of the patient on whom the device is to be used.

The decontamination process required is commonly specified as one of three levels (based on the classification system first proposed by Dr E.H. Spaulding):

<table>
<thead>
<tr>
<th>Classification</th>
<th>Type of Procedure</th>
<th>Level of Decontamination Required</th>
</tr>
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</table>
| Critical         | Invasive devices that enter tissue that is usually sterile or enters the vascular system  
                    e.g., artery forceps, probes, biopsy forceps, dental extraction forceps/elevators | Requires sterilization                               |
| Semi-critical    | Device contacts intact mucous membrane but does not penetrate sterile tissue  
                    e.g., flexible endoscopes, dental mirrors, vaginal specula | Requires high level disinfection*  
                    (Sterilization preferred where practicable **) |
| Non-critical     | Device only contacts intact skin  
                    e.g., stethoscope, sphygmomanometer cuff.    | Can be processed by cleaning (and low level disinfection where necessary) |

**Note:**
* High level disinfection is a process designed to kill vegetative microorganisms, mycobacteria, viruses, fungal spores and some, but not all, bacterial spores.
** See Safety Action Notice (SAN(SC)03/23) Re-usable Stainless Steel Vaginal Speculæ *sic*: Risk of Cross Infection
References used to inform the guidance from additional scoping searches


(please note some elements of this document for example decontamination are covered by NHSScotland guidance.


Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004


General Dental Council (1997) Maintaining standards - Guidance to dentists on professional and personal conduct, GDC, London.


Health Protection Scotland (2008a) CVC Care Bundle, HPS, Glasgow


Health Protection Scotland (2008b) PVC Care Bundle, HPS, Glasgow


