



Public Health
England

Protecting and improving the nation's health

Integrated guidance on health clearance of healthcare workers and the management of healthcare workers infected with bloodborne viruses (hepatitis B, hepatitis C and HIV)

October 2017

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

Public Health England
Wellington House
133-155 Waterloo Road
London SE1 8UG
Tel: 020 7654 8000
www.gov.uk/phe
Twitter: [@PHE_uk](https://twitter.com/PHE_uk)
Facebook: www.facebook.com/PublicHealthEngland

© Crown copyright 2017

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v3.0. To view this licence, visit [OGL](https://www.nationalarchives.gov.uk/ogl/) or email psi@nationalarchives.gsi.gov.uk. Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Published October 2017
PHE publications gateway number: 2017365
PHE supports the UN Sustainable Development Goals



Contents

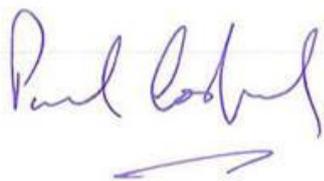
About Public Health England	2
Contents	3
Chapter 1: Introduction	6
Part A: DEFINITION OF KEY TERMS	12
Chapter 2: Exposure prone procedures	12
Chapter 3: Identified and validated samples	15
Chapter 4: Hepatitis B diagnostic cut-off and changes to designated laboratory status	17
Part B: GENERAL PRINCIPLES	19
Chapter 5: Duties and obligations of HCWs	19
Chapter 6: Roles and responsibilities of organisations	21
Chapter 7: Confidentiality concerning the infected healthcare worker	23
PART C: BLOODBORNE VIRUS HEALTH CLEARANCE	24
Chapter 8: Health clearance for hepatitis B, hepatitis C and HIV: New healthcare workers	24
PART D:	32
MANAGEMENT OF BLOODBORNE VIRUS INFECTED HEALTHCARE WORKERS	32
Chapter 9: Occupational health monitoring of bloodborne virus infected healthcare workers	32
Chapter 10: Hepatitis B virus	36
Chapter 11: Hepatitis C Virus	45
Chapter 12: HIV	49
PART E: PATIENT NOTIFICATION EXERCISES	57
Chapter 13: The UK Advisory Panel on Healthcare Workers Infected with Bloodborne Viruses (UKAP)	57
Chapter 14: Investigation of a healthcare worker diagnosed with BBV, including deciding whether a patient notification exercise is required	59
Chapter 15: Undertaking a patient notification exercise	67
PART F: GENERAL PRINCIPLES OF BLOODBORNE VIRUS INFECTION CONTROL	75
PART G: LINKS TO GUIDANCE DOCUMENTS AND WEBPAGES	77

Foreword

This document brings together the current guidance on the management of blood-borne viruses in healthcare workers; it includes guidance on clearance and monitoring of healthcare workers who undertake exposure-prone procedures and advice on the investigation and management of any healthcare workers found to have a blood-borne virus.

The diagnosis and treatment of blood-borne viruses is a rapidly evolving field, with new highly effective treatments being used which change the impact of blood-borne virus infection on a healthcare worker's ability to practice. As new developments come into use, the UK Advisory Panel will review their impact on existing recommendations and guidance will be updated accordingly.

There are a number of reviews underway and further updates to this guidance are likely to occur in the coming year. Further information about these can be sought from the UKAP secretariat.

A handwritten signature in blue ink, appearing to read 'Paul Cosford', with a horizontal line underneath it.

Professor Paul Cosford
Director for Health Protection & Medical Director
Public Health England

What is new in this document

While this guidance does not represent a policy change, there are some new elements including

- The concept of 'exposure-prone environment' has been added
- There are changes in the arrangements for testing and reporting of results for hepatitis B (testing is now permitted in accredited laboratories rather than being restricted to 'designated laboratories').
- Additional information has also been published for the first time about arrangements for patient notification exercises

How to use this document

This document brings together the guidance on investigation and management of healthcare workers that was previously found in a number of separate publications.

The document is not designed to be read sequentially, the different sections cover the key aspects of health clearance and monitoring and investigation of infected healthcare workers; these sections can be read as 'stand-alone' sections.

For colleagues new to this topic, sections A and B give background to the guidance, summary of the key issues relating to BBVs in healthcare workers and a description of the terminology and concepts used.

If used as an electronic document, the contents table can be used to access the relevant sections.

For convenience / easy access, the flowcharts in the document are also available as stand-alone documents on the UKAP website.

Relevant guidance from other organisations is referenced in this document with links to the appropriate webpages on the UKAP site.

As new guidance recommendations are made, this document will be updated; therefore the document should be used in electronic format to ensure the most recent guidance is being followed.

Chapter 1: Introduction

In the UK, the policy on the management of healthcare workers (HCWs) infected with hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV) was precautionary and conservative in the first instance. These have however, evolved over time guided by emerging evidence on the risk of HCWs transmitting bloodborne viruses (BBVs) to their patients, experience of patient notification exercises (PNEs) and the recommendations of the Expert Advisory Group on AIDS (EAGA), the Advisory Group on Hepatitis (AGH) and the UK Advisory Panel for Healthcare Workers Infected with Bloodborne Viruses (UKAP), who have regularly reviewed the policies for managing BBV infected HCWs.

1.1 Evolution of policy on the management of bloodborne virus infection in healthcare workers

HIV

The first guidance, published by the General Medical Council in 1988 addressed the duties of doctors infected with HIV or who had developed AIDS. This stated:

‘It is imperative, both in the public interest and on ethical grounds that any doctors who consider that they may have been infected with HIV should seek appropriate diagnostic testing and counselling, and if found to be infected, should have regular medical supervision. They should also seek specialist advice on the extent to which they should limit their professional practice in order to protect their patients. They must act upon that advice, which in some circumstances would include a requirement not to practice or to limit their practice in certain ways. No doctors should continue in clinical practice merely on the basis of their own assessment of risk to patients.¹

This was followed in 1988 with a recommendation from EAGA that HCWs who know or who suspect that they are infected with HIV and who ordinarily perform or assist in surgical invasive procedures, where blood to tissue contact can occur, must seek expert advice on whether there is a need to limit or modify their working practice.

These recommendations were made when there was no known case of HCW-to-patient HIV transmission. In making these recommendations, EAGA acknowledged the theoretical risk of such transmission based on existing knowledge of HBV transmission. Assessment of the magnitude of the risk was based on reports of occupationally

¹ General Medical Council. HIV infection and AIDS: The Ethical Considerations. May 1988.

acquired HIV. This evidence pointed to a low risk of transmission but grave consequences if such a transmission were to occur.

In 1991, following the Florida dentist incident², EAGA strengthened its advice stating that:

‘HIV infected HCWs should not perform invasive surgical procedures in which injury to the worker could result in blood contaminating a patient’s open tissues.’³

EAGA updated its guidance in 1993,⁴ recommending that HIV infected HCWs should not perform exposure prone procedures (EPPs) (as defined in [Chapter 2](#)). Updated versions of the guidance were subsequently published in 1998⁵ and 2005.⁶ The risk of HIV transmission from an infected HCW to their patient was reviewed by a Tripartite Working Group of EAGA, AGH and UKAP using data available from patient notification exercises (PNEs) undertaken between 1988 and 2008. No cases of HCW to patient HIV transmissions were identified despite over 10,000 patients being tested.⁷ The group concluded that the risk of HIV transmission from an infected and untreated HCW to a patient during EPPs was extremely low for the most invasive procedures (category 3) and negligible for less invasive procedures (category 1); this risk could be reduced even further by combination antiretroviral therapy (cART), if the HCW’s viral load is suppressed to a very low or undetectable level. Following this report, updated guidance was published in January 2014 which allowed HIV infected HCWs to undertake EPP if they were either on effective cART and had a plasma viral load <200 copies/mL, or were an elite controller and subject to viral load testing every three months.⁸

Hepatitis B

The policy on the management of HBV infected HCWs has evolved over time in light of epidemiological findings, the development of better laboratory tests and improved treatment options. The first guidance, issued by the Department of Health in 1993,⁹ followed a number of documented outbreaks of HBV in patients who were operated on by HBV e-antigen (HBeAg) positive HCWs. Based on recommendations from AGH, these HCWs were restricted from performing EPPs. This guidance was later amended in 1996 to allow an HBeAg positive HCW who was successfully treated and whose

² In 1990 a dentist in Florida was found to have infected 6 patients with HIV; the exact mode of transmission was never identified.

³ UK Health Departments. AIDS/HIV infected health care workers – occupational guidance for health care workers, their physicians and employers. 1991.

⁴ UK Health Departments. AIDS/HIV Infected health care workers: Guidance on the management of infected health care workers. 1993.

⁵ UK Health Departments. AIDS/HIV infected health care workers: Guidance on the management of infected health care workers and patient notification. December 1998.

⁶ UK Health Departments. HIV infected health care workers: Guidance on the management and patient notification. 2005.

⁷ The Expert Advisory Group on HIV and AIDS, the Advisory Group on Hepatitis and the UK Advisory Panel for Healthcare Workers Infected with Bloodborne Viruses. The Report of the Tripartite Working Group, Management of HIV-infected Healthcare Workers. 2011.

⁸ Public Health England. The management of HIV infected healthcare workers who perform exposure prone procedures: updated guidance. 2014.

⁹ UK Health Department. Health Service Guidelines HSG(93)40: Protecting health care workers and patients from hepatitis B. 1993.

HBeAg negative status was sustained 12 months after cessation of therapy, to be able to resume EPPs.¹⁰

Further cases of HBV transmission were, however, subsequently reported in HBV infected HCWs who were HBeAg negative. These HCWs were found to have high HBV DNA levels and in 2000, guidelines were issued which restricted HBeAg negative HCWs who had HBV DNA levels above 10^3 genome equivalents/mL (gEq/mL) from performing EPPs or clinical duties in renal units. The practice of HCWs with levels below 10^3 geq/mL, was not restricted subject to annual testing of their HBV DNA levels.¹¹ The 10^3 geq/mL HBV viral load cut-off point was chosen for the following reasons:

- it allowed a margin of safety to accommodate natural fluctuations in HBV DNA levels, and
- the lowest documented HBV DNA level at which transmission was reported was 10^4 geq/mL

Following advice from AGH, further guidance was issued in 2007, allowing HBV infected HCWs who were HBeAg negative and who had pre-treatment HBV DNA levels between 10^3 and 10^5 geq/mL to perform EPPs while on oral antiviral therapy, provided their viral load was suppressed to below 10^3 geq/mL and were subject to HBV DNA level testing every three months.¹²

Successful implementation and the efficacy of the policies for managing HBV infected HCWs has resulted in no detected transmission of HBV from HCWs to patients since the policy change in 2000.

Hepatitis C

The first reported incident in the UK, of HCV transmission from an infected HCW to a single patient was in 1994.¹³ Following this, the AGH recommended in 1995 that HCV infected HCWs associated with transmission of infection to patients should no longer perform EPPs.¹⁴ Following five further incidents in the UK in which HCV infected HCWs transmitted infection to 15 patients, DH published guidance in 2002¹⁵ introducing additional restrictions based on the advice from AGH.

¹⁰ UK Health Department. Addendum to HSG(93)40: Protecting Health Care Workers and patients from hepatitis B. 1996.

¹¹ UK Health Department. Health Service Circular HSC 2000/020: Hepatitis B infected health care workers. 2000.

¹² UK Health Department. Hepatitis B infected health care workers and antiviral therapy. 2007.

¹³ Duckworth GJ, Heptonstall J and Aitken C for the Incident Control Team and Others. Transmission of hepatitis C virus from a surgeon to a patient. *Commun Dis Public Health*. 1999;2:188-92.

¹⁴ Disease Surveillance Centre (CDSC). Hepatitis C virus transmission from health care worker to patient. *Commun Dis Rep CDR Wkly*. 1995;5:121.

¹⁵ Department of Health. Hepatitis C Infected Health Care Workers. 2002.

The guidance restricts HCWs who are known to be infected with HCV (HCV RNA positive) from carrying out EPPs. HCV infected HCWs who have a sustained viral response to therapy, that is those who remain HCV RNA negative 6 months after the course of treatment has ended, are allowed to return to performing EPPs at that time and are subject to a further check 6 months later.

Health clearance for new healthcare workers

The 2002 guidance for managing HCV infected HCWs was also the first to recommend testing of HCWs who were about to start careers or training that would rely on the performance of EPPs. This principle of screening HCWs for BBVs was further developed and expanded to include HIV and HBV in the guidance on health clearance for HCWs new to the NHS published in 2007.¹⁶ This guidance aimed to identify, and consequently restrict, all new HCWs infected with BBVs from working in clinical areas where their infection may pose a risk to patients in their care. The guidance did not apply to HCWs already employed in the NHS, with the exception of those moving to a post requiring the performance of EPPs for the first time in their career, who were considered to be under an ongoing obligation to seek professional advice about the need to be tested if they had been exposed to a serious communicable disease.

1.2 Rationale for consolidated guidelines

The previous publications have provided important guidance for all HCWs and their employers. Their development across the years, however, has resulted in relevant information being contained across a number of documents.

This guidance has for the first time combined these publications and related guidance documents into one set of comprehensive guidance that clarifies the duties of HCWs, their medical advisers and employers, and describes i) the BBV health clearance measures for new HCWs¹⁷, ii) the follow-up and management of HIV and/or HBV infected HCWs who perform EPPs and iii) procedures which should be followed if a PNE is being considered.

The consolidated guidance offer the following anticipated benefits:

- new and existing guidance is harmonised
- consolidation promotes the consistency of approaches across all settings
- the guidance address the process for monitoring BBV infected HCWs cleared to perform EPPs, including pragmatic guidance for decision-makers on applying the operational recommendations and monitoring their implementation

¹⁶ Department of Health. Health clearance for tuberculosis, hepatitis B, hepatitis C and HIV: new healthcare workers. March 2007.

¹⁷ This guidance does not cover the checks for tuberculosis disease/immunity

This guidance combines and replaces the following:

General

- Health clearance for tuberculosis,¹⁸ hepatitis B, hepatitis C and HIV: New healthcare workers. Department of Health. March 2007
(The bloodborne virus sections of this guidance only; the document should still be used for guidance on clearance for tuberculosis)

HIV

- The Management of HIV infected Healthcare Workers who perform exposure prone procedures: updated guidance, January 2014. Public Health England

Hepatitis B

- Hepatitis B infected healthcare workers and antiviral therapy. Department of Health. March 2007
- Hepatitis B infected healthcare workers. Health Service Circular, HSC 2000/020. Department of Health. 23 June 2000
- Hepatitis B infected healthcare workers: guidance on implementation of Health Service Circular, HSC 2000/020. Department of Health. 2000
- Protecting healthcare Workers and Patients from Hepatitis B: Recommendations of the Advisory Group on Hepatitis. Department of Health. August 1993
- Protecting healthcare Workers and Patients from Hepatitis B. Health Service guidelines, on Hepatitis. HSG(93)40. Department of Health. 18 August 1993
- Addendum to HSG(93)40: Protecting healthcare workers and patients from hepatitis B - EL (96) 77. Department of Health. 26 September 1996
- Addendum to HSG(93)40: Protecting health care workers and patients from hepatitis B. Department of Health. April 2004

Hepatitis C

- Hepatitis C infected healthcare workers. Health Service Circular, HSC 2002/010. Department of Health. 14 August 2002
- Hepatitis C Infected Healthcare Workers. Department of Health. August 2002

¹⁸ The consolidated guidance **does not include recommendations on health clearance for new HCWs for tuberculosis**; current guidance is however, available [here](#).

1.3 Objectives

The integrated guidance provides updated, evidence based recommendations that are intended to:

- reduce the risk of HCW to patient transmission of BBVs
- reduce the future burden of PNEs

The guidance is also intended to provide advice on key operational and service delivery issues that need to be addressed to ensure BBV infected HCWs who perform EPPs are managed in a manner that safeguards their confidentiality and employment rights.

1.4 Target audience

The guidance are intended primarily for use by national occupational health services who have the responsibility for dealing with all matters arising from, and relating to, the training and/or employment of BBV infected HCWs. The guidance will also be of interest to all HCWs in the NHS including independent contractors such as general dental and medical practitioners and relevant staff; independent midwives; students; locums and agency staff; and visiting HCWs, providing a reminder of their responsibility to seek professional advice about the need to be tested if they have been exposed to BBVs.

The guidance are also relevant to NHS organisations who arrange for NHS patients to be treated by non-NHS health establishments in the UK; these organisations should ensure that HCWs who perform EPPs on NHS patients in these settings follow this guidance.

The preparation of the integrated guidance has been supported by UKAP and the clinical and public health groups represented by UKAP members.

Part A:

DEFINITION OF KEY TERMS

Chapter 2: Exposure prone procedures

Provided appropriate infection control precautions are adhered to scrupulously at all times, the majority of clinical procedures (including many which are invasive) in the healthcare setting pose no risk of transmission of BBVs from an infected HCW to a patient, and can safely be performed.

Those procedures where an opportunity for HCW-to-patient transmission of BBV does exist are described as ‘exposure prone’, where injury to the HCW could result in the worker’s blood contaminating the patient’s open tissues. This is described as “bleed-back” in this guidance. The majority of HCWs do not perform EPPs.

EPPs include procedures where the worker’s gloved hands may be in contact with sharp instruments, needle tips or sharp tissues 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.

The definition of EPPs covers a wide range of procedures, in which there may be very different levels of risk of bleed-back. A risk-based categorisation of clinical procedures has been developed, including procedures where there is negligible risk of bleed-back (non-EPP) and three categories of EPPs with increasing risk of bleed-back.

The definitions and examples of categories 1, 2 and 3 are:

Category 1

Procedures where the **hands and fingertips of the worker are usually visible and outside the body most of the time** and the possibility of injury to the worker’s gloved hands from sharp instruments and/or tissues is slight. This means that the risk of the HCW bleeding into a patient’s open tissues should be remote.

Examples: local anaesthetic injection in dentistry, removal of haemorrhoids.

Category 2

Procedures where the **fingertips may not be visible at all times but injury to the worker's gloved hands from sharp instruments and/or tissues is unlikely**. If injury occurs it is likely to be noticed and acted upon quickly to avoid the HCW's blood contaminating a patient's open tissues.

Examples: routine tooth extraction, appendicectomy.

Category 3

Procedures where the **fingertips are out of sight for a significant part of the procedure, or during certain critical stages, and in which there is a distinct risk of injury to the worker's gloved hands from sharp instruments and/or tissues**. In such circumstances it is possible that exposure of the patient's open tissues to the HCW's blood may go unnoticed or would not be noticed immediately.

Examples: hysterectomy, caesarean section, open cardiac surgical procedures.

A categorisation of the most common clinical procedures depending upon the relative risk of bleed-back has been developed by UKAP. Examples of UKAP's advice on which procedures are, and are not, exposure prone are available on the UKAP webpage [here](#)

Non-exposure prone procedures

Non-EPPs are those where the hands and fingertips of the worker are visible and outside the patient's body at all times, and internal examinations or procedures that do not involve possible injury to the worker's gloved hands from sharp instruments and/or tissues, are considered not to be exposure prone provided routine infection control procedures are adhered to at all times.

Examples:

- taking blood (venepuncture)
- setting up and maintaining intravenous lines or central lines (provided any skin tunnelling procedure used for the latter is performed in a non-exposure prone manner)
- minor surface suturing
- the incision of external abscesses
- routine vaginal or rectal examinations
- simple endoscopic procedures

Exposure –prone environments

The exposure prone environment is “an environment in which there is a significant intrinsic risk of injury to the healthcare worker, with consequent co-existent risk of contamination of the open tissues of the patient with blood from the healthcare provider”. Examples will include road traffic collisions (RTCs) or domestic/recreational/industrial accidents where sharp surfaces such as glass fragments, sharp metal or stone edges, may lead to laceration of the skin of the HCW, whilst in the process of attending to and/or retrieving a casualty.

The risk of iatrogenic BBV transmission or of such infection from another patient, in the pre-hospital emergency setting is not known. The United Kingdom Advisory Panel on Blood Borne Viruses in Healthcare Workers (UKAP) has received no reports of such infection in this setting, and standard literature searches are inconclusive in quantifying this risk. Nevertheless, there is a theoretical risk of such a route of infection, requiring an approach to risk assessment and mitigation that is both proportionate and practical, and considers the role of the emergency HCW, and the environment in which pre-hospital emergency care is given.

Guidance on emergency and out of hospital care is available on the UKAP webpage [here](#)

Chapter 3: Identified and validated samples

Those commissioning tests should ensure that identified and validated samples (IVS) are used for BBVs, that is they should ensure that samples tested are from the HCW in question and not open to fraudulent submission of samples or tampering with samples or results. HCWs should not submit their own samples.

The following standards for occupational health data recording have been agreed by the Association of NHS Occupational Physicians (ANHOPS) and the Association of NHS Occupational Health Nurses (ANHON) as the two relevant professional bodies:

- laboratory test results required for clearance for undertaking EPPs, and ongoing monitoring thereafter must be derived from an IVS.
- results should not be recorded in occupational health records if not derived from an IVS

An IVS is defined by ANHOPS and ANHONS as meeting the following criteria:

- the HCW should show a proof of identity with a photograph (for example trust identity badge, new driver's licence, some credit cards, passport or national identity card) when the sample is taken
- the sample of blood should be taken in the occupational health service¹⁹
- samples should be delivered to the laboratory in the usual manner, not transported by the HCW
- when results are received from the laboratory, the clinical notes should be checked for a record that the sample was sent by the occupational health service, at the relevant time

All samples sent for BBV testing for EPP clearance purposes should be accompanied by a request form which contains as a minimum:

- Forename
- Surname
- Date of Birth
- Purpose of testing "clearance for EPP"
- Information on whether the HCW is, or is not, taking antiviral therapy

¹⁹ Blood testing for the purpose of ongoing monitoring of HIV or HBV infected HCWs who perform EPPs will usually be carried out by the occupational health service but where this would give rise to duplication of testing, local arrangements should be made between the treating physician and the occupational health service to ensure that blood drawn from HBV/HIV infected HCWs for viral load measurements in GUM or infectious diseases settings follows the principles of an IVS.

For circumstances where coding is required or preferred, the occupational physician should liaise with the lead consultant microbiologist/virologist in the local laboratory to ensure a consistent coding system unique to that laboratory is used, and that serial samples from the same HCW are identifiable as such.

Chapter 4: Hepatitis B diagnostic cut-off and changes to designated laboratory status

The original guidance for HBV infected HCWs specified a cut-off of 10^3 gEq/mL, above which HCWs were not allowed to perform EPPs. HBV DNA testing was restricted to two designated laboratories, (the West of Scotland Specialist Virology Centre and the Public health laboratory Birmingham), who were able to benchmark HCW-derived samples against a WHO International Standard known to contain 10^3 gEq/mL.

In the years since issuance of that guidance, commercially available HBV viral load assays have been developed that use a WHO International Standard for Hepatitis B Virus Nucleic Acid Amplification Techniques²⁰. The International Standard and CE marked quantitative HBV DNA PCR assays calibrated to this standard are now widely available and it is now standard practice for HBV viral load assay results to be reported in international units per millilitre (IU/mL).

Going forward, **viral load testing can be undertaken by any Clinical Pathology Accreditation (UK) Limited or United Kingdom Accreditation Service accredited virology laboratory in the United Kingdom, provided a CE marked assay, which is standardised to the WHO International Standard for Hepatitis B Virus Nucleic Acid Amplification Techniques, is used and HBV DNA levels are reported in international units per millilitre (IU/mL).** The historical cut-off has been converted to IU / mL by dividing by a factor of 5 to approximate the conversion used in the most commonly used assays. Thus 10^3 gEq / mL = 200IU / mL, and this replaces the previous cut-off for performing EPPs.

Two cut-offs have been used historically for pre-treatment viral load. 10^3 gEq/ml is equivalent to 200 IU/mL; 10^5 gEq/ml is equivalent to 20,000 IU/mL. Where pre-treatment viral load was measured before the introduction of this new guidance, viral loads reported as either gEq/mL or IU/mL are acceptable; **results should not be converted between units.**

²⁰ Bioassays, including quantitative HBV DNA PCR (viral load) testing use complex biological systems to test activity, they are therefore variable from test to test. By using a biological reference material or standard of known concentration, bioassay results can be compared and calibrated to give a consistent result, no matter when or where the bioassay is performed. The WHO International Standards are calibrated in units of biological activity which are assigned following extensive studies involving multiple international laboratories.

Table 1: Previous and newly-issued guidance on hepatitis B diagnostic cutoffs for clearance of healthcare workers performing EPP

Item	Previous guidance	New guidance
Cut-off for clearance to perform EPP	<10 ³ gEq/mL	<200 IU/mL
Pre-treatment viral load cut-off for clearance to perform EPP	<10 ⁵ gEq/mL	<20,000 IU/mL (or <10 ⁵ gEq/mL if measured pre-issuance of new-guidance)
Testing laboratory	One of two designated laboratories.	CPA or UKAS accredited laboratory in the UK, using CE marked assay standardised to the WHO International Standard for Hepatitis B Virus Nucleic Acid Amplification Techniques, reported in IU/mL.
Specimen type	Identified and validated samples (IVS)	IVS

The historical cut-off, in gEq / mL, has been converted to IU / mL by dividing by a factor of 5 to approximate the conversion used in the most commonly used assays (i.e. 10³ gEq / mL = 200 IU / mL). The impact of this recommendation will be monitored and reviewed if there are practical concerns regarding implementation.

Part B:

GENERAL PRINCIPLES

Chapter 5: Duties and obligations of HCWs

5.1 Healthcare workers who are, or may be infected with a bloodborne virus

All HCWs, including those who are self employed or employed in the independent sector, are under ethical and legal duties to protect the health and safety of themselves and of others, such as colleagues and patients, and must have understanding of, and co-operate in health and safety matters.

The current statements of the General Medical Council (GMC), General Dental Council (GDC), the Nursing and Midwifery Council (NMC) and the Health & Care Professions Council (HCPC) about the ethical responsibilities of HCWs sets out the expectations with regards to safeguarding the health of patients, and minimising the risk of exposure to BBVs through the provision of care. These responsibilities are equally applicable to all other professional groups not covered by these regulatory bodies.

Patient safety and public confidence are paramount and dependent on the BBV positive or potentially infected HCW observing their duty of self-declaration to an occupational physician. This means HCWs are under an ongoing obligation to seek professional advice about the need to be tested if they have any reason to believe that they may have been exposed to infection with a serious communicable disease either through a specific occupational incident or outside their work environment. Failure to do so may breach the duty of care to patients.

For those HCWs who are aware that they are infected with one or a combination of HIV, HBV or HCV, it is incumbent on the HCW to ensure that they are assessed regularly by their treating physician and promptly seek and follow appropriate expert occupational health advice. HCWs who are self employed or doing locums may have to arrange to take advice from an occupational physician themselves if it is not provided by the locum agency or employer.

Employers should promote a climate that encourages confidential disclosure. Those who perform, or who may perform, EPPs must obtain further expert advice about modification or limitation of their working practices to avoid EPPs until they meet the appropriate criteria to recommence EPPs. Procedures which are thought to be exposure prone must not be performed whilst expert advice is sought.

HCWs applying for new posts should complete health questionnaires honestly. Infection with one or a combination of HIV, HBV or HCV would be a medical condition about which an occupational physician should be informed.

All healthcare professionals who have direct clinical care of patients, have a duty to keep themselves informed and updated on the codes of professional conduct and guidelines on infection with BBVs laid down by their regulatory bodies and any other relevant guidance issued.

5.2 Other healthcare workers

HCWs who know or have good reason to believe (having taken steps to confirm the facts as far as practicable) that a HCW who is infected with a BBV has not complied with this guidance or followed advice to modify their practice, should inform an appropriate person in the HCW's employing or contracting authority (eg a consultant occupational physician, trust medical director or director of public health), or where appropriate, the relevant regulatory body. HCWs may wish to seek advice from their regulatory and professional bodies before passing such information on. Such cases are likely to arise very rarely. Wherever possible, the HCW should be informed before information is passed to an employer or regulatory body.

Chapter 6: Roles and responsibilities of organisations

6.1 Occupational health service

All matters arising from and relating to the training and/or employment of BBV positive HCWs should be co-ordinated through a consultant occupational physician.²¹ Where a healthcare establishment's occupational health service does not have its own consultant occupational physician, arrangements should be put in place for this advice to be sought from such a consultant outside the establishment. Suitable arrangements must be in place for agency or locum staff, including dental staff, to ensure that they have access to a designated consultant occupational physician.

While the occupational physician has responsibility for occupational medical management and assessment, if a physician is not immediately available, HCWs may initially seek advice from occupational nurses. The nurse should make every effort to arrange for the HCW to see the occupational physician as soon as possible.

Occupational health services should adopt a proactive role in helping HCWs to assess if they have been at risk of BBV infection and encourage them to be tested, if appropriate. It is the responsibility of the occupational health service to ensure that new HCW who intend to perform EPPs, have the necessary clearance to do so. Occupational health services should explain the testing arrangements for health clearance and how BBV infection might affect continued performance of EPPs.

After testing, occupational health services should inform HCWs of the results of their tests and the implications for their working practice, including where appropriate any requirements for further follow up and monitoring. All infected HCWs should be given accurate and detailed advice on ways of minimising the risks of transmission in the healthcare setting and to close contacts. It is recommended that referral of infected HCWs to the appropriate physician for specialist clinical assessment (if this has not already taken place), should be made by the occupational health service, and not by self-referral.

Responsibility for the ongoing monitoring of HBV or HIV infected HCWs cleared to perform EPPs, in accordance with this guidance, rests with the consultant occupational physician working closely with the HCW's treating physician. Within this context, the

²¹ Defined as a consultant who is on the specialist register for occupational medicine (ie MFOM or FFOM qualification).

treating physician is responsible for providing the necessary regular care for the infected HCW with respect to managing their BBV infection.

As part of the process of ongoing monitoring, responsibility for maintaining the HCW's record on the UKAP-Occupational Health Monitoring Register of Blood Borne Virus Infected Healthcare Workers (UKAP-OHR) (see [Chapter 9](#)), and the assurance of data entry, lies with the consultant occupational physician. However, delegated authority may also be given to specific named individuals within a given occupational health service to undertake these roles on behalf of the consultant occupational physician.

6.2 Employers and commissioning bodies

All employers should ensure that new and existing staff (including agency and locum staff and visiting HCWs) are aware of this guidance and of the professional regulatory bodies' statements of ethical responsibilities. This may include issuing regular reminders. Commissioners may wish to stipulate this when placing service agreements with NHS organisations.

Providers using locums and agency staff are ultimately responsible for making sure that HCWs have the necessary health clearance to undertake EPP work.

6.3 Training establishments

Medical, dental, nursing and midwifery schools, colleges and universities should draw students' attention to this guidance and the relevant professional statements. Each training establishment should identify a nominated officer with whom students may discuss their concerns in confidence. In addition, all students should be appropriately trained in procedures and precautions to minimise the risk of occupational BBV transmission. All these issues should be addressed before there is clinical contact with patients. Guidance on health clearance and management of infected medical and dental students, produced jointly by the Council of Heads of Medical Schools, Public Health England (PHE), Health Protection Scotland, the Association of UK Hospitals and the Higher Education Occupational Practitioners Group, can be found [here](#)

Chapter 7: Confidentiality concerning the infected healthcare worker

There is a general duty to preserve the confidentiality of medical information and records. Breach of this duty is very damaging for the individuals concerned, and it undermines the confidence of the public and of HCWs in the assurances about confidentiality which are given to those who come forward for examination or treatment. Occupational health records are held separately from other hospital notes and can be accessed only by occupational practitioners, who are obliged ethically and professionally not to release records or information without the consent of the individual.

Every effort should be made to avoid disclosure of the infected worker's identity, or information which would allow deductive disclosure. Any unauthorised disclosure about the BBV status of an employee constitutes a breach of confidence and may lead to disciplinary action. Employers should make this known to staff to deter open speculation about the identity of an infected HCW.

The duty of confidentiality, however, is not absolute. Legally, the identity of infected individuals may be disclosed with their consent, or without consent in exceptional circumstances, where it is considered necessary for the purpose of treatment, the prevention of spread of infection or in the public interest where patients are, or may have been, at risk. Any such disclosure may need to be justified.

In balancing duty to the infected HCW and the wider duty to the public, complex ethical issues may arise. As in other areas of medical practice, a HCW disclosing information about another HCW may be required to justify their decision to do this. The need for disclosure must be carefully weighed and where there is any doubt the HCW considering such disclosure may wish to seek advice from his or her professional body.

The duties of confidentiality still apply even if the infected HCW has died, or has already been identified publicly.

Further detailed advice on managing confidentiality during patient notification exercises can be found in [Part E](#) of this document

PART C:

BLOODBORNE VIRUS HEALTH CLEARANCE

Chapter 8: Health clearance for hepatitis B, hepatitis C and HIV: New healthcare workers

Health clearance measures for new HCWs provide protection for patients from exposure in the clinical care setting to HBV, HCV and HIV. These measures are not intended to prevent those infected with BBVs from working in the NHS, but rather to restrict them from working in those clinical areas where their infection may pose a risk to patients in their care. This is consistent with restrictions imposed on the working practices of those HCWs who are known to be BBV infected.

The HCW also benefits from the health clearance arrangements personally (eg earlier diagnosis may lead to curative or life-prolonging treatment and prevention of onward transmission), and professionally (eg avoiding work activities that may pose a risk to their own health and making career choices appropriate to their infection status).

Employers will need to set up mechanisms in conjunction with their human resources and occupational health services to identify new HCWs, to ensure that the necessary health checks are carried out.

The guidance does not apply to HCWs who are already employed in the NHS, with the exception of those moving to a post requiring the performance of EPPs for the first time in their career.

This guidance is supplementary to routine occupational health checks and immunisations for other infectious diseases (eg for rubella and varicella). Guidance on health clearance for tuberculosis is not reproduced in these guidelines.

Guidance on the immunisation of HCWs is not reproduced in this document, as recommendations are continually under review by the Joint Committee on Vaccination

and Immunisation. Current advice on immunising HCWs can be found in **Chapter 12** of the UK Health Departments' guidance, Immunisation against infectious disease.²²

8.1 Categories of new healthcare workers

For the purpose of this guidance, **a new HCW is defined as an individual who has direct clinical contact with patients in the NHS or independent sector for the first time**, whether as an employee or with the employer's agreement (eg student placements, visiting fellows). **Existing HCWs who are moving to a post or training that involves EPPs for the first time in their career, are also considered as 'new'**. Returning HCWs may also be regarded as 'new', depending on what activities they have engaged in while away from the health service.

Students

Medical students

The practical skills required of medical students to obtain provisional GMC registration²³ or of pre-registration foundation house officers (Foundation Year 1) to obtain full GMC registration²⁴ do not include EPPs. Freedom from infection with BBVs is therefore not an absolute requirement for those wishing to train as doctors. This recognises that many career paths are available to doctors which do not require the performance of EPPs.

However, some commonly undertaken components of the undergraduate medical curriculum may involve students in EPPs. Additional health clearance is therefore recommended for those students who will be performing EPPs. Students found to be infectious carriers of BBVs will need to comply with occupational health supervision and guidance from the responsible head of course to ensure they do not perform EPPs until they meet the criteria set out in **Chapter 10** (HBV), **Chapter 11** (HCV) and **Chapter 12** (HIV) of this guideline.

Guidance on health clearance and management of infected medical and dental students, produced jointly by the Council of Heads of Medical Schools, Public Health England (PHE), Health Protection Scotland, the Association of UK Hospitals and the Higher Education Occupational Practitioners Group, can be found **here**

²² Department of Health. The Green Book, Immunisation of healthcare and laboratory staff, Chapter 12. Available at: www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book

²³ General Medical Council. Tomorrow's Doctors, 2009. Available at: http://www.gmc-uk.org/education/undergraduate/tomorrows_doctors.asp

²⁴ General Medical Council. The Trainee Doctor, 2011. Available at: www.gmc-uk.org/education/postgraduate/26860.asp

Nursing students

Additional health clearance is not necessary for nursing students, as performance of EPPs is not a requirement of the curriculum for preregistration student nurse training.

Dental, midwifery, and podiatric surgery students

Additional health clearance is recommended for all dental (including dental hygienists and therapists but not nurses), midwifery and podiatric surgery (but not podiatry) students before acceptance onto training courses, because EPPs are performed during training and practice of these specialties.

Emergency healthcare students

Paramedic and ambulance technician students may require EPP clearance subject to the outcome of a risk assessment see **Error! Reference source not found.**

Healthcare workers who are performing exposure prone procedures for the first time

HCWs moving into training or posts involving EPPs for the first time should also be treated as 'new', and additional health clearance is recommended. This will include, for instance, foundation house officers entering surgical or other specialties involving EPPs, qualified nurses wishing to train as midwives and post-registration nurses moving into work in operating theatres and accident and emergency for the first time.

Healthcare workers who are returning to the NHS and who may have been exposed to serious communicable diseases

The need for additional health checks for any particular HCW who is returning to work in the NHS and who may have been exposed to serious communicable diseases while away should be based on a risk assessment, and will depend on what activities they have engaged in while away from the health service. This should be carried out by the occupational health service. The timing of any tests should take account of the natural history of the infections (ie the 'window period').

Some examples of HCWs who might be considered 'returners' include those returning from research experience (including electives spent in countries of high prevalence for BBVs), voluntary service with medical charities, sabbaticals (including tours of active duty in the armed forces), exchanges, locum and agency work or periods of unemployment spent outside the UK.

Healthcare workers from locum and recruitment agencies.

Occupational health checks, to the same standard as applied to NHS employees, should form part of pre-employment checks conducted by providers of temporary staff, regardless of whether they have worked previously in the NHS. Health clearance appropriate to HCWs' duties should be verified before the individual undertakes any clinical work²⁵. While working on NHS premises, responsibility for continuing occupational health and safety needs of temporary workers lies with the NHS employer, as covered by the Health and Safety at Work Act 1974. Agencies are responsible for supplying staff that are fit for the post they are being recruited into.

Healthcare workers in the independent healthcare sector

NHS organisations that arrange for NHS patients to be treated by non-NHS hospitals or health establishments in the UK, including the independent sector, should ensure that the health clearance guidance is followed.

8.2 Standard bloodborne virus health checks for all new healthcare workers

Standard health clearance is recommended for all categories of new HCWs employed or starting training (including students) in a clinical care setting, either for the first time or returning to work in the NHS.

Standard health checks for non-EPP posts may be conducted on appointment; these should be completed before clinical duties commence.

Offer of hepatitis B immunisation: non-exposure prone procedure workers

It is recommended that all HCWs, including students, who have direct contact with blood, blood-stained body fluids or patients' tissues, are offered immunisation against hepatitis B and tests to check their response to immunisation²⁶, including investigation of non-response²⁷. Guidance on immunisation against hepatitis B, which includes information about dosage, protocols and supplies, is contained in **Chapter 18** of the UK Health Departments' publication, Immunisation against infectious disease.²⁸

Healthcare workers for whom hepatitis B vaccination is contra-indicated, who decline vaccination or who are non-responders to vaccine (ie those with anti-HBs levels of less

²⁵ Whilst it is the responsibility of the agency to clear temporary staff for EPPs, the NHS employer has the responsibility to check they have been cleared.

²⁶ To determine the immune status of HCWs who received Hep B vaccine as part of a childhood schedule, a challenge dose of HepB vaccine can be used to determine the presence of vaccine-induced immunologic memory.

²⁷ HBsAb levels of >100IU/mL do not preclude the HCW being HBsAg positive and a chronic carrier. Testing for HBsAg is good medical practice for the benefit of the HCW

²⁸ Department of Health. The Green Book, Hepatitis B, Chapter 18. Available at:

www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book

than 10 mIU/mL) should be restricted from performing EPPs unless shown to be non-infectious. Periodic re-testing may need to be considered.

Declining vaccination (whether contra-indicated or not), or non-response to vaccine, will not affect the employment or training of HCWs who will **not** perform EPPs.

Offer of testing for hepatitis C: non-exposure prone procedure workers

All HCWs who are new to the NHS should be offered a pre-test discussion and an HCV antibody test (and if positive, an HCV RNA test), in the context of their professional responsibilities. During this discussion, they should be given a copy of the guidance from their professional regulatory body, if relevant. It would be helpful to remind them of the ways in which they might have been exposed to HCV.

Being HCV positive, or declining a test for HCV, will not affect the employment or training of HCWs who will not perform EPPs.

Offer of testing for HIV: non-exposure prone procedure workers

All HCWs who are new to the NHS should be offered an HIV test with appropriate pre-test discussion, including reference to their professional responsibilities. During this discussion, they should be given a copy of the guidance from their professional regulatory body, if relevant. It would be helpful to remind them of the ways in which they may have been exposed to HIV.

Declining a test for HIV, or being infected with HIV will not affect the employment or training of HCWs who will not perform EPPs. Occupational physicians should, however, consider the impact of HIV infection on the individual's resistance to infection when advising on suitability for particular posts.

8.3 Additional bloodborne virus health checks (testing for HBV, HCV and HIV) for new healthcare workers who will perform exposure prone procedures, and for existing healthcare workers who are new to exposure prone procedures

Additional health clearance is required for HCWs who will perform EPPs. It will obviously be to the advantage of HCWs to establish their BBV status early as they make their career choices.

HCWs have the right to decline to be tested for HIV, HBV and HCV, in which case, they will not be cleared for EPP work.

The time for testing may vary depending upon the particular chosen career, but the following are considered appropriate:

- junior doctors entering all surgical specialties, including obstetrics and gynaecology, should be tested before their first foundation house officer post (this will include those posts in accident & emergency where doctors may be called upon to perform EPPs)
- prospective dental students, hygienists and therapists should be tested before entry into dental school, as EPPs form an integral part of their training and in the work of dentists
- prospective midwifery students should be tested before embarking on midwifery courses
- nurses should be tested before they move to specialised areas of work where they may be required to perform EPPs, eg operating theatre and accident & emergency nursing
- ambulance staff should be tested before they embark on training as paramedics or technicians
- podiatrists should be tested before they commence training in podiatric surgery

This list covers the major specialties but is not intended to be exhaustive. It is not possible to provide a definitive list of types or specialties of HCWs who perform EPPs, because individual working practices may vary between clinical settings and between workers. Examples of EPPs are available on the UKAP webpage [here](#)

It is not currently considered necessary for medical students to be tested for HCV or HIV routinely, as those embarking on careers that involve EPPs will be tested at foundation level.

Hepatitis B

HCWs who intend to perform EPPs should:

- be tested for hepatitis B surface antigen (HBsAg) first, which indicates current HBV infection.
- if negative for HBsAg, be offered vaccination (unless they have already received a course of vaccine) and have their response checked (anti-HBs)²⁹. Where there is evidence that a HCW, who is known to have had previous HBV infection which has cleared, now has natural immunity, immunisation is not necessary, but the advice of a local virologist or clinical microbiologist should be sought. Healthcare

²⁹ To determine the immune status of HCWs who received Hep B vaccine as part of a childhood schedule, a challenge dose of HepB vaccine can be used to determine the presence of vaccine-induced immunologic memory.

workers for whom hepatitis B vaccination is contra-indicated, who decline vaccination or who are non-responders to vaccine (ie those with anti-HBs levels of less than 10 mIU/mL) should be restricted from performing EPPs unless shown to be non-infectious. They should be tested annually for HBsAg.

- if positive for HBsAg, be tested for hepatitis B e-markers. If they are e-antigen (HBeAg) positive, they should **not** be allowed to perform EPPs. If they are HBeAg negative, they should have their hepatitis B viral load (HBV DNA) tested. If the HBV DNA level is below 200 IU/mL, as measured by any Clinical Pathology Accreditation (UK) Limited or United Kingdom Accreditation Service accredited virology laboratory in the UK³⁰, they should be allowed to perform EPPs. If a HCW's viral load test has been performed outside the UK, advice should be sought from UKAP.

Restrictions on the working practices of HBV infected HCWs who have an HBV DNA level at or below the WHO standard can be lifted subject to meeting the criteria set out in [Chapter 9](#).

Hepatitis C

HCWs who intend to perform EPPs should be tested for HCV antibody. Those who are positive should be tested for HCV RNA to detect the presence of current infection. Testing for HCV virus RNA should be carried out by any Clinical Pathology Accreditation (UK) Limited accredited specialist virology laboratory that are experienced in performing such tests. The assays used should have a minimum sensitivity of 50 IU/mL.

HCWs found to be carrying the virus (ie who are HCV RNA positive) should be restricted from performing EPPs, or commencing training for careers that rely upon performing EPPs, unless they have responded successfully to treatment (see [Chapter 11](#)).

HCV infected HCWs who have been treated with antiviral therapy and who remain HCV RNA negative for at least 6 months after cessation of treatment should be permitted to return to performing EPPs at that time. As a further check, they should be shown still to be HCV RNA negative 6 months after. Provided that these criteria are met, a return to EPPs would be a local decision and would not need to be referred to UKAP, which is available to provide advice if required.

³⁰ Viral load testing can be undertaken by any Clinical Pathology Accreditation (UK) Limited or United Kingdom Accreditation Service accredited virology laboratory in the United Kingdom, provided a CE marked assay, which is standardised to the WHO International Standard for Hepatitis B Virus Nucleic Acid Amplification Techniques, is used and HBV DNA levels are reported in international units per millilitre (IU/mL)

HIV

HCWs who intend to perform EPPs should be tested for HIV infection.. The presence of HIV antibody should not automatically restrict HCWs from performing EPPs. Confirmation of HIV infection should be undertaken, and plasma viral load measured³¹. HIV infected HCWs with a plasma viral load >200 copies/mL should be restricted from performing EPPs, or commencing training for careers that rely upon performing EPPs. If a HCW's viral load test has been performed outside the UK, advice should be sought from UKAP.

Guidance on the management of HIV infected HCWs, including the criteria to be met before EPP activities may recommence can be found in [Chapter 12](#).

7.4 Redeployment and retraining

Employers should assure BBV positive HCWs that their status and rights as employees will be safeguarded so far as practicable. Where necessary, employers should make every effort to arrange suitable alternative work and retraining opportunities, or where appropriate, early retirement, in accordance with good general principles of occupational health practice. With the opportunity for HIV and HBV infected HCWs to recommence EPPs once the criteria in this guidance have been met, it is anticipated that the number of infected HCWs requiring retraining will be small. There may, however, be a requirement for short term redeployment while the HCW commences antiviral treatment and until a point that their infection is cleared (for HCV), or their viral load is reduced below the level required to perform EPPs.

³¹ Vaccine Induced Sero-Reactivity (VISR) may be encountered when testing HCWs who have participated in HIV vaccine trials. Documentary evidence of the HCWs participation in a vaccine trial, with evidence of negative serum HIV p24 antigen and viral load (RNA/DNA) is sufficient to confirm the HCWs HIV negative infectious status. Detecting HIV antibody as a consequence of VISR should not prevent HCWs performing EPPs.

PART D:

MANAGEMENT OF BLOODBORNE VIRUS INFECTED HEALTHCARE WORKERS

Chapter 9: Occupational health monitoring of bloodborne virus infected healthcare workers

The model for allowing HBV or HIV infected HCW to undertake EPPs whilst on therapy relies on continuing care and regular viral load monitoring by their treating physician and consultant occupational physicians. Effective monitoring requires close working between these two parties to ensure that the policy is being adhered to appropriately, thus minimising the risk of transmission.

Where a healthcare establishment's occupational health service does not have its own consultant occupational physician, arrangements should be put in place for this advice to be sought from such a consultant outside the establishment. Suitable arrangements must be in place for agency or locum staff, including dental staff, to ensure that they have a designated consultant occupational physician who is responsible for their monitoring, in accordance with this guidance.

All HBV or HIV infected HCWs who perform EPPs should have their viral load measured regularly (see [Chapter 10](#) and [Chapter 12](#) for frequency of testing), using a blood IVS.³² Blood testing for this purpose will usually be carried out by the occupational health service, but where this would give rise to duplication of testing, local arrangements should be made between the treating physician and the occupational

³² An IVS is defined by Association of NHS Occupational Physicians (ANHOPS) and the Association of NHS Occupational Health Nurses (ANHONS) as meeting the following criteria (a) the healthcare worker should show a proof of identity with a photograph – Trust identity badge, new driver's licence, some credit cards, passport or national identity card – when the sample is taken; (b) the sample of blood should be taken in the occupational health department; (c) samples should be delivered to the laboratory in the usual manner, not transported by the healthcare worker; (d) when results are received from the laboratory, the clinical notes should be checked for a record that the sample was sent by the occupational health department, at the relevant time.

health service to ensure that blood drawn from infected HCWs for viral load measurements in GUM or infectious diseases settings follows the principles of an IVS.

To support and monitor implementation of the policy and to ensure patient safety, **all** HBV or HIV infected HCWs including locum staff, who wish to perform EPPs (and for HBV infected HCWs clinical duties in renal units), and who meet the criteria for clearance (see **Chapter 10** and **Chapter 12**), must be monitored locally, and registered on the UKAP-OHR, a central confidential register, managed by PHE (on behalf of Health Protection Scotland, Public Health Wales, and the Public Health Agency for Northern Ireland) and overseen by UKAP. Each HCW must be registered by their designated consultant occupational physician. The ongoing viral load monitoring data will be updated by occupational health providers on a regular basis. Action taken as a result of an increase in viral load should be reported using the register to record that restrictions on practice are put in place appropriately and, where necessary, risk assessments and patient notification exercises are carried out.

The UKAP-OHR is a secure and confidential system. Access to the individual records of the HCWs on the register is limited to the designated consultant occupational physicians responsible for the care, monitoring, management and EPP clearance of the HCW. Delegated authority may also be given to specific named individuals within a given occupational health service to undertake these roles on behalf of the consultant occupational physician. Limited access will also be given to a small number of individuals who managing the register on behalf of UKAP.

Whilst it is important that UKAP should be called upon for advice on the application of the policy as needed, decisions to clear individual HCWs for EPP work will ultimately remain the responsibility of the consultant occupational physician in consultation with the treating physician.

The roles and responsibilities of the respective individuals involved in the monitoring process for infected HCWs performing EPPs are set out below:

A. Healthcare worker

The healthcare worker must be under the care of a designated consultant occupational physician. They must accept that it is a condition of undertaking EPPs that they consent to ongoing monitoring while they continue to practise EPPs, including:

- i. the registration of their details and monitoring data on the UKAP-OHR
- ii. the release of monitoring information to the consultant occupational physician and the treating physician
- iii. to attend the occupational health service (or other appropriate service) when arranged and to provide an IVS for viral load monitoring at the appointed times

- iv. to seek advice if change in health condition may affect their fitness to practise or impair their health
- v. to notify occupational health when they are changing their practice or their place of employment
- vi. to notify their treating physician if there has been an interruption to therapy or sub-optimal adherence

Thus, HCWs must agree that by seeking to undertake EPPs, they are giving implied consent to i and ii, and they are undertaking to satisfy iii – vi. It is recommended that the OH department puts in writing to the HCW, the requirements they must meet in order to continue practicing EPPs.

If the HCW is moving to a new employer, they should liaise with their existing occupational health physician to ensure the transfer / sharing of necessary information about the monitoring of their viral load for ongoing EPP clearance to the occupational health service of their new employer..

B. Consultant occupational physician

The consultant occupational physician is responsible for the monitoring of the infected HCW, including:

- i. ensuring that appointments are available for testing in accordance with the testing protocol, and timings are followed
- ii. reacting promptly to any alerts received via the UKAP-OHR
- iii. taking appropriate action when those who should present for tests do not do so, eg notifying the relevant manager of the HCW's non-attendance and restriction from EPP practice
- iv. ensuring that IVS samples are collected and tested and results obtained in a timely manner
- v. interpreting the viral load results in relation to clearance to perform EPPs
- vi. notifying the HCW that they are fit to perform EPPs, and thereafter their manager of their fitness to practice
- vii. ensuring that the UKAP-OHR is updated in a timely manner
- viii. advising the employer, on an ongoing basis, whether the HCW is fit to perform EPPs
- ix. timely liaison with treating physicians when required

The Occupational Health physician should inform UKAP-OHR of any change of employer and provide contact details for the new occupational health service who will be monitoring the HCW's infection.

C. Treating physician

The treating physician is responsible for:

- i. the clinical management and support of the infected HCW
- ii. advising and maintaining timely communications with the consultant occupational physician responsible for monitoring the infected HCW

As a point of good practice, all HBV or HIV infected HCWs cleared to perform EPPs should maintain a record of the procedures performed. In the event of an HCW having an increase in viral load, such a log book would provide a quick and confidential way to identify patients who may have been at increased risk of infection from the HCW.

D. Occupational Health Register

The UKAP-OHR team will register HCWs on the database and provide regular reports on the monitoring status of HCWs under their care. The OHR team is not responsible for the clearance of HCWs.

Chapter 10: Hepatitis B virus

10.1 Risk of healthcare transmission of hepatitis B from healthcare worker to patient

The high level of virus found during the acute phase of HBV infection and in the HBeAg carrier state is such that very small volumes of blood can transmit infection.

Transmission of HBV to a susceptible individual from an infected source following a single hollowbore needlestick injury has been shown to be around 30-62% where the inoculation source is HBeAg positive.

HCWs who are HBsAg positive and HBeAg negative are infectious but generally of lower infectivity, with the same injury associated with a risk of transmission of between 6-37%. Individuals infected with pre-core mutant viruses, who have a high viral load in the absence of the e-antigen are associated with a high risk of transmission.

As at the end of 2015, there had been nine episodes of documented transmission of HBV from infected surgeons to patients in the UK since 1991, when HBV vaccination became widespread. There has also been transmission of HBV from a doctor to two patients which did not involve EPPs. Worldwide, since 1970 there have been more than 40 clusters where over 400 patients contracted hepatitis B from a HCW.^{33,34,35,36,37}

10.2 Hepatitis B testing of new healthcare workers

All new HCWs employed or starting training (including students) in a clinical care setting, either for the first time or returning to work in the NHS, who will have direct contact with blood, blood-stained body fluids or patients' tissues, should be offered immunisation against HBV and have their response to immunisation (anti-HBs) checked, including investigation of non-response³⁸.

³³ Smellie MK, Carman WF, Elder S, Walker D, Lobidel D, Hardie R, et al. Hospital transmission of hepatitis B virus in the absence of exposure prone procedures. *Epidemiol Infect.* 2006;134(2):259-63.

³⁴ Health Service Circular 2000/ 020 Hepatitis B Infected Health Care Workers. Department of Health. 23 June 2000.

³⁵ Health Service Circular 2000/ 020 Hepatitis B Infected Health Care Workers: Guidance on the Implementation of Health Service Circular 2000/020. Department of Health. 2000.

³⁶ Gunson RN, Shouval D, Roggendorf M, Zaaijer H, Nicholas H, Holzmann H, et al. Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections in health care workers (HCWs): guidelines for prevention of transmission of HBV and HCV from HCW to patients. *J Clin Virol.* 2003;27:213-30.

³⁷ Lewis JD, Enfield, Sifri CD. Hepatitis B in healthcare workers: Transmission events and guidance for management. *World J Hepatol* 2015;7:488-97.

³⁸ HBsAb levels of >100IU/mL do not preclude the HCW being HBsAg positive and a chronic carrier. Testing for HBsAg is good medical practice for the benefit of the HCW

New HCWs who will perform EPPs or clinical duties in renal units should:

- be tested for HBsAg first (even if they have already received a course of HBV vaccine) with appropriate pre-test discussion, including reference to their professional responsibilities, and
- if negative for HBsAg be offered vaccination (unless they have already received a course of vaccine) and have their response checked to demonstrate they are immune

HBsAg positive HCWs should be tested for HBV e-markers, and if HBeAg negative, for HBV DNA levels.

Healthcare workers for whom hepatitis B vaccination is contra-indicated, who decline vaccination or who are non-responders to vaccine (ie those with anti-HBs levels of less than 10 mIU/mL) should be restricted from performing EPPs or clinical duties in renal units, unless shown to be non-infectious. They should be tested annually for HBsAg. A positive HBsAg test, or declining a vaccination for HBV, should not affect the employment or training of HCWs who will not perform EPPs.

10.3 Hepatitis B testing of existing healthcare workers

Practising HCWs who undertake EPPs or who perform clinical duties in renal units are under a professional duty to seek medical advice on the need to be tested if they are aware they may have been exposed to HBV infection, occupationally or otherwise and if found positive, to obtain and follow appropriate clinical and occupational health advice.

10.4 Management of hepatitis B infected healthcare workers

On the grounds of patient safety, HCWs who perform EPPs or undertake clinical duties in renal units will not be allowed to practice if they are:

- a. HBeAg positive, or
- b. HBeAg negative with a HBV DNA level greater than 200 IU/mL³⁹ regardless of their treatment status, or
- c. who have a pre-treatment viral load above 20,000IU/mL⁴⁰

³⁹ The cut off used historically (10^3 gEq/mL) to monitor HBV infected HCWs who have been cleared to perform EPPs, is equivalent to 200 IU/mL, as determined using a CE marked assay, which is standardised to the WHO International Standard for Hepatitis B Virus Nucleic Acid Amplification Techniques.

⁴⁰ Viral loads in individuals with baselines levels well in excess of the 200 IU/mL may be suppressed to below the cut off by treatment. However, the emergence of resistant strains in such cases could result in a return to levels where transmissions of infection are known to have occurred.

All HBV infected HCWs who are HBsAg positive and HBeAg negative should not be restricted from performing EPPs or clinical duties in renal units if:

- a. their HBV DNA viral load is less than 200 IU/mL (either from natural suppression, or 12 months after stopping a course of antiviral therapy)⁴¹, and
- b. they are monitored every 12 calendar months by their consultant occupational physician

HCWs who are HBsAg positive and HBeAg negative who have pre-treatment HBV DNA levels between 200IU/mL and 20,000 IU/mL, can perform EPPs or clinical duties in renal units if:

- a. they are on continuous antiviral therapy, and
- b. their viral load is suppressed to below 200IU/mL
- c. their HBV DNA levels are monitored every 12 weeks by their consultant occupational physician

Initial health clearance for HBsAg positive and HBeAg negative HCWs who wish to perform EPPs or clinical duties in renal units

For HCWs not on therapy, two IVS taken no less than 4 weeks apart with both showing a viral load result below 200IU/mL, is required for giving health clearance and allowing the HCW to commence EPP activities.

HBsAg positive and HBeAg negative HCWs who have pre-treatment HBV DNA levels between 200 and 20,000 IU/mL **and** are on continuous antiviral therapy could commence EPPs when their HBV DNA levels have been at or below 200 IU / mL, on two consecutive tests performed on IVS no less than four weeks apart.⁴²

The decision to clear individual HCWs to undertake EPPs, or clinical duties in renal units is the responsibility of the consultant occupational physician in consultation with the treating physicians. UKAP may be consulted on the application of the policy, as needed.

⁴¹ Those who have undergone a course of such treatment need to show that they have a viral load that does not exceed 200 IU/mL one year after cessation of treatment before a return to unrestricted working practices can be considered. Any infected health care worker returning to unrestricted working practices would be subject of the same 12 monthly re-testing as recommended for other unrestricted hepatitis B infected health care workers without the e-antigen.

⁴² If HCW's viral load test has been performed outside UK, advice should be sought from UKAP

Viral load monitoring and ongoing clearance for HBsAg positive and HBeAg negative HCWs who wish to perform EPPs or clinical duties in renal units

HBV infected HCWs who are cleared to perform EPPs are subject to regular viral load testing. HCWs who are HBeAg negative and have a HBV DNA level below 200 IU/mL

- either from natural suppression, or 12 months after stopping a course of antiviral therapy, should be tested annually⁴³
- whilst those on continuous antiviral therapy, should be monitored every 12 weeks⁴⁴

The monitoring period should be taken from the date the previous IVS was drawn, and **not** from the date the result was received.

If a HCW's plasma viral load is above 400 IU/mL, they should be restricted immediately from carrying out EPPs until their viral load returns to being stably below 200 IU/mL (see [Resuming EPPs](#)). If a HCW's viral load lies between 200 IU/mL and 400IU/mL, further tests should be performed at a designated laboratory on the same sample⁴⁵ and a further specimen collected no less than one week apart. If the designated laboratory confirms that the viral load is above the cut-off to practice EPPs, the HCW should be restricted from carrying out EPPs until their viral load returns to being stably below the 200 IU/mL (see [Resuming EPPs](#)). The significance of any increase in plasma viral load above the cut-off, identified through routine monitoring, should be assessed jointly by the consultant occupational physician and treating physician with input from appropriate local experts (eg consultant virologist or microbiologist).

The table below sets out the expected course of action for HBV DNA level test results below and above the level for EPP clearance.

⁴³ Annual viral load testing can be performed no earlier than 50, and no later than 54 complete calendar weeks after the date of the preceding specimen taken for occupational health monitoring purposes.

⁴⁴ Quarterly viral load testing can be performed no earlier than 10, and no later than 14 complete calendar weeks after the date of the preceding specimen taken for occupational health monitoring purposes

⁴⁵ HepB viral load confirmation by the designated laboratory requires two specimens taken no less than one week apart. OH services should ensure that a sufficient volume of blood is obtained for viral load monitoring, that would enable testing at both the local and designated laboratory (if required)

HBV DNA Level	Action
<60 IU/mL	HCW can perform EPPs. Retest in 12 weeks or 12 months depending on antiviral treatment status
60-200 IU/mL	A case-by-case approach based on clinical judgement would be taken which may result in no action (as above) or a second test should be done 10 days later to verify the first result. Further action would be informed by the test result.
> 200 IU/mL but <400 IU/mL	<p>A second test should automatically be done on the same (if sufficient residual volume) and a further specimen collected no less than one week apart and sent to the designated laboratory⁴⁶ to verify the first result. If the designated laboratory confirms that the viral load is above the cut off, the HCW will be unable to perform EPPs until their viral load returns to being stably below 200 IU/mL.</p> <p>A full risk assessment⁴⁷ should be triggered and include assessing the significance of the increase in viral load. A PNE may be indicated.</p>
400 IU/mL or above	<p>The HCW should cease conducting EPPs immediately. The HCW will remain unable to perform EPPs until their viral load returns to being stably below 200 IU/mL.</p> <p>A full risk assessment should be triggered and include assessing the significance of the increase in viral load. A PNE may be indicated.</p>

Failure to attend or refusal to test

All HCWs performing EPPs should be advised by their consultant occupational physician and their treating physician of the importance of monitoring of their viral load and the implications of not doing so.

⁴⁶ The two designated laboratories for HBV testing are (i) the West of Scotland Specialist Virology Centre, Glasgow Royal Infirmary, Glasgow (<http://www.nhsggc.org.uk/about-us/professional-support-sites/west-of-scotland-specialist-virology-centre/>). During working hours, the duty clinician can be contacted on 0141 201 8722, and (ii) the Microbiology Department, Heartlands Hospital, Birmingham (<http://www.heftpathology.com/Microbiology/Microbiology-Home/>). During working hours, the duty clinician can be contacted on: 0121 424 2000

⁴⁷ Guidance on performing a local risk assessment can be found in [Chapter 14](#)

Where a HCW does not attend for their appointments, or attends but refuses to have their viral load tested, it is recommended that the occupational health physician should inform the worker's employer that they are no longer cleared to perform EPPs, until it has been established that the HCW has an up-to-date viral load which does not exceed the cut-off.

Resuming exposure prone procedures

Resumption of EPP activities following a period of interruption (for whatever reason) requires demonstration of consistent viral load suppression to very low or undetectable levels, that is at least two IVS viral loads below 200 IU/mL, no less than 4 weeks apart, regardless of treatment status.

10.5 Occupational health monitoring arrangements for hepatitis B infected healthcare workers

The model for allowing HCWs who have tested positive for HBV to undertake EPPs relies on continuing care and regular viral load monitoring by both their treating physician and consultant occupational physicians. Effective monitoring requires close working between these two parties to ensure that the policy is being adhered to appropriately, thus minimising the risk of transmission.

All HBsAg positive and HBeAg negative HCWs who meet the criteria for performing EPPs or clinical duties in renal units should have their viral load measured every 12 weeks or 12 calendar months (depending on their treatment status) using a blood IVS.⁴⁸

Whilst it is important that UKAP should be called upon for advice on the application of the policy as needed, decisions to clear individual HCWs for EPP work or clinical duties in renal units, will ultimately remain the responsibility of the treating and occupational health physicians.

The roles and responsibilities of the respective individuals involved in the monitoring process for HBV infected HCWs performing EPPs are set out in [Chapter 9](#).

Testing arrangements

⁴⁸ An IVS is defined by Association of NHS Occupational Physicians (ANHOPS) and the Association of NHS Occupational Health Nurses (ANHONS) as meeting the following criteria (a) the healthcare worker should show a proof of identity with a photograph – Trust identity badge, new driver's licence, some credit cards, passport or national identity card – when the sample is taken; (b) the sample of blood should be taken in the occupational health department; (c) samples should be delivered to the laboratory in the usual manner, not transported by the healthcare worker; (d) when results are received from the laboratory, the clinical notes should be checked for a record that the sample was sent by the occupational health department, at the relevant time.

HBV DNA testing of HBV infected HCWs without the e-antigen must be undertaken by a Clinical Pathology Accreditation (UK) Limited or United Kingdom Accreditation Service accredited virology laboratory in the UK, who must report results in IU/mL.⁴⁹⁵⁰ A CE marked assay must be used, which is standardised to the WHO International Standard for Hepatitis B Virus Nucleic Acid Amplification Techniques.

All samples from HBV infected HCWs without the e-antigen sent for HBV DNA for clearance purposes should be accompanied by a request form which contains as a minimum:

- Forename
- Surname
- Date of Birth
- Purpose of testing “clearance for EPP”
- Information on whether the HCW is, or is not, taking antiviral therapy

Where coding is used, the occupational health physician should liaise with the lead consultant microbiologist/virologist in the local laboratory to ensure a consistent coding system unique to that laboratory is used, and that serial samples from the same HCW are identifiable as such.

Breaks in monitoring

HBV infected HCWs who take a career break from performing EPPs or clinical duties in renal units, may wish to continue monitoring during this period to facilitate a return to EPPs or clinical activities. Individuals with a break in their monitoring record must meet the criteria for initial clearance before returning to performing EPPs or clinical duties in renal units.

Non-exposure prone procedure hepatitis B infected healthcare workers

HBV infected HCWs who do not perform EPP or provide clinical care in renal units, must remain under regular medical and occupational health supervision in accordance with good practice. They should follow appropriate occupational health advice, especially if their circumstances change.

⁴⁹ The turnaround time (TAT) for an HBV viral load test is subject to local agreement and will vary between laboratories. Occupational health physicians should consider the TAT of their local laboratory when scheduling appointments for occupational health monitoring to ensure viral load results are available no later than 14 (for those on treatment) or 54 (for those not on treatment) complete calendar weeks after the date of the preceding specimen taken for occupational health monitoring purposes.

⁵⁰ If the HCW's viral load test has been performed outside the UK, advice should be sought from UKAP

10.6 Treatment issues

It is for the HCW to decide, in collaboration with their treating physician, whether they wish to take antiviral therapy for occupational health reasons when it is not clinically indicated, taking account of possible advantages and disadvantages.

Breakthrough infection, with increases in serum HBV DNA and in serum alanine aminotransferase (ALT) levels can be associated with the emergence of resistant virus. With successful oral antiviral treatment the rate of viral replication in HCWs should be suppressed to levels where the risk of emergence of drug resistant strains is likely to be low. Early detection of the emergence of resistance through the quarterly monitoring can be achieved by using sensitive HBV DNA assays, as is recommended here, allowing consideration of an early change in antiviral therapy before patients have been put at appreciable risk.

If breakthrough infections occur due to the development of resistant strains, and HBV DNA levels rise above 200 IU/mL (as verified by a designated laboratory), then it is recommended that the HCW be restricted from performing EPPs or clinical duties in renal units until such time as they have been re-stabilised on different oral antiviral drugs. This would be demonstrated by HBV DNA levels of less than 200 IU/mL on two consecutive tests performed no less than 4 weeks apart .

HCWs should be advised by their treating physician of the importance of notifying them of missed doses, drug interactions, or other factors that might influence their viral load, as soon as is practicable and before further EPPs are performed.

It is recommended that if a HCW stops antiviral treatment for any reason, they should immediately cease to perform EPPs or clinical duties in renal units and seek the advice of their treating physician if this has not already been obtained. If the HBV DNA levels remain below 200 IU/mL, a year after cessation of treatment, it may be appropriate for the employer to permit a return to EPPs at that time, subject to a future test six calendar months later and annual testing thereafter as is recommended in these guidelines.

10.7 Patient notification exercises

It is recommended that the finding, at a 12 weekly or annual (12 calendar months) test, that an infected HCW's HBV DNA level has risen above the WHO standard (as verified by the designated laboratory), the cut-off for performing EPPs, would not, in itself, be an indication to trace, notify and offer HBV testing to patients treated by the HCW. The need for patient notification should be determined on a case-by-case basis taking into

consideration the significance of the “blip”, in line with the principles in existing guidance and UKAP should be consulted for advice (see **Part G** for contact details).

10.8 Management of accidental exposure

There may be occasions when a patient is accidentally exposed to the blood of an HBV positive HCW in circumstances which may or may not involve EPPs. HCWs should be advised of the action to take in the event of them experiencing an injury during a procedure.

The risk of transmission of BBV infection is directly related to the concentration of the virus in the blood of the source at the time of exposure. An exposure to the blood or body fluids of a HCW with HBV DNA levels below the cut-off carries a very small risk of HBV transmission.

In managing an incident in which a patient has been exposed to the blood of an HBV infected HCW who has been cleared for clinical activities, the usual protocol for an occupational exposure should be followed. The HCW should report the incident to the clinical supervisor, line manager or other person responsible according to local policies; inform the occupational health service, infection control lead or other nominated person; and inform their treating physician.

Due to the safety profile of the HBV vaccine, and infectivity of HBV, a low threshold for initiating HBV vaccination in the recipient is recommended. Post exposure, HBV vaccine is highly effective at preventing infection, provided that the vaccine is administered ideally within 48 hours, but can be considered up to seven days post exposure. An accelerated course of HBV vaccination should be offered to all patients who have had a significant exposure unless they are already immune due to vaccination or past infection. A booster dose should be considered if the patient has previously been immunised.

Specific hepatitis B immunoglobulin (HBIG) provides passive immunity and can give immediate but temporary protection after accidental inoculation or contamination with HBV infected blood. HBIG is given concurrently with hepatitis B vaccine and should be offered to non-immune patients, or to known non-responders to the vaccine, who have had a significant exposure to an HBV positive HCW. HBIG should be given as soon as possible, ideally within 48 hours, although it should still be considered up to seven days after exposure. Full guidance on post exposure prophylaxis for HBV is contained in **Chapter 18** of the UK Health Departments’ guidance, Immunisation against infectious disease.⁵¹

⁵¹ Department of Health. The Green Book, Hepatitis B, Chapter 18. Available at: www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book

Chapter 11: Hepatitis C Virus

11.1 Risk of healthcare transmission of hepatitis C from healthcare worker to patient

The first reported incident of HCV transmission from a HCW to patient in the UK was in 1994 in which a HCW infected with hepatitis C transmitted infection to a single patient.⁵² As at the end of 2015, there had been eleven incidents of HCV infected HCWs transmitting the virus to 28 patients in the UK. With the exception of two, all HCWs were surgeons and all but three of these transmissions have been in the most invasive category 3 exposure prone procedure. The three exceptions occurred in non-EPPs, one involving a repair of a paraumbilical hernia, one from a midwife to a mother in the post natal ward and the third from an anaesthetist to a patient; the route of transmission in these cases has never been defined.^{53,54,55}

Six documented international cases involving surgeons have also been described in the literature, resulting in the acquisition of HCV in 23 patients.^{56,57} In addition there have been three cases involving anaesthesiology HCWs who transmitted HCV to nine patients, with two of these HCWs having initially acquired their infection from a patient.^{58,59,60}

Recent reviews have highlighted the issue of substance misuse by HCWs, resulting in the transmission of HCV to large numbers of patients. In these cases the HCWs were addicted to injectable anaesthetic opioids and in some cases it was established that the HCW would partly inject themselves with the opioid before injecting the patients, resulting in subsequent transmission of the virus.^{46, 61}

⁵² Duckworth GJ, Heptonstall J and Aitken C for the Incident Control Team and Others. Transmission of hepatitis C virus from a surgeon to a patient. *Commun Dis Public Health*. 1999;2:188-92.

⁵³ Public Health England. Personal communication. 2015.

⁵⁴ Muir D, Chow Y, Tedder R, Smith D, Harrison J, Holmes A. Transmission of hepatitis C from a midwife to a patient through non-exposure prone procedures. *J Med Virol*. 2014;86(2):235-40.

⁵⁵ Mawdsley J, Teo CG, Kyi M, Anderson M. Anaesthetist to patient transmission of hepatitis C virus associated with non exposure-prone procedures. *J Med Virol*. 2005;75(3):399-401.

⁵⁶ Hatia RI, Dimitrova Z, Skums P, Teo EY, Teo CG. Nosocomial hepatitis C virus transmission from tampering with injectable anesthetic opioids. *Hepatology*. 2015 Mar 22. doi: 10.1002/hep.27800. [Epub ahead of print]

⁵⁷ Cardell K, Widell A, Frydén A, Akerlind B, Månsson AS, Franzén S, Lymer UB, Isaksson B. Nosocomial hepatitis C in a thoracic surgery unit; retrospective findings generating a prospective study. *J Hosp Infect*. 2008;68(4):322-8.

⁵⁸ Cody SH, Nainan OV, Garfein RS, Meyers H, Bell BP, Shapiro CN, et al. Hepatitis C virus transmission from an anesthesiologist to a patient. *Arch Intern Med*. 2002;162:345-50.

⁵⁹ Ross RS, Viazov S, Gross T, Hofmann F, Seipp H-M, Roggendorf M. Transmission of hepatitis C virus from a patient to an anesthesiology assistant to five patients. *N Engl J Med*. 2000;343:1851-4.

⁶⁰ Stark K, Hänel M, Berg T, Schreier E. Nosocomial transmission of hepatitis C virus from an anesthesiologist to three patients--epidemiologic and molecular evidence. *Arch Virol*. 2006;151(5):1025-30.

⁶¹ Schaefer MK, Perz JF. Outbreaks of infections associated with drug diversion by US health care personnel. *Mayo Clin Proc*. 2014;89(7):878-87.

11.2 Hepatitis C testing of new healthcare worker

All new HCWs employed or starting training (including students) in a clinical care setting, either for the first time or returning to work in the NHS should undergo standard health checks which will include being offered an HCV antibody test. HCWs who will perform, or intend to embark upon careers that rely upon the performance of, EPPs should be tested for HCV antibody. HCWs have the right to decline testing, in which case they will not be cleared to perform EPPs.

Appropriate pre-test discussion should include reference to their professional responsibilities in relation to HCV, and a reminder of the ways in which they may have been exposed to HCV (see [Chapter 8](#)).

Those who are antibody positive should be tested for HCV RNA to detect the presence of current infection. Testing for HCV RNA should be carried out by any Clinical Pathology Accreditation (UK) Limited accredited specialist virology laboratory that are experienced in performing such tests. The assays used should have a minimum sensitivity of 50 IU/mL.

Those found to be carrying the virus (ie who are HCV RNA positive) should be restricted from performing EPPs, or commencing training for careers that rely upon performing EPPs, unless they have responded successfully to treatment.

Being HCV RNA positive, or declining a test for HCV, will not affect the employment or training of HCWs who will not perform EPPs.

11.3 Hepatitis C testing of existing healthcare workers

The AGH has assessed that the risk of transmission of HCV from a HCW of unknown HCV status during EPPs is low. It does not therefore advise that all HCWs doing EPPs should be routinely tested for HCV. However, it has recommended the following precautionary measures to reduce the risk of infection to patients.

Healthcare workers who know that they have been infected with hepatitis C and who carry out exposure prone procedures

HCWs who know that they have been infected with HCV (ie who have antibodies to HCV) and who carry out EPPs, should be tested for the HCV RNA. Those found to be carrying the virus (ie who are HCV RNA positive) should be restricted from performing EPPs in future, unless they have responded successfully to treatment. HCWs who have

antibodies to the HCV and are HCV RNA negative should be allowed to continue performing EPPs.

HCWs who perform EPPs and who may have been exposed to hepatitis C infection

Practising HCWs, who undertake EPPs are under a professional duty to promptly seek and follow confidential professional advice on whether they should be tested for HCV, as soon as they are aware they may have been exposed to HCV infection, occupationally or otherwise (eg if they meet any of the exposure criteria in [Chapter 8](#)). Testing should be for antibodies to HCV, and if positive, for HCV virus RNA. HCWs should take account of their regulatory bodies' statements on professional responsibilities in relation to communicable disease.

11.4 Management of hepatitis C infected healthcare workers

HCWs who have antibodies to the HCV and are HCV RNA negative should be allowed to continue performing EPPs.

HCWs who are found to be carrying the virus (ie who are HCV RNA positive), should be restricted from carrying out EPPs.

HCV infected HCWs who have been treated with antiviral therapy and who remain HCV RNA negative for at least 6 calendar months after cessation of treatment can return to performing EPPs at that time. As a further check, they should be shown still to be HCV RNA negative 6 calendar months later. Provided that these criteria are met, a return to EPPs would be a local decision and would not need to be referred to UKAP. However, UKAP is available to provide advice if required.

11.5 Monitoring arrangements

There are no requirements for HCV RNA positive HCWs to be monitored by occupational health physicians.

11.6 Non-exposure prone procedure hepatitis C infected healthcare workers

HCWs who do not perform EPPs but who continue to provide clinical care to patients, must remain under regular medical and occupational health supervision in accordance with good practice. They should follow appropriate occupational health advice, especially if their circumstances change.

11.7 Patient notification exercise

PNEs for patients who have undergone EPPs by an HCV infected HCW would take place according to current guidance. The need for patient notification would be determined by a risk assessment on a case-by-case basis in line with the principles in existing guidance (see [Chapter 14](#)), and the UKAP should be consulted for advice (see [Part G](#) for contact details).

11.8 Management of accidental exposure

There may be occasions when an HCV infected HCW is aware of accidentally exposing a patient to their blood. HCWs are under ethical and legal obligations to take all proper steps to safeguard the interests of their patients. This would include ensuring that when an HCV infected HCW is aware of a patient being exposed to their blood, the usual protocol for an occupational exposure incident should be followed. The HCW should report the incident, and their HCV positive status, to the clinical supervisor, line manager or other person responsible according to local policies.

A detailed risk assessment should be performed by the designated doctor. Where exposure is considered significant, the patient should be counselled for symptoms suggestive of acute infection, for example, fever, abdominal pain, vomiting, dark urine, and yellow eyes, and baseline serum for storage should be obtained. Follow up serum for HCV RNA should be undertaken at 6 and 12 weeks post-exposure, or sooner if symptoms of infection are experienced.

There is currently no post-exposure prophylaxis (PEP) for HCV. Early treatment of acute HCV infection has been shown to lead to viral decrease, preventing progression to chronic infection.⁶² This underlines the need for careful management and follow-up of exposures and early referral for specialist assessment (eg gastroenterology, hepatology, infectious disease units) in the event of transmission.

⁶² Grebely J, Matthews GV, Gregory J, Dore GJ. Treatment of acute HCV infection. *Nat Rev Gastroenterol Hepatol*. 2011;8 (5):265-74.

Chapter 12: HIV

12.1 Risk of healthcare transmission of HIV from healthcare worker to patient

Worldwide, there have been three reports of healthcare associated HIV transmission from infected HCWs during EPPs, a Florida dentist,⁶³ where the exact route of transmission was never established, a French orthopaedic surgeon,⁶⁴ and a gynaecologist in Spain.⁶⁵ In the last two cases, transmission occurred during category 3 EPPs.⁶⁶ A further transmission has been reported involving a French nurse who was coinfecting with HCV;⁶⁷ this did not involve an EPP and the exact route of transmission remains unclear. Genetic relatedness of virus in the HCW and patient(s) was demonstrated in all four cases. These four cases of transmission involved HCWs who were not undergoing antiretroviral therapy at the time of transmission.

A report from a Tripartite Working Group of EAGA, UKAP and AGH concluded that the risk of HIV transmission from an infected and untreated HCW to a patient during EPPs is extremely low for the most invasive procedures (category 3) and negligible for less invasive procedures (category 1).

The data available from PNEs support the conclusion that the overall risk of transmission of HIV from an infected HCW to patients is very low. Between 1988 and 2008, 39 PNEs involving HIV infected HCWs had been undertaken in the UK and reported to UKAP. No cases of HCW to patient HIV transmissions were identified despite almost 10,000 patients having been tested.

The risk of HIV transmission from an infected HCW during an EPP can be reduced even further by combination antiretroviral therapy (cART), if the HCW's viral load is suppressed to a very low or undetectable level.

⁶³ Ciesielski C, Marianos D, Ou CY, Dumbaugh R, Witte J, Berkelman R, et al. Transmission of human immunodeficiency virus in a dental practice. *Ann Intern Med.* 1992;116 (10):798-805.

⁶⁴ Lot F, Segulier JC, Fegueux S, Astagneau P, Simon P, Aggoune M, et al. Probable transmission of HIV from an orthopedic surgeon to a patient in France. *Ann Intern Med.* 1999;130:1-6.

⁶⁵ Mallolas J, Arnedo M, Pumarola T, Erice A, Blanco J, Martinez E, et al. Transmission of HIV-1 from an obstetrician to a patient during a caesarean section. *AIDS.* 2006;20:285-99.

⁶⁶ EPPs are those invasive procedures 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 include procedures where the worker's gloved hands may be in contact with sharp instruments, needle tips or sharp tissues (eg 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. Such procedures occur mainly in surgery, obstetrics and gynaecology, dentistry and some aspects of midwifery. Most nursing duties do not involve EPPs; exceptions include accident and emergency and theatre nursing. Further guidance and examples of EPPs can be found in Department of Health. HIV Infected Health Care Workers: guidance on management and patient notification. London; 2005.

http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4116415

⁶⁷ Goujon C, Scheider V, Grofti J, Montigny J, Jeantils V, Astagneau P, et al. Phylogenetic analyses indicate an atypical nurse-to-patient transmission of human immunodeficiency virus type 1. *J Virol.* 2000;74:2525-32.

12.2 HIV testing of healthcare workers

All new HCWs employed or starting training (including students) in a clinical care setting, either for the first time or returning to work in the NHS should undergo standard healthcare checks which will include being offered an HIV test.

Declining a test for HIV, or being infected with HIV will not affect the employment or training of HCWs who will not perform EPPs.

HCWs who will perform EPPs should be tested for HIV infection. The presence of HIV antibody should not automatically restrict HCWs from performing EPPs. Confirmation of HIV infection should be undertaken, and plasma viral load measured⁶⁸. HCWs who apply for a post or training which requires the performance of EPPs and who decline to be tested for HIV should not be cleared for EPP work.

Appropriate pre-test discussion should include reference to their professional responsibilities in relation to HIV, and a reminder of the ways in which they may have been exposed to HIV (see [Chapter 8](#)).

Practising HCWs who undertake EPPs are under a professional duty to seek medical advice on the need to be tested if they are aware they may have been exposed to HIV infection, occupationally or otherwise (eg if they meet any of the exposure criteria) and if found to be positive, to obtain and follow appropriate clinical and occupational health advice.

12.3 Management of HIV infected healthcare workers

HIV infected HCWs must meet the following criteria before they can perform EPPs:

Either

- a. be on effective cART, and
- b. have a plasma viral load <200 copies/mL

Or

- c. be an elite controller⁶⁹

And

- d. be subject to plasma viral load monitoring every 12 weeks, and
- e. be under joint supervision of a consultant occupational physician and their treating physician, and
- f. be registered with UKAP-OHR

⁶⁸ Vaccine Induced Sero-Reactivity (VISR) may be encountered when testing HCWs who have participated in HIV vaccine trials. Documentary evidence of the HCWs participation in a vaccine trial, with evidence of negative serum HIV p24 antigen and viral load (RNA/DNA) is sufficient to confirm the HCWs HIV negative infectious status. Detecting HIV antibody as a consequence of VISR should not prevent HCWs performing EPPs.

⁶⁹ An elite controller is defined as a person living with HIV who is not receiving antiretroviral therapy and who has maintained their viral load below the limits of assay detection for at least 12 months, based on at least three separate viral load measurements.

Initial health clearance for HIV infected healthcare workers who wish to perform exposure prone procedures

For HCWs wishing to perform EPPs, two IVS⁷⁰ test results taken no less than 12 weeks⁷¹ apart and with viral load levels below 200 copies/mL are required to ensure viral load stability. At this point, a decision should be made as to whether health clearance could be given for the HCW to commence or resume EPP activities.

For HCWs currently restricted from EPPs who are on cART with undetectable viral load (below 200 copies/mL), one IVS at 12-16 weeks since their last undetectable viral load is sufficient proof on which to grant clearance for conducting EPPs⁷².

The decision to clear individual HCWs for work involving EPPs is the responsibility of the consultant occupational physician in consultation with the treating physician. UKAP may be consulted on the application of the policy, as needed (see **Part G** for contact details).

Viral load monitoring and ongoing clearance for HIV infected healthcare workers performing exposure prone procedures

HIV infected HCWs who are cleared to perform EPPs are subject to viral load testing every 12 weeks⁷³ while continuing to perform such procedures. The 12 week period should be taken from the date the previous IVS was drawn, and not from the date the result was received.

If a HCW's plasma viral load rises above 1000 copies/mL, they should be restricted immediately from carrying out EPPs until their viral load returns to being consistently below 200 copies/mL in at least two consecutive tests no less than 12 weeks apart. The significance of any increase in plasma viral load above 200 copies/mL and below 1000 copies/mL, should be assessed jointly by the occupational health and treating physicians with input from appropriate local experts (eg consultant virologist or microbiologist).

⁷⁰ An IVS is defined by Association of NHS Occupational Physicians (ANHOPS) and the Association of NHS Occupational Health Nurses (ANHONS) as meeting the following criteria (a) the healthcare worker should show a proof of identity with a photograph – Trust identity badge, new driver's licence, some credit cards, passport or national identity card – when the sample is taken; (b) the sample of blood should be taken in the occupational health department; (c) samples should be delivered to the laboratory in the usual manner, not transported by the healthcare worker; (d) when results are received from the laboratory, the clinical notes should be checked for a record that the sample was sent by the occupational health department, at the relevant time.

⁷¹ For the purposes of initial health clearance, no less than 3 months apart is defined as between 12 and 16 complete calendar weeks.

⁷² If a HCW's viral load test is performed outside the UK, advice should be sought from UKAP

⁷³ Quarterly viral load testing can be performed no earlier than 10, and no later than 14 complete calendar weeks after the date of the preceding specimen taken for occupational health monitoring purposes.

The table below sets out the expected course of action for viral load test results are below and above the level for EPP clearance.

Viral load count test result	Action
<50 copies/ml or below	No action – retest in 12 weeks
50-200 copies/mL	A case-by-case approach based on clinical judgement would be taken which may result in no action (as above) or a second test should be done 10 days later to verify the first result. Further action would be informed by the test result.
>200 copies/mL but <1000 copies/mL	A second test should automatically be done 10 days later on a new blood sample to verify the first result. If the count was still in excess of 200 copies/mL, the HCW would cease conducting EPPs until their count, in two consecutive tests no less than 12 weeks apart, was reduced to <200 copies/mL.
1000 copies/mL or above	<p>The HCW would cease conducting EPPs immediately. A second test must be done on a new blood sample 10 days later to verify the first result. If the count was still in excess of 1000 copies/mL, a full risk assessment should be initiated to determine the risk of HCW to patient transmission. At a minimum, this will include discussion between the consultant occupational physician and the treating physician on the significance of the result in relation to the risk of transmission.</p> <p>Following a risk assessment exercise, a PNE may be indicated⁷⁴. UKAP advice may be sought at this stage.</p>

Failure to attend or refusal to test

All HCWs performing EPPs should be advised by their consultant occupational physician and their treating physician of the importance of 12 weekly monitoring of their viral load and the implications of not doing so.

Where a HCW does not attend for their appointments, or refuses to have their viral load tested, the consultant occupational physician should inform the HCW's manager that they are no longer cleared to perform EPPs, until it has been established that the HCW is continuing with cART and their viral load (measured within the past 12 weeks) does not exceed 200 copies/mL.

⁷⁴ Guidance on performing a local risk assessment can be found in [Chapter 14](#).

Resuming exposure prone procedures

Resumption of EPP activities following a period of interruption (for whatever reason) requires demonstration of consistent viral load suppression to very low or undetectable levels, that is at least two viral loads below 200 copies/mL, no less than 12 weeks apart.

Elite controllers

Elite controllers comprise a small proportion (0.2-0.55%) of all people living with HIV, who are not receiving antiretroviral therapy and have maintained their viral load below the limits of assay detection for at least 12 months, based on at least three separate viral load measurements.

A HCW who meets the definition of being an elite controller can be cleared for EPP activities without being on treatment, but remains subject to 12 weekly viral load monitoring to ensure they maintain their viral load below 200 copies/mL and to identify any rebound promptly. Any such cases should be referred to UKAP for advice on a case-by-case basis.

12.4 Occupational health monitoring arrangements for HIV infected healthcare workers

The model for allowing HIV infected HCWs to undertake EPPs whilst on therapy relies on continuing care and regular viral load monitoring by both their treating physician and consultant occupational physician. Effective monitoring requires close working between these two parties to ensure that the policy is being adhered to appropriately, thus minimising the risk of transmission.

All HIV infected HCWs who perform EPPs should have their viral load measured every 12 weeks using a blood IVS. Testing for this purpose will usually be carried out by the occupational health service, but where this would give rise to duplication of testing, local arrangements should be made between the treating physician and the occupational health service to ensure that blood drawn from HIV infected HCWs for viral load measurements in GUM or infectious diseases settings follows the principles of an IVS (see [Chapter 3](#)).

To support and monitor implementation of the policy and to ensure patient safety, all HIV infected HCWs, including locum and agency staff, who wish to perform EPPs, and who meet the criteria for clearance must have the outcome of their monitoring promptly reported by the relevant occupational health service to a central confidential register, the UKAP-OHR (see [Chapter 9](#)). Action taken as a result of an increase in viral load

should be reported using the register to record that restrictions on practice are put in place appropriately and, where necessary, risk assessments and PNEs are carried out.

Whilst it is important that UKAP should be called upon for advice on the application of the policy as needed, decisions to clear individual HCWs for EPP work will ultimately remain the responsibility of the treating and occupational health physicians.

The roles and responsibilities of the respective individuals involved in the monitoring process for HIV infected HCWs performing EPPs are set out in [Chapter 9](#).

Testing arrangements

Laboratory testing should be undertaken by Clinical Pathology Accreditation (UK) Limited accredited virology laboratories.⁷⁵

The use of personal identifiers in requests for laboratory tests may be avoided and care taken to ensure that the number of people who know the HCW's identity is kept to a minimum. However, full person identifiers must always be used when sending results to the UKAP-OHR.

Where coding is used, the occupational health physician should liaise with the lead consultant microbiologist/virologist in the local laboratory to ensure a consistent coding system unique to that laboratory is used, and that serial samples from the same HCW are identifiable as such.

Breaks in monitoring

HIV infected HCWs who take a career break from performing EPPs may wish to continue 12 weeks monitoring during this period to facilitate a return to EPP activities. Individuals with a break in their monitoring record must meet the criteria for initial clearance before returning to EPP activities.

Non-exposure prone procedure HIV infected healthcare workers

HIV infected HCWs who do not perform EPPs but who continue to provide clinical care to patients, must remain under regular medical and occupational health supervision in accordance with good practice.

⁷⁵ The turnaround time (TAT) for an HIV viral load test is subject to local agreement and will vary between laboratories. Occupational health physicians should consider the TAT of their local laboratory when scheduling appointments for occupational health monitoring to ensure viral load results are available no later than 14 complete calendar weeks after the date of the preceding specimen taken for occupational health monitoring purposes.

12.5 Treatment issues

It is for the HCW to decide, in collaboration with their specialist treating physician, whether they wish to take cART for occupational health reasons when it is not clinically indicated, taking account of possible advantages and disadvantages.

HCWs should be advised by their treating physician of the importance of notifying them of missed doses, drug interactions, or other factors that might influence their viral load, as soon as is practicable and before further EPPs are performed.

Management of treatment failure or suboptimal treatment response

If there is any suggestion that the HCW's infection is no longer controlled by their antiretroviral treatment, the treating physician overseeing the case may consider it appropriate that viral load tests are performed sooner than the next 12 week test. Advice on the management of suspected treatment failure or suboptimal response should be sought from appropriate specialist team.

12.6 Patient notification exercises

PNEs for patients who have undergone EPP by an untreated HIV infected healthcare worker would take place according to current guidance on HIV infected HCWs (see [Chapter 14](#)).

PNEs connected with HIV infected HCWs on cART would only be considered in circumstances in which their viral load had risen above 1000 copies/mL. The need for patient notification would be determined by a risk assessment on a case-by-case basis in line with the principles in existing guidance and focus on the period of time between their last date of EPP clearance and the date of their most recent IVS for monitoring purposes; this should be no more than 14 complete calendar weeks. UKAP should be consulted for advice on undertaking a PNE.

12.7 Management of accidental exposure

There may be occasions when an HIV infected HCW is aware of accidentally exposing a patient to their blood. HCWs should be advised of the action to take in the event of this scenario.

The risk of transmission of BBV infection is directly related to the concentration of the virus in the blood of the source at the time of exposure. Exposure to the blood or body

fluids of a HCW who is on cART and has a low and stable HIV viral load is likely to pose an extremely low risk of transmission.

In managing an accidental exposure, the usual protocol for such an incident should be followed. The HCW should report the incident to the clinical supervisor, line manager or other person responsible according to local policies. A detailed risk assessment should be performed by the designated doctor in discussion with the HCW's consultant occupational physician and/or the HCW's treating physician, focussing on the adherence of the HCW to treatment, the frequency (if any) of "blips" in the viral load and the presence of factors which might raise the HCW's viral load.

Where the exposure is considered non-significant, no further action is required.

If the exposure was judged to be significant and the HCW has a stable low viral load (less than 200 copies/mL), neither PEP nor follow-up HIV testing of the patient is necessary. There is no reason to advise patients of a possible exposure where the HCW was complying with the policy (ie had a viral load less than 200 copies/mL) and was cleared for EPP work, as the risk of PEP treatment far outweighs any risk of transmission.

Where there is a concern that the viral load might be detectable (above 200 copies/mL), the HCW's viral load should be tested immediately, PEP should be offered to the patient pending the result, and the reasons for this explained to the patient. PEP can be discontinued if the viral load is less than 200 copies/mL, the patient reassured, and no HIV testing would be required.

If the level is greater than 200 copies/mL, PEP should be continued for four weeks and a fourth generation serological test should be performed 4 weeks after the exposure event (deferred to 4 weeks from when the PEP course was completed). Thereafter the need for a further test at 8 weeks following the exposure should be determined by a risk assessment on a case-by-case basis.⁷⁶

⁷⁶ EAGA guidance on post-exposure prophylaxis. www.gov.uk/government/publications/eaga-guidance-on-hiv-post-exposure-prophylaxis

PART E:

PATIENT NOTIFICATION EXERCISES

Chapter 13: The UK Advisory Panel on Healthcare Workers Infected with Bloodborne Viruses (UKAP)

The UKAP was set up originally under the aegis of EAGA in 1991 to consider individual cases of HIV infected HCWs. In 1993 its remit was extended to cover HCWs infected with other BBVs, in particular HBV and more recently HCV. Advice for occupational physicians arises from individual queries, cases or general issues which have been referred to the UKAP since its inception.

13.1 The role of UKAP

The tasks of UKAP are to:

- establish and update as necessary, criteria on which local advice on modifying working practices may be based
- provide supplementary specialist occupational advice to physicians of HCWs infected with BBVs, occupational physicians and professional bodies
- advise individual HCWs or their advocates how to obtain guidance on working practices
- advise those with the responsibility for managing incidents involving BBV infected HCWs, on PNEs, where these are indicated
- keep under review the literature on transmission of BBVs in healthcare settings

13.2 Members of UKAP

Appointments to UKAP are made by the Chief Executive of PHE usually for a term of one to three years. UKAP Panel members are selected on the basis of their specialist expertise and include people with medical and scientific expertise as well as lay members.

The current membership list and code of conduct for members, is available at the [UKAP webpages](#).

13.3 When to consult UKAP

UKAP advises as a committee and may be consulted through its Secretariat. The Panel is available for consultation:

- when advice is needed regarding restricting the practice of HCWs infected with BBVs
- when a PNE may be needed as a result of EPPs being undertaken on patients by a HCW infected with a BBV as indicated for the specific virus in [Chapter 10](#), [Chapter 11](#) and [Chapter 12](#)
- for general advice concerning the categorisation of clinical procedures as exposure prone
- for advice on the implementation of guidance for managing HBV and HIV infected HCWs

The Panel works within the framework of government guidance concerning HCWs and BBVs, and aims to interpret the guidance in relation to individual cases on a consistent basis.

Cases are considered by UKAP, however, experts from other specialties not represented on UKAP are co-opted to advise as necessary.

13.4 How to consult UKAP

Directors of public health, consultants in communicable disease control (CCDC) and public health medicine (CPHM), physicians, occupational health practitioners and others wishing to obtain the UKAP's advice should contact the Medical Secretary by letter, email (ukap@phe.gov.uk) or by telephone if urgent. A formal request for advice should be sent to UKAP via the Secretariat, accompanied by a completed UKAP enquiry proforma ([here](#)). Those seeking the advice of UKAP should ensure the anonymity of the referred HCW and should avoid the use of personal identifiers.

Confidentiality of all information concerning individual referrals will be maintained by the secretariat and members of the UKAP. In order to ensure that response times from UKAP are kept to a minimum, from the time of initial request for advice to resolution, local teams requesting advice must ensure that UKAP are provided with as much information as possible at the time of submitting the request.

The Secretariat to UKAP is provided by staff at PHE, National Centre for Infectious Disease Surveillance and Control, and Health Protection Scotland. Contact details for UKAP enquiries can be found [here](#)

Chapter 14: Investigation of a healthcare worker diagnosed with BBV, including deciding whether a patient notification exercise is required

14.1 Purpose of patient notification

The overall objective of patient notification is to identify the patient population who have been at a distinct risk of exposure to the blood of a BBV infected HCW. In so far as practicable, these patients should be contacted, offered a pre-test discussion and encouraged to have the relevant antibody test(s).

Notification of patients identified as having been exposed is considered necessary:

- to provide patients with information about the nature of the risk to which they have been exposed
- to detect any infection, provide care to the infected person and advice on measures to prevent onward transmission
- to collect valid data to augment existing estimates of the risk of BBV transmission from an infected HCW to patients

14.2 Initial local investigation of a healthcare worker infected with a bloodborne virus

There are a number of steps to be taken when investigating an incident involving the diagnosis of a BBV in a HCW regardless of whether a case of iatrogenic transmission has been recognised.

In carrying out the initial investigation and, if required, a full risk assessment, the co-operation of the HCW will be necessary, and should be sought in as sensitive a manner as possible, preferably by his or her own treating physician or occupational health consultant. Ideally the bulk of the HCW's medical and employment history should be obtained from the HCW. If for any reason this is not possible or appropriate, the history may require reconstruction or supplementation from other data sources after appropriate consent has been obtained.

Undertaking a full virology assessment of the healthcare worker

Steps should be taken to ensure that there is no doubt that the HCW is infected, including repeat testing in a UK laboratory if appropriate. Carefully document the HCW's clinical history (including dates, places and results of tests for antibody, viral load, and if appropriate CD4 cell counts) to assemble a record of the course of infection.

Establish the likely period when the HCW may have been infectious:

- is there evidence of possible seroconversion illness or symptomatic disease
- check if there are stored serum samples available from, for example HBV screening, that could be tested (with consent) to obtain further information
- establish if the HCW sustained any needlestick injuries, both reported and unreported. It is possible that the HCW's infection was acquired from a patient whom they treated
- ascertain if there are any previous documented negative test results from, for example, the follow-up of a needlestick injury
- consider if the HCW worked in a country with a high prevalence of BBV infection or had other non occupational risk factors, eg injuries, blood transfusion and so on

Although it is unlikely that the exact date of onset of the HCW's infection will be known, the clinical history may indicate when this was likely to have occurred.

Compiling a full employment history for the period when the healthcare worker is likely to have been infectious.

A full employment and/or training history, including an explanation of any gaps between periods of employment or training, for the period when the HCW is likely to have been infectious, needs to be compiled. It is important to get this information as accurate as possible, and every effort should be made to obtain this information directly from the HCW.

As a minimum, the following information should be obtained:

- where the HCW has been employed or trained
- dates employed or trained
- position held or course undertaken

It may be hard, especially for highly mobile HCWs who have been employed or trained in a number of positions throughout their career, to recollect all employment details. When information is missing, it may be possible to obtain a full employment record from

the NHS Pensions Agency (www.nhsbsa.nhs.uk) for HCWs employed in England and Wales, The Scottish Public Pensions Agency (www.sppa.gov.uk) for HCWs employed in Scotland and The HSC Pensions Scheme (www.hscpensions.hscni.net) for HCWs in Northern Ireland.

Establishing the nature and history of the clinical practice of the healthcare worker

It is important to ascertain the nature of the duties performed by the HCW. This must take into account the clinical speciality and the level of risk of the procedures which the HCW is known to have performed (or is likely to have performed). It may be helpful to review some records of those treated by the infected HCW to assess the range of procedures performed. In the case of surgeons and theatre nurses, the pertinent question is whether the HCW undertook EPPs as either main operator or first assistant.

14.3 Risk assessment of the need for patient notification

If a BBV infected HCW has been recognised as the source of iatrogenic transmission to a patient, the individual responsible for the investigation should make a careful appraisal of the facts, seeking relevant specialist advice (eg occupational health, epidemiological and virological advice). This process should involve as few other people as possible, on a strictly confidential need-to-know basis, in order to preserve the HCW's confidentiality.

The decision on whether a PNE should be carried out at all, and if so how far to look back, will depend on the specific circumstances of each case. EAGA, AGH and UKAP have recommended that the decision should be made on a case-by-case basis.

Evidence of iatrogenic transmission from a healthcare worker to a patient

Where a HCW is diagnosed with a BBV in the absence of a probable case of iatrogenic transmission, a patient cross matching exercise should be undertaken by the local incident management team.

This can be done in two ways.

1. Obtain a list of all positive tests from the appropriate microbiology laboratories and investigate whether any individuals had treatment which may have exposed them to the risk of transmission from the infected HCW.
2. Compile a list of patients potentially exposed and check this against local, regional or national laboratory or surveillance lists of positive tests and then ascertain whether any of them were treated by the HCW.

The approach taken by local incident teams will depend on:

- the length of the infected HCW's period of employment
- the number of hospitals involved; if the HCW worked in more than one organisation, the same process of investigation will have to be completed for each hospital where the HCW was employed. The local investigations will need to be coordinated by local incident management teams
- the number of patients who may have been exposed
- the nature of the patient records available; it should be relatively straightforward to compile a list of patients by using electronic records (including those used by dentists for claiming payment for NHS treatment). If the absence of electronic records for the relevant HCW makes it more difficult to compile a list of patients on whom the HCW undertook EPPs, it may be possible to interrogate a hospital patient administration system or compile a list from theatre log books
- the ease of access to reports of new cases of BBV infection by the local incident management team

The patient identification process will require the assistance of the medical records officer. All procedures undertaken by the infected HCW should be reviewed and categorised according to level of risk of bleed-back (non-EPP, EPP categories 1 to 3). Patient identification should be conducted as swiftly as practicable. External pressure should be resisted and should not be permitted to prompt inappropriate action in haste, although it is accepted that public concern may influence the speed with which the case finding process is undertaken. A balance should be sought between conducting the risk assessment and, if required, the PNE quickly and risking unnecessary public anxiety. Unnecessary or inappropriate notification (eg patients who have not undergone an EPP) can cause unjustifiable distress, and detract from the value and acceptability of properly targeted PNEs.

When more than one organisation is involved, these activities should take place according to a timescale agreed by the multi-site incident team.

Where the duration of infection is unknown, where a clinical history cannot be obtained or if the HCW has died, for an untreated HIV infected HCW, it is currently recommended that in the first instance, patients who have undergone relevant EPPs during the preceding 10 years be identified, where records are still available (10 years is the median incubation period from infection to symptomatic disease in untreated HIV infected individuals). If there is evidence of iatrogenic transmission from the HCW to a patient during this time, then the exercise should be extended for as long as is possible. For PNEs involving HCV or HBV infected HCWs, there is no specified time limit and the patient notification period should cover the employment history of the HCW.

For HBV or HIV infected HCWs who have been cleared to perform EPPs, and whose most recent viral load level for monitoring purposes has exceeded the cut-off, patients who have undergone relevant EPPs since the date of last EPP clearance should be identified. This should be a maximum of 14 weeks for HBV or HIV infected HCWs on treatment, or 54 weeks for HBV infected HCWs not on treatment. For HCWs monitored every three months, it is recommended that the cross-matching exercise be delayed for a further three months. This would allow sufficient time for patients to have sought medical care if they had acquired infection and were symptomatic.

If positive cases are found following cross-matching of records of the HCW's patients, the local risk assessment will include:

- a process of elimination for risk factors other than treatment by the infected HCW. For example:
 - did the patient acquire their infection before the date of treatment by the HCW?
 - did infected individuals have any other known risk factors for BBV infection?
- phylogenetic analysis, on both the serum of the patient and the HCW (with the consent of both), to confirm whether or not iatrogenic transmission may have occurred. Inability to obtain consent shall not preclude the phylogenetic analysis of the virus where it is considered vital in influencing the decision making process regarding the necessity for a PNE. Whether or not consent has been given, the infected HCW and/or the patient should be kept informed about the phylogenetic analysis, including the implications and results for the individuals concerned, in accordance with good clinical practice

For HCV infected HCWs, a useful check is to investigate whether any of the laboratory cases have the same genotype as the infected HCW; this can be particularly helpful if the HCW is infected with a rare genotype. Phylogenetic analysis need only be undertaken on those patients with the same genotype as the HCW.

Difficulties with patient cross-matching exercises have been experienced by local teams where, for example, a locum surgeon has worked in many different hospitals over a long period. Questions have been raised about the cost benefits of the exercises undertaken in such a scenario. UKAP advises that the investigation should be 'practical and proportionate' to the risk of transmission.

Other relevant considerations

In the absence of evidence of iatrogenic transmission or if the HCW did not perform EPPs, other consideration should be investigated as part of the risk assessment. These could include, for example:

- evidence of poor clinical practice (eg poor infection control and frequent needlestick injuries)
- evidence of physical or mental impairment as a result of symptomatic HIV disease (or any other disease), or relevant activities (eg the use of drugs for recreational purposes), which could affect the infected HCW's standard of practice Examples include: visual impairment, neurological deficit and dementia
- other relevant medical conditions, eg skin diseases, such as weeping eczema

It may also be relevant to consider the interval between the HCW being diagnosed and when this was reported to an occupational health physician or to public health officials; what recommendations were made during any of this time, and were they documented; did the HCW continue to practice during this time?

14.4 Assessing the need for a patient notification exercise

If the HCW did not perform EPPs, no PNE will be necessary and UKAP need not be consulted for advice unless there is a recognised case of iatrogenic transmission or there are "other relevant considerations". UKAP should however, be informed in writing of incidents where it is concluded that a patient notification is not warranted.

Where a BBV infected HCW has performed EPPs and/or there is a recognised case of iatrogenic transmission, or "other relevant considerations", the case should be referred to UKAP once the local risk assessment has been completed.

Local investigators should complete the UKAP enquiry pro forma, providing the Panel with the full relevant history, including details of the methodology of the local investigation and risk assessment. The completed pro forma should be sent to the Secretariat with an explanatory letter. UKAP may also be approached for advice if there is difficulty in reaching a conclusion locally about the categories of procedures performed by the HCW or the application of the other criteria.

UKAP can provide expert advice on the need to undertake a PNE, however, the decision to undertake a PNE rests locally with those charged with the responsibility of investigating and managing such incidents, for example CCDC or CPHM in the local health protection unit.

HIV infected healthcare workers

Where there is evidence of HIV transmission from an infected, and untreated HCW, to a patient, all patients who have undergone EPPs (category 1, 2 and 3), by that HCW should be notified, counselled and offered a test for HIV.

For infected untreated HCWs in the absence of evidence of HIV transmission, all patients who have undergone category 3 procedures during the preceding 10 years should be notified and offered an HIV test. The risk of HIV from an infected HCW to a patient during a category 1 or 2 EPP is considered to be negligible, and notification of patients who have undergone category 1 and 2 procedures is **not** necessary unless information gathered under the 'other relevant considerations' criterion suggests that it is.

For HIV infected HCWs who had been cleared to perform EPPs, and whose most recent viral load level was above 1000 copies/mL, if there is evidence of HCW to patient transmission, and/or where there are "other relevant considerations" all patients undergoing EPPs (category 1, 2 and 3), since the last date of EPP clearance, should be notified and offered an HIV test. In the absence of evidence of transmission, the need for patient notification would be determined by a risk assessment on a case-by-case basis in line with the principles in existing guidance and focus on the period of time between their last date of EPP clearance and the date of their most recent IVS for monitoring purposes; this should be no more than 14 complete calendar weeks. Following a risk assessment exercise, a PNE may be indicated UKAP advice may be sought at this stage.

Hepatitis C infected healthcare workers

Where there is evidence of HCV transmission from an HCV RNA positive HCW to a patient, and/or where there are "other relevant considerations", all patients who have undergone EPPs by that HCW should be notified, counselled and offered a test for HCV. If there is no evidence of HCW to patient transmission found, there is no need to notify patients.

Hepatitis B infected healthcare workers

Where HBV transmission from a newly diagnosed and untreated HBV infected HCW has been detected and/or where there are "other relevant considerations" then all patients in EPP categories 1 to 3 should be notified, counselled and offered a tested for HBV.

If there is no evidence of HCW to patient transmission found, there is no need to notify patients

For HBV infected HCWs who had been cleared to perform EPPs, and whose most recent viral load level was above 200 IU/mL, if there is evidence of HCW to patient transmission and/or where there are "other relevant considerations", all patients undergoing EPPs since the last date of EPP clearance, should be notified and offered

an HBV test. In the absence of evidence of transmission, patient notification will be dependent on the most recent viral load measurement.

14.5 Support for local incident management teams

The UKAP Secretariat staff in PHE, National Centre for Infectious Disease Surveillance and Control, and Health Protection Scotland, are available for advice and support on the management of incidents involving HCWs infected with BBV, including the practical aspects of undertaking local risk assessments and PNEs. In addition, a UKAP lookback toolkit containing advice and template documents to assist local incident management teams is also available.

PHE contact details: Tel: 020 8327 6074 Email: ukap@phe.gov.uk

Health Protection Scotland: Tel: 0141 300 1100 / Fax: 0141 300 1170 / Email: NSS.HPSenquiries@nhs.net

14.6 Confidentiality during the risk assessment for a patient notification exercise

Preserving the confidentiality of the HCW is of paramount importance. The number of individuals who know the identity of the infected HCW should be kept to a minimum at all stages. It may not be necessary for all members of the team(s) to be aware of the identity of the infected HCW. The consent of the infected HCW for disclosure should be obtained where possible.

Extra care will need to be taken where the HCW has been employed in more than one region. Undertaking the local investigation a stage at a time may sometimes avoid the need to disclose their identity beyond the occupational health service.

All documents pertaining to the local investigation should be held, and shared, as per local information governance procedures

Chapter 15: Undertaking a patient notification exercise

When it has been decided that a PNE is necessary, a small incident team should be set up locally.

Where more than one organisation is involved, the individual who has the responsibility for managing incidents involving BBV infected HCWs should promptly notify in confidence the appropriate person in any other organisation involved in the exercise. They should also inform PHE, National Centre for Infectious Disease Surveillance and Control (for cases in England, Wales and Northern Ireland) or Health Protection Scotland (for cases in Scotland).

Consideration should be given also to the need for a multi-site incident team. The lead organisation should be identified, and the roles of members of local as well as multi-site teams should be clarified at the outset.

Patient identification undertaken as part of the risk assessment exercise will provide a complete list of names of the patients treated (and the procedures performed), by the HCW during the period that they were likely to have been infectious. This should be given in confidence to the incident team to enable contact.

15.1 Contacting patients

In deciding how best to contact patients and the information to be given, the following factors should be borne in mind:

- the numbers likely to be involved
- the profile of the patients who may require notification
- the type of operation or procedures undertaken
- whether children are involved

As a general principle, it is preferable for patients to be personally contacted by a counsellor, health adviser or other relevant health professional before any press announcement is made and every effort should be made to do so.

In large-scale PNEs it may be judged neither reasonable nor practicable to contact exposed patients personally, in which case they should be contacted by other means such as by letter. In incidents involving a number of organisation, ideally a coordinated approach should be taken with patients being notified at the same time.

For elderly or other more vulnerable patients, for example, those receiving psychiatric care (who may be disproportionately worried by receiving a letter), it may be preferable to write to the GP first, asking them to decide whether it is appropriate to inform the patient. However, not all such cases are likely to be recognisable during the patient identification process.

15.2 Writing to patients

Most patients' addresses should be available from the case notes, but more up to date addresses may be obtained from the organisation(s) involved, although identifying a new address when the patient has moved out of the area can take some time. Where the organisation has no record of a particular patient they may possibly be traced through the NHS Central Register at Southport or Edinburgh, or the Central Services Agency in Northern Ireland.

If possible, letters to patients should be sent so that they arrive before or on the day of any planned press statement. The addresses should be checked and letters sent by first class post marked strictly private and confidential. If letters are sent directly to patients, it is suggested that local GPs are written to at the same time to inform them that a PNE is underway, and to advise them which of their patients, if any, are involved.

It is helpful to enclose a pre-paid envelope and reply slip for the patient/GP to return, to confirm they have received the letter. This assists with the documentation and further handling of the incident.

The letters should give details of a dedicated confidential helpline number. Patients receiving a letter may be very anxious to discuss the situation or arrange to have the appropriate BBV test at the earliest opportunity.

15.3 General security and confidentiality of records during a patient notification exercise

The general conditions applying to confidential information about patients are equally valid in PNEs. This includes not only the names of patients being contacted, but also the names of those who have telephoned the helplines. It is therefore important to restrict access to the local incident room or to any other place where confidential records may be held. In addition, general heightened security measures will be necessary as there may be unauthorised attempts to gain access to this information.

15.4 Telephone helplines

If details about an infected HCW incident have entered or are likely to enter the public domain, NHS organisations should consider setting up a general helpline in addition to

the specific helpline offered to patients contacted in the notification exercise. This will help avoid the organisation's switchboard becoming jammed. It may be appropriate to contract existing local or national BBV help-lines or NHS health advice and information services (eg NHS Choices in England or NHS 24 in Scotland) to help provide such a service. A Sexual Health Line can also provide more general help and advice for notification exercises involving an HIV-infected HCW. Any local helpline should also take account of the particular needs of people whose first language is not English.

If establishing a local helpline, it is useful to bear the following in mind:

- the telephone company should be contacted immediately the decision to set up a general helpline has been made
- large numbers of telephone lines can take 24-48 hours to establish. If necessary, start with as many lines as can be made available at the time and then introduce more later. Lines can be decommissioned as demand subsides
- the number of calls can be very large. At the start of larger incidents, helplines often have had to deal with 300-400 calls an hour.
- the desirability of publicising a general helpline number should be balanced against the possibility that this may provoke needless alarm and that members of the public may feel they ought to contact it
- lines should ideally operate from 8am to midnight in the first instance, and over the weekend. An answerphone with a reassuring message, including the Sexual Health Line number if appropriate, should be in operation overnight
- helplines should not be routed through the switchboard of the main organisation(s) involved, otherwise they will become jammed
- staff working on any helpline will need briefing and discussions with the incident team, so that they are able to reassure callers that any patient who is considered to have been placed at risk of infection will be notified individually and offered testing. Depending on the complexity of the case-finding process, this may not be until after an evaluation phase has been completed
- when patient identification is not complete, callers should be told that they will be contacted, if appropriate, once their records have been checked
- if patient identification is complete and a patient calls a helpline insisting that they have been treated by the HCW whose identity is in the public domain but there is no record of this, their views must be respected and testing offered if requested
- in the event that helplines are continually blocked, experience has shown some people telephone or come directly to the organisation(s) involved
- switchboard and reception staff may require briefing and should know where to refer them. Such patients should be seen by a well briefed staff member on site as soon as possible

15.5 Pre-test discussion and testing of patients

Patients who are contacted as part of a PNE should be informed that they may have been exposed to a low risk of transmission of a BBV from an infected HCW and should be offered an appropriate test with a pre-test discussion.

People considering whether to have a test may require reassurance concerning any effect this may have on their insurance. The Association of British Insurers has recommended to its members that for life insurance proposals and proposals for other types of insurance where health or lifestyle questions are asked, they no longer ask whether the applicant has had counselling or a negative test for a BBV.

Insurers continue to be entitled to ask about any positive HIV, HCV or HBV virus test result in connection with a relevant life insurance application.

Arrangements should be in place for voluntary confidential HIV, HCV or HBV virus testing of notified patients. If the patient's EPP occurred less than three months earlier, the test should be repeated at least three months following the procedure. This is because of the "window period" between infection with a BBV and appearance of antibody. Staff responsible for pre-test discussion will need to explain that occasionally a second specimen may be needed and that this does not necessarily indicate that infection is present.

A large number of patients may decide to be tested. Such testing must be undertaken by Clinical Pathology Accreditation (UK) Limited or United Kingdom Accreditation Service accredited virology laboratory in the UK, with the facilities and experience to handle a heavy demand for testing. The laboratory director should be consulted before any local arrangements are made. The laboratory director will also arrange for confirmatory testing and gene sequence investigations where these are required.

The results of the test must be made available to the patient as soon as possible, ideally by the person who provided pre-test discussion.

Depending on the circumstances, it may be helpful if the laboratory forms accompanying the patients' specimens are marked with an agreed code. This will allow any peripheral laboratories to recognise tests which relate to a particular incident and will facilitate the rapid reporting of results. Ideally, these should all go through the same laboratory.

Any initially reactive test results should be discussed with a reference laboratory as a matter of urgency so that confirmatory tests can be rapidly completed. Laboratories should report relevant test results to the incident team for incorporation into the patient notification database.

15.6 Further investigation of positive results

In any exercise of this nature it is possible that unrelated positive test results may be obtained because of risk factors other than treatment by the infected HCW. A repeat blood specimen should be collected from patients with a positive test result and tested in a reference laboratory

If the presence of a BBV infection is confirmed, the patient should promptly be referred to a specialist physician for clinical management. The following investigations should also be undertaken:

- the senior investigator should personally undertake a detailed record review to document the EPP and to confirm that the infected patient was exposed to the BBV infected HCW. Copies of the relevant records should be made and securely stored
- if the patient received any blood or blood products, the National Blood Transfusion Service should be asked to investigate the donors
- the infected patient should be interviewed by an experienced clinician or counsellor in order to obtain a detailed history of risk factors for their infection;
- specimens should be obtained from the infected patient and securely stored for viral isolation and phylogenetic analysis if required at a later date
- if the patient is concerned for their partner(s) or family members, then they should be given the offer of viral testing
- specialist epidemiological and virological advice on further investigation should be sought

15.7 Communication with staff in the organisation(s) involved in the patient notification exercise

Staff in the organisation(s) involved may also be worried and concerned about the issues surrounding the BBV involved, the effect of the exercise on their relationships with patients, or because they know or worked with the HCW. They may also be contacted by worried patients. It is recommended that appropriate staff are briefed by the incident team about the exercise, initially on a strict need to know basis, or more widely if details have entered the public domain or are likely to do so. The identity of the infected HCW should not be revealed or discussed.

15.8 Dealing with the media

If at all possible, patient identification should be complete before any public announcement is made to reduce unwarranted public anxiety. In practice, particularly

when large numbers of patients are concerned and if the media have become aware, this may not be possible.

In dealing with the media, and in preparing press releases where necessary, it should be stressed that individuals who have been examined or treated in confidence are entitled to have their confidence respected.

Any breach of confidentiality can be very damaging for the individuals concerned, and it undermines the confidence of the public and of HCWs in the assurance about confidentiality which are given to those who come forward for examination or treatment.

Every effort should be made to avoid disclosure of the infected HCW's identity, or information which would allow deductive disclosure. This should include the use of a media injunction as necessary to prevent disclosure.

A nominated press officer should be part of the incident team from the start of the exercise. If at all possible, they should have experience of working with the national media.

In the event of media interest or other external enquiries during the period of evaluation prior to a PNE, the chair of the incident team should acknowledge that a case is being investigated. If necessary the media should be told that when the evaluation is complete anyone who is considered to have been at risk will be notified individually, counselