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ADVISORY COMMITTEE ON DANGEROUS PATHOGENS

Progress on BBV guidance following the last Committee meeting

Issue

At the last ACDP meeting, several sections of the ACDP-BBV guidance were presented and discussed by members. Following that meeting a number of recommendations were taken forward and this paper provides an update of progress made since that time:

1. **The presentational aspects** of the guidance document have been taken forward by HSE; in particular this process has involved a review of the proposed appearance of the document in electronic form, especially the inclusion of relevant links throughout the revised guidance. An example of the proposed format will be presented at the meeting today, for members to consider;

2. **A concise introductory section was requested** to place the remainder of the document in context. This Introduction, currently referred to as Part 0, is now complete and explains the main subject areas covered and how the document is intended to act as a signpost to more detailed sources of information in certain subject areas. The structure of the Introduction is designed so that the readership will quickly identify the areas most applicable to their needs;

3. **The revised document makes substantial use of hyperlinks in various forms**. These have been checked over methodically by HSL and HSE staff at various stages but will be cross-checked by HSE's Communications staff when they guidance is converted to HTML (Web) format. At this same stage relevant *internal* links will be set up between sections of the guidance; the current (technical) editorial team cannot do this because this step can only be completed as the guidance is uploaded to the Host Web site;

4. **Appendix 3 - links to various sector specific guidance required careful vetting** to determine their relevance and reliability. This has now been completed. It is evident that, even for guidance provided by some major services - e.g. the police service - only certain major forces have published their own documents. As part of a 'pre-consultation' of occupational health professionals currently in progress a specific request has been made for contributions to this section, to make it as complete as possible;

5. **References to BBV transmission from Healthcare** worker to patient have been removed, since this information is covered comprehensively within other Government guidance;

6. **Part 4 of the guidance (post exposure risk assessment and appropriate responses) has now been completed**. This section is not intended to replace the essential, expert advice that is needed when any person is exposed to BBV. As such it provides fundamental advice on immediate, appropriate action while emphasising existing, authoritative sources of information available (occupational health professionals, hospital A&E departments, and HPA / DH sources). The excellent PEP information available in the DH Green Book is an example of the sources signposted within this section;

7. **A Bibliography** - back in March 08 the editorial team felt that, due to the new structure of the revised ACDP-BBV document, no formal bibliography would be required. This is because all cited material is given reference within the body text or as footnotes below it. Since that time, however HSE's discussions with their Communications specialists have suggested that a paper version of the guidance may yet be requested. If this is agreed then a full bibliography is also likely to be required;

8. **In the 'Use of Gloves' Appendix**, certain references to use of latex gloves have been amended to reflect the fact that large numbers of users within the health care sector have little option but to use these gloves. The emphasis on the preferred use of low protein, powder free materials remains;

9. **It was agreed that a pre-consultation exercise would be conducted** as soon as essential amendments were made to the existing documents. This has involved sending the completed guidance documents to occupation health physicians (or other professional providers) who serve major services that fall within the readership of this document. Examples mentioned included: Police, Other emergency responders (Fire and Amb.), also Infection Control Nurses Association;

10. **A Questions and Answers section** has been discussed within the editorial team as a possible mechanism for offering a response to certain situations. The format of this is likely to be that of a dedicated single section for Q+As within the guidance (rather than Q+As within every section). It was timely and appropriate to initiate this process by asking current responders to pre-consultation to suggest Q+As that they feel are relevant. This is in process and may be extended to the final consultation on the guidance;

11. **A final round of consultation**, to include existing contacts in DH, EAGA, AGH, BMA, CCDCs, Hospital Infection Soc, Clinical Virol. Network, the Association of National Health Occupational Physicians, (ANHOPs), Assoc. Medical Microbiologists and possibly others, is planned following the June ACDP meeting;

Action:

In summary, previous comments have been taken forward and members are now asked to consider and advise on parts "0" and "4" together with the presentational format. It is hoped that following this meeting the guidance can be circulated for final consultation.

Secretariat
June 2008

Protection against blood-borne infections in the workplace

Overview

1. People suffering from certain infections may have the agent of disease present in their blood. In some cases the organisms persist in the blood for long periods and in sufficient numbers to represent a high risk of transmission. If others are exposed to their blood - or other bodily fluids - the infectious agent may be transferred into their bodies and infect them.

2. The main risk of occupationally acquired blood borne infection relates to viruses that persist in the blood and are known to be endemic in the UK population. In these cases, the infectious agent is usually a blood-borne virus (BBV). The individual infected with the virus may not show symptoms or even be aware that they are carrying it.

