

## CARDIFF COUNCIL

### CODE OF GUIDANCE

#### **VACCINATIONS / IMMUNISATION AGAINST INFECTIOUS DISEASES**

1. This Code of Guidance provides advice from the Council's Occupational Health Service and Health and Safety Advisers on the need for vaccinations/immunisations of employees following a suitable and sufficient risk assessment.

It addresses the following:

- 1.0 Routine vaccinations
- 2.0 Blood borne viruses
- 3.0 Other viral or bacterial Infections
- 4.0 Assessing the need to vaccinate certain employees

#### **1.0 Routine vaccinations**

- 1.1 Routine vaccinations include the common vaccinations that are provided via primary care/general practitioners e.g. childhood vaccinations such as tetanus, polio, tuberculosis. The provision of these immunisations are the responsibility of primary care and employees should be advised to consult with their General Practitioner if they require advice on these routine immunisations/boosters etc.
- 1.2 The latest advice on tetanus and polio is that if an individual has received 5 injections / immunisations in the course of his/her lifetime then it is unlikely that further immunisation will be necessary. Employees should discuss with their GP or Practice Nurse in the event of any uncertainty.

#### **2.0 Blood borne viruses (BBV)**

- 2.1 Blood borne viruses cause infections when blood containing infectious agents are transferred into the body of another person. These are principally human immunodeficiency virus (HIV) that causes AIDS, and three of the viruses that cause hepatitis – Hepatitis B virus, Hepatitis C virus and Hepatitis D virus.
- 2.2 Accidental exposure to blood or body fluids in some circumstances can result in occupational transmission of infections. All the evidence currently available suggests that the occupational risk of infections of this kind is extremely low. Nevertheless, even when the risks are small or unproven, it is sensible to take advantage of all practical measures that can reduce the risks or eliminate them. In relation to HIV, where no vaccine is available, such measures include the strict adherence to safe working procedures and good hygiene. Many exposures result from failure to follow recommended procedures which include good

hygiene practices, safe handling and disposal of needles and other contaminated materials, or the wearing of personal protective equipment such as gloves and protective eyewear.

- 2.3 In many infections, the infectious agent may be present in the blood but for only a very short time and perhaps in a very small number, so that contact with blood presents a low risk to others. However, in some cases such as malaria, yellow fever and syphilis, the organisms persist for longer periods and in numbers sufficient to present a risk of transmission. This can occur either directly (hence care is needed to ensure that blood donors do not have syphilis or malaria) or indirectly, for example, yellow fever, by blood sucking insects such as mosquitoes. These particular infections are uncommon in the United Kingdom and the likelihood of being infected through occupational contact with blood is remote.
- 2.4 The main concern is with those agents that persist in the blood, possibly unknown to the carrier who may be asymptomatic (i.e. not show or feel any ill effects) and are known to be present in some of the population. These are detailed in Para 2.1. The control measures outlined in this document are applicable to all these and to the majority of other infectious agents that may be found in blood at some time during the course of an illness.
- 2.5 Blood is not the only fluid of concern as various body fluids, especially those that may be contaminated with blood, may also present a risk unless suitable precautions are taken. These are principally:

- \* body fluids which may come from wounds during trauma;
- \* semen, vaginal secretions and;
- \* breast milk

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

The term BBV (blood borne virus(es) ) will be used in this guidance for brevity. When blood is mentioned it should be taken to include the high risk body fluids unless stated otherwise.

**NB** All the BBV are capable of causing disease and death. A common high standard of handling should be applied in all contact with blood, body fluids and tissues.

### Routes of transmission

- 2.6 BBV are transmitted through direct exposure to infected blood or other body fluids where entry of the virus occurs to the recipient. This may occur via the following routes:

- in sexual intercourse
- in sharing injecting equipment
- through skin puncture by blood contaminated sharp objects such as needles, instruments or glass
- in childbirth
- in blood transfusion
- through contamination of open wounds (less common)
- through splashing the mucous membranes of the eye, nose or mouth with blood or body fluids containing blood (less common)
- through human bites when blood is drawn

Experience to date has shown that BBV infections are rare and are very unlikely to be transmitted by work related factors (especially where safe procedures are followed) or during everyday social contact such as shaking hands or sharing utensils etc.

## **Nature and extent of risk presented by blood borne viruses**

### **2.7 HIV infection and AIDS**

HIV (Human Immunodeficiency Virus) is potentially the most serious sexually transmitted and blood borne infection. If the virus is transmitted, an individual may remain well and unaware of any symptoms for a number of years. However, it has the capability to gradually destroy the critical component of the body's immune system making the individual prone to opportunistic infections and malignancies that define the condition called AIDS (Acquired Immune Deficiency Syndrome).

The term AIDS should be reserved for a person with at least one well defined life threatening clinical condition that is clearly linked to HIV induced immuno-suppression. At the moment there is no cure for AIDS, but there are drugs available that can delay its onset and control symptoms.

### **Occupational exposure to HIV**

2.8 All the evidence suggests that the occupational risk of HIV infection to individuals such as council workers is small. Nevertheless, even when risks are small or unproven, it is sensible to take advantage of all practical measures to reduce the risks or eliminate them. In relation to HIV where no vaccine is available, such measures include the strict adherence to safe procedures and working practices with correct use of appropriate PPE.

2.9 The risk of acquiring HIV infection following occupational exposure to HIV infected blood is low. Previous studies have indicated that the average risks for HIV transmission after exposure of a cut, abrasion, laceration to HIV infected blood is 3 per 1,000 injuries. An exposure of a mucous membrane, such as the lining of the mouth or the eye, to HIV infected blood is estimated at less than 1 in 1000. Evidence suggests

that there is no risk of HIV transmission where intact skin is exposed to HIV infected blood. Urine, vomit, saliva and faeces are regarded as low risk unless they are visibly blood stained.

### **Hepatitis B Virus**

2.10 If following significant exposure to Hepatitis B virus there is transmission, then this may result in infection. See Para 2.6 for routes of transmission. The period of significant exposure / transmission to infection effects varies between 40 – 160 days.

2.11 The effects of the infection is normally of an insidious onset, with anorexia, vague abdominal discomfort, nausea and vomiting, sometimes joint pain and rash. Severe illness with jaundice can occur and acute liver failure can develop which often progresses to jaundice. A mild fever may be present. The Hepatitis B virus may persist or become chronic, or produce a carrier state in which the individual may be symptom free but harbour the virus. Individuals incubating or suffering from acute hepatitis are highly infectious.

2.12 The majority of cases make a full recovery. A small proportion of cases may develop chronic infection (approx 5% or less). Approximately half of people infected with Hepatitis B experience no symptoms at all and it is possible to become a carrier without knowledge of previous infection.

2.13 A vaccine is available for the prevention of HBV infection and is recommended for certain work groups. These are:

- **Healthcare workers** – all healthcare workers who may have direct contact with patient's blood, blood-stained body fluids or tissues, require vaccination. This includes any staff who are at risk of injury from blood contaminated sharp instruments, or of being deliberately injured or bitten by patients. Healthcare workers should be offered Hepatitis B vaccination for free under the NHS. To this end, this facility should be available to Council staff involved in health care via the GP. Further advice should be obtained from the Occupational Health Service.
- **Laboratory staff** – who handle material that may contain the virus (unlikely to involve Council staff)
- **Staff of residential and other accommodation for those with learning difficulties** – a higher prevalence of Hepatitis B carriage has been found among certain groups of patients with learning difficulties in residential accommodation than in the general population. Close contact and the possibility of behavioural problems, including biting and scratching, may lead to staff being at increased risk of significant exposures which may lead to transmission and infection. In settings where the client's behaviour is likely to lead to significant exposures on a

regular basis (e.g. biting), it would be prudent to offer immunisation to staff.

Similar considerations may apply to staff in day care settings and special schools for those with severe learning disability. Decisions on immunisation in these circumstances should be made on the basis of a local risk assessment and the Occupational Health Service can be contacted to discuss further and assist in the risk assessment process.

- **Other occupational groups** - There is no specific recommendation to vaccinate other Council staff. For groups that may feel that Hepatitis B vaccination should be considered, local risk assessments should be performed as appropriate. This will include an assessment of the frequency of likely significant exposures. For those with frequent significant exposures, pre-exposure immunisation is likely to be recommended. For other groups, **post exposure immunisation** at the time of an incident may be more appropriate (refer to 1.CM.179). Such a selection should be decided following consultation with the Occupational Health Service utilising appropriate medical advice.

### **Hepatitis C Virus**

2.14 See Para 2.6 for routes of transmission. Drug abusers are at high risk of HCV infection as it is mostly spread percutaneously. Sexual transmission is uncommon but may occur. There is no vaccine against the Hepatitis C Virus, therefore it is essential that safe working practices, good hygiene and correct use of appropriate PPE is followed at all times in higher risk tasks to avoid significant exposures.

### **Hepatitis D Virus**

2.15 Hepatitis D requires the presence of Hepatitis B to replicate and therefore only occurs in carriers of Hepatitis B. However, a person who is free of Hepatitis B, is able to contract Hepatitis B and Hepatitis D simultaneously from an individual infected with both viruses. Methods of transmission include blood to blood spread and sexual contact.

### **Management of accidental exposure to blood or body fluids**

2.16 Despite safe procedures, accidents may occur which require first aid, post accident assessment and if indicated, immunisation. Post accident immunisation can prevent some infections occurring after there has been a significant exposure to infected blood or body fluids.

2.17 Definition of a **significant exposure** would include the following:

**Blood on laceration/abrasion.** When an open cut or abrasion is contaminated with the blood of another individual (e.g. wound caused by a sharp instrument such as a razor or needle which is contaminated with blood).

**Blood on mucous membrane.** When the mucous membrane (i.e. the lining of the eyes, nose or mouth) is contaminated with blood from another individual.

**Body fluid on laceration/abrasion.** When an open cut or abrasion is contaminated with body fluid (saliva, urine, semen) of another individual (e.g. bite which draws blood).

2.18 A **non significant exposure** would include:

**Body fluid on a mucous membrane.** When a mucous membrane becomes contaminated with the body fluid from another individual, there is theoretical risk of transmission. However, transmission after such an incident are considered non significant in view of the fact that no transmissions have been confirmed following such an exposure. Note, however, if the body fluid is visibly blood stained then the incident should be categorised as a **significant exposure**.

2.19 **In the event of a significant exposure:**

- a) Apply appropriate first aid. The wound should be washed thoroughly with soap and water without scrubbing. If the mucous membranes of the mouth, nose or eyes have been splashed with blood or body fluids, they should be irrigated with plenty of water. If there has been a puncture wound, free bleeding should be encouraged but the wound should not be scrubbed.
- b) Complete an Accident Report Form (1.CM.012) and a Blood borne infectious potential exposure procedure and record form (1.CM.179).
- c) Report as soon as possible (preferably within 12 hours) to the Accident and Emergency Department at the University Hospital of Wales. Take the Blood borne infections potential exposure procedure record form (1.CM.179) with you and give to the Casualty Officer for completion. If the injury has been caused by a needle/syringe, the needle/syringe should, where possible, be retrieved in a safe manner without risking further injury. Once safely retrieved the needle / syringe should be placed in a suitable container and transported with the employee to the Accident and Emergency Department and handed to the Casualty Officer for further analysis by hospital laboratory staff.
- d) The Accident and Emergency Department will determine if post exposure prophylaxis is required (in accordance with Department of Health guidance and recommendations).
- e) Return completed form 1.CM.179 to the Council's Occupational Health Service.

### 3.0 Other viral or bacterial infections

3.1 There are numerous other viral and bacterial infections, not mentioned above, that may pose a theoretical risk e.g. Leptospirosis (Weil's Disease), gastro-intestinal and eye infections. There are no vaccines against these and to this end, it is essential that safe working practices, good hygiene procedures and correct use of appropriate PPE are adhered to at all times to prevent any risk of exposure or infection. These principles will prevent against significant exposures to the diseases listed previously in this guidance and to this end the main emphasis on immunisation as the main control measure or a substitute for safe working practices, good hygiene and correct use of PPE should be avoided.

#### Hepatitis A

3.2 Hepatitis A is an infection of the liver caused by Hepatitis A virus. The disease is generally mild, but severity tends to increase with age. Asymptomatic disease is common in children. Jaundice may occur in 70-80% of those infected as adults. The overall case fatality ratio is low but greater in the elderly and those with pre existing liver disease. There is no chronic carrier state and chronic liver damage does not occur. The incubation period is usually around 28-30 days but may occasionally be as little as 15 or as much as 50 days.

3.3 The Hepatitis A virus is transmitted by the faecal oral route and such contact should be classed as a significant exposure. It is therefore not classed as a Blood Borne Virus as the other Hepatitis Viruses. The risk of occupational transmission is greatly minimised by careful attention to personal hygiene and correct wearing of PPE. Person to person spread is the most common method of transmission. The risk of occupational transmission is very low and is minimised further by careful attention to personal hygiene, safe working practices and correct use of appropriate personal protective equipment. Good hygiene, particularly hand washing, is the cornerstone of prevention and should be promoted in settings at increased risk of the virus being present. Clean facilities for hand washing should be universally available and used routinely on a regular basis.

3.4 Incidence of Occupational transmission of Hepatitis A is extremely low. However, there is a vaccine recommended for certain groups with regards to occupational exposure. These include:

- **Laboratory Staff** – who handle material that may contain the virus (unlikely to involve council staff)
- **Staff of some large residential institutions** – outbreaks of Hepatitis A have been associated with large residential institutions for those with learning difficulties. Transmission can occur more readily in such institutions and immunisation of staff

and residents may be appropriate. In such groups, prevention of significant exposures can be well controlled and avoided with through safe working practices, good hygiene and the use of PPE where appropriate. These recommended actions should reduce the risks reduced to an acceptable level in the majority of situations therefore not requiring a vaccination program. For further advice contact the Occupational Health Service.

- **Sewage workers** – raw, untreated sewage is frequently contaminated with Hepatitis A. A UK study to evaluate the risk showed that frequent occupational exposure to raw sewage was an independent risk factor for Hepatitis A infection (Brugha et al 1998). Immunisation, is therefore recommended for workers at risk of **repeated** exposure to raw sewage, who should be identified following a local risk assessment. For further advice contact the Occupational Health Service.

3.5 Hepatitis A vaccination may also be considered under certain circumstances for:

- **Staff in day care facilities** – one study has identified that infection in young children is likely to be sub-clinical and those working in day centres and other settings with children who are not yet toilet trained **may** be at increased risk (Severo et al 1997). Under normal circumstances, the risk of transmission to staff and children can be greatly minimised to an acceptable level by careful attention to personal hygiene, safe working practices and the use of PPE. Therefore, vaccination would not normally be indicated in such occupational groups. However, in the case of a well defined community outbreak, the need for immunisation would be recommended by a Consultant in Communicable Disease Control.
- **Healthcare workers** – most healthcare workers are **NOT** at increased risk of Hepatitis A and routine immunisation is not indicated even though there is regular contact with faeces. Hepatitis A is spread by faecal to oral route, therefore the risks of transmission should be minimal by adopting safe working practices, wearing PPE and performing good hygiene practices i.e. hand washing.

#### 4.0 Assessing the need to vaccinate certain employees

4.1 On the basis of the information provided above, it is likely that routine immunisation against Hepatitis B and Hepatitis A may not be necessary in the majority of Council employee's but may be recommended for certain groups following a suitable and appropriate risk assessment.



- 4.2 In considering whether this is actually the case, a structured local risk assessment should be conducted. During this process, a difference needs to be distinguished between a hazard assessment and a risk assessment. It is often the case that some individuals base the decision on the necessity of immunisations upon a hazard assessment alone and actual risk of significant exposure and subsequent transmission by adopting safe procedures is not adequately considered. This Code of Guidance will encourage this imbalance to be addressed with a more informed risk assessment.

The prevention of significant exposures is key to the prevention of transmission. The main emphasis should be placed on employees adopting good hygiene practices and following safe working practices to minimise the opportunity for significant exposure. Any open cuts or abrasions should also be covered and where appropriate all necessary PPE should be correctly worn. Immunisation should not be seen as the first or only control option in preventing blood borne virus infection. In view of the fact that immunisation is not available for viruses such as HIV and Hepatitis C, it is essential to ensure that safe working practices, good hygiene and correct use of PPE is adopted at all times where a hazard has been identified avoid significant exposures from occurring.

- 4.3 A suitable and sufficient risk assessment should consider:

- i) What is the nature of the identified hazard?
- ii) Are good hygiene practices being followed?
- iii) Are safe working practise being implemented?
- iv) Have employees received sufficient education/training on good hygiene and safe working practices?
- v) Can potential exposures be removed by changing working practices?
- vi) Is the personal protective equipment suitable and sufficient for the work involved and is it correctly used?
- vii) Is suitable equipment provided for the work involved?
- viii) How many significant exposures/incidents have occurred in recent years? Why did they occur? Consider whether they were as a result of failure to follow recommended procedures or whether there are inadequacies in current procedures that need to be further explored and addressed.

- 4.4 If, after a suitable and sufficient risk assessment is carried out and further advice is required on whether immunisation is indicated or appropriate, then the Occupational Health Service should be consulted (029 2087 3745) for additional advice on how best to proceed.

- 4.5 If the Occupational Health Service agrees that immunisation of certain employees is appropriate, then suitable advice will be provided on how to progress.

**Further Information:**

[1.CM.029](#) Code of Guidance - Handling and Disposal of Needles and Syringes

[1.CM.179 Blood Borne Infections Potential Exposure Procedure & Record](#)

Immunisation against infectious diseases (The Green Book) 2006

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