Info Box 0.1 - Bodily fluids that may contain BBVs

- Blood
- Cerebrospinal fluid
- Pleural fluid
- Breast milk
- Amniotic fluid
- Vaginal secretions
- Peritoneal fluid
- Pericardial fluid
- Synovial fluid
- Semen
- Other body fluids containing blood

Urine, faeces, saliva, sputum, tears, sweat and vomit, present a minimal risk of blood-borne virus infection unless they are contaminated with blood. However, they may be hazardous for other reasons.

3. BBVs of major concern are the human immunodeficiency virus (HIV, which causes Acquired Immune Deficiency Syndrome or AIDS), and Hepatitis B and C, which may result in chronic infection. These viruses represent a significant risk of blood-borne transmission. This guidance will therefore concentrate only on these viruses.

Purpose of the guidance

4. The aim of this guidance is to offer assistance to a wide readership, including those with responsibility for Health and Safety, as well as those in Occupational Health disciplines that need to assess the risks associated with exposure to such viruses. It is intended to cover any workplace situation where exposure to blood-borne viruses (BBV) is possible. Controls that minimise risks during exposure-prone procedures, and recommended actions in the event of an exposure, are presented. In addition to providing information on a wide range of BBV related topics (see below), signpost information is also used throughout this guidance, in the form of hyperlinks

and footnotes, to take the reader to other, often specialised documents produced by others.

5. This guidance is divided into four main parts:

PART 1 - provides background information on blood-borne viruses that is relevant to various UK occupational settings. This technical information may be particularly useful to those with an existing insight in to viral infection, but who may wish to learn more about the process of transmission and disease;

PART 2 - concerns relevant health and safety law and the legal duties of employers with respect to hazard and risk assessment. This includes consideration of emergency planning, staff training, control measures and health surveillance;

PART 3 - covers the practical process of risk assessment, and gives guidance on control measures that can mitigate the risk of infection in occupational situations. Other working environments are also considered, since exposure prone activities and professional care of BBV-infected individuals may take place outside of the clinical setting; and,

PART 4 - provides guidance on what should be done in situations where a significant exposure to BBV has occurred. This section also offers fundamental information on risk assessment related to post exposure prophylaxis (PEP), with signposts to specialist information sources, as appropriate.

6. Appendices are also provided to cover certain areas in more detail, including glove use, transportation of infected materials, industry specific guidance and contact details for specialist advisory groups.

Terminology

7. The term *blood-borne virus (BBV)* will be used in this guidance for brevity. Whenever this term is used, or blood is otherwise mentioned, it should be taken to include any high-risk body fluid (Info box 1.1) unless stated otherwise.

8. The BBV covered in this guidance are pathogens capable of causing severe disease and even death. Whilst medical treatments (i.e. post-exposure prophylaxis) may be available and effective, a common high standard of handling should be applied in all contact with blood, body fluids and tissues.

9. Other blood-borne infections exist that are not covered by this guidance. The control measures recommended are applicable to the majority of other infectious agents that may be found in blood at some time during the course of an illness.

Preparation of the guidance

10. The Advisory Committee on Dangerous Pathogens (ACDP) has prepared this guidance in consultation with HSE. ACDP advises the Health and Safety Executive, Health Protection Agency, Health and Agriculture Ministers and their counterparts under devolution in Scotland, Wales and Northern Ireland, as required, on all aspects of hazards and risks to workers and others from exposure to pathogens.

11. The guidance represents what is considered to be good practice by the members of the ACDP and has been agreed by the Health and Safety Commission and Health Ministers. Following this guidance is not compulsory and you are free to take other action, but it does contain information on legal requirements for certain activities and, if you do follow this guidance, you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.

Part 4: Guidance on management of incidents potentially involving exposure to a blood-borne virus.

Overview

4.1 This section of the guidance is intended to provide broadly applicable advice to assist in the initial management of a potential exposure to a blood-borne virus, irrespective of the circumstances or the location of that exposure. Further management of such an incident will require specialist knowledge and expertise. This is available through a number of sources such as:

- Occupational Health Departments
- Primary care physicians (General Practitioners)
- Accident and Emergency departments

In this section, the term 'source' means the person from whom the blood or bodily fluid originates, whilst the term 'recipient' means the person exposed to potentially BBV infected blood or body fluids.

4.2 Exposure to blood-borne viruses may arise through a wide variety of different circumstances. Occupational exposure is most likely to occur in the context of health-care, whereby workers are exposed to the blood or bodily fluids of BBV-infected patients. However, exposure may also occur in any workplace where one individual is exposed to the blood or other bodily fluids of any other individual, e.g. following an accident. Such exposures may also occur in the home or through participation in leisure pursuits.

Management strategies for blood-borne viruses

4.3 For each of the three main blood-borne viruses, there are possible post-exposure interventions and management strategies designed to minimise the chances of the recipient of that exposure from acquiring a blood-borne virus infection as a result of the exposure. In brief, these possibilities are as follows (also summarised in table 4.1):

Hepatitis B Virus: Following exposure to HBV – consideration of passive immunisation (i.e. administration of preformed antibodies against HBV derived from healthy blood donors) in the form of hepatitis B immunoglobulin (HBIg), and of active immunisation with hepatitis B vaccine, usually using an accelerated course (i.e. doses administered 0, 1, 2, and 12 months post-exposure).

Hepatitis C Virus: Following exposure to HCV – monitoring of the recipient for evidence of acquisition of infection with HCV, and should that occur, consideration of antiviral therapy, as evidence shows that treatment at this stage is very successful.

Human Immunodeficiency Virus: following exposure to HIV – administration of post-exposure prophylaxis (i.e. a regimen of 3 anti-HIV drugs taken for 4 weeks post exposure).

Table 4.1

Virus	Risk*	Intervention
HBV	up to 30%**	Post-exposure prophylaxis with vaccine and/or HBIg
HCV	1-3%	Monitor recipient. Early therapy if transmission occurs
HIV	0.3%	Post-exposure prophylaxis – anti-retroviral drugs

* Risk of transmission following needlestick exposure
** In unvaccinated individuals

4.4 The above interventions can only be instituted after careful risk assessment of the exposure incident by appropriately trained medical personnel such as those available through occupational health departments, primary care facilities (General Practitioners), or the accident and emergency department of the local hospital. It is not the intention of this section of the guidance to reproduce or replace the extensive and detailed existing guidelines relating to post-exposure management as these are available from a variety of sources to those health-care professionals. Relevant information sources are listed in Info Box 4.1 below). Rather, this section of the guidance is aimed at helping those involved in the initial management of the incident, to determine whether onward referral to such professional advice is necessary.

Info Box 4.1. Authoritative information sources related to BBV post exposure intervention and treatment

- The 2004 version of the guidelines: HIV Post-Exposure Prophylaxis: Guidance from the UK Chief Medical Officers' Expert Advisory Group on AIDS. Department of Health, February 2004. www.dh.gov.uk/assetRoot/04/08/36/40/04083640.pdf
- National guidance is available to aid the management of healthcare workers exposed to a hepatitis B infected source patient, including the use of hepatitis B vaccine and immunoglobulin. This is available from Immunisation against infectious disease, Hepatitis B, Chapter 18, The Green Book. London: Department of Health, December 2006. This document is available at: www.dh.gov.uk/en/Policyandguidance/Healthandsocialcaretopics/Greenbook/DH_4097254
- Full details on the required follow-up for healthcare workers exposed to hepatitis C can found in the following publication: Guidance on the investigation and management of occupational exposure to Hepatitis C, ME Ramsay. Communicable Disease Public Health 1999; 2: 258-62. Available at: www.hpa.org.uk/cdph/issues/CDPHVol2/no4/guides_hepC.pdf

Immediate first aid requirements

4.5 Where the eyes or mouth have been exposed to blood or body fluids, they should be washed copiously with water. For puncture wounds, the wound should be gently encouraged to bleed, but not scrubbed or sucked, and should be washed with soap and water. It is NOT necessary to keep any needle/sharp instrument to send to the laboratory for testing for the presence of blood-borne viruses. Any such sharp instruments should not be re-sheathed, but be disposed of directly into an appropriate container.

4.6 An urgent risk assessment is required to establish if the exposure has the potential to transmit a blood-borne virus – i.e. whether or not the exposure is significant. A number of factors will be taken into account in the risk assessment, including:

- **Type of body fluid to which the recipient has been exposed.** Blood carries the highest risk, but BBV can be transmitted by other bodily fluids (see Pert 0), especially if they are also contaminated by blood.

- **Route of exposure**. This is classified essentially into 3 categories – percutaneous, mucous membranes (which include eyes, mouth), and skin. Splashing of blood/bodily fluids onto mucous membranes may result in virus transmission, although the risk is considerably lower than for percutaneous exposure.
    - If intact, skin is impervious to these 3 viruses; however,
    - If the skin is NOT intact e.g. through cuts or abrasions, or chronic dermatitis such as eczema, then transmission may occur

- **Nature of exposure.** – An assessment should be made as to whether exposure to blood/bodily fluids was direct, or indirect, e.g. through a contaminated device or instrument:
    - If indirect, then in what way had it become contaminated? Contaminated hollow bore needles (e.g. those used for injection) are more likely to transmit than solid needles (e.g. those used in suturing).
    - Needles that have been present in a blood vessel are more likely to transmit than needles used for intramuscular injection.
    - How soon after the sharps became contaminated did the exposure incident occur? The viability of the BBVs will decrease rapidly on drying, so for instance transmission is very unlikely from a dried-up needle found lying in a field.

- **Personal protective equipment** (PPE) used – e.g. were gloves in use? There is a wiping effect as a needle pierces a glove, which may reduce the likelihood of transmission

- **What is known about the source?**
    - If the source is known, then their status with regard to BBV infection or the presence of risk factors for BBV infection, may be ascertained;
    - If the incident arose from an unknown source, a risk assessment may still be possible in the light of local knowledge of the prevalence of BBV infections.

- **Hepatitis B immunisation status of the recipient** – has the recipient previously received any doses of HBV vaccine? If so, was he/she a responder to the vaccine?

All of the above will contribute to decisions on whether HIV and/or HBV post-exposure prophylaxis (PEP), or follow-up for evidence of HCV transmission, is required.

Grading of risk

4.7 Taking into account the above factors, it should be possible to categorise the incident into one of three broad categories.

Very low risk. This would include e.g. blood or bodily fluid on intact skin, or exposure to bodily fluids not regarded as vehicles of transmission (see Info Box in Part 0). The area should be washed thoroughly, but gently, with soap and running water, without scrubbing. No further action is necessary.

Low risk. This would include e.g. a percutaneous injury from a dried-up abandoned needle in a public place, or mucous membrane splash from an individual not at high risk of being a BBV carrier.

High risk. This would include e.g. a percutaneous injury or skin/mucous membrane exposure to blood/bodily fluids from a source with significant risk factors for a BBV infection.

Management of incidents in the latter two categories will include some or all of the following:

- Obtaining a blood sample (5ml clotted) from the recipient to be sent to the laboratory as a baseline sample for storage. This will only be tested, with informed consent, at a later date if subsequent follow-up tests of the recipient prove to be positive for a BBV infection;

- Starting an accelerated course of hepatitis B vaccination;

- Consideration of the need to administer an immediate dose of hepatitis B immunoglobulin;

- Consideration of the need for follow-up testing for hepatitis C virus infection. If this is deemed necessary, the recommended schedule for testing is for HCV RNA at 6 weeks, HCV RNA and anti-HCV at 12 weeks, and anti-HCV at 24 weeks;

- Consideration of the need for immediate post-exposure HIV prophylaxis;

- Arrangement of suitable follow-up appointments for administration of further doses of HBV vaccine, monitoring of anti-retroviral therapy, and taking of appropriate blood samples for testing.

The source individual

4.8 Where appropriate, the individual who is the source of the blood/body fluid should be approached, given an explanation of the incident and asked for informed consent for them to be tested for HIV, HBV and hepatitis C (HCV), where the status is not already known. Such information will clearly impact on any decisions taken with regard to the management of the recipient. This universal approach to source testing for BBVs normalises the procedure and avoids perceived discrimination [EAGA HIV PEP Guidelines 2004[1]].

[1]HIV post-exposure prophylaxis: Guidance from the UK Chief Medical Officer's Expert Advisory Group on AIDS. Department of Health / EAGA. 2004. Available from:http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4083638

Incident reporting

4.9 Mandatory Scheme for Reporting Exposures

Occupational exposures to blood borne viruses, (hepatitis B, hepatitis C and HIV), are reportable to the Health and Safety Executive under The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) as a:

- Dangerous occurrence – as the exposure would qualify as an 'accidental release of a biological agent likely to cause severe human illness';
- Over-three-day injuries – if exposure to the blood borne virus resulted in the worker being absent from work for three or more days;
- Diseases – if exposure to the blood borne virus resulted in the worker acquiring the virus.

Further details relating to RIDDOR and how to report are available at: www.hse.gov.uk/riddor
The Health and Safety Executive's Infoline is available for advice, telephone: 08701 545500

4.10 Voluntary Scheme for Reporting Exposures

Health Protection Agency Centre for Infections – Surveillance of Significant Occupational Exposures to Blood borne Viruses in Healthcare Workers

The Health Protection Agency receives reports on:

- Significant percutaneous or mucocutaneous exposures to blood or other body fluids from a source that is known to be, or as a result of the incident found to be, hepatitis B surface antigen (HBsAg), hepatitis C, or HIV positive.
- Significant percutaneous or mucocutaneous exposures to blood or other body fluids from a source patient considered to be of high risk of HIV, but the viral status is unknown and the worker has commenced HIV PEP.

Further details on the surveillance scheme are available at: www.hpa.org.uk/infections/topics_az/bbv/bbmenu.htm
Alternatively, please contact the Health Protection Agency Centre for Infections, HIV/STI Department, 61 Colindale Avenue, London NW9 5EQ; telephone 020 8327 7095/7152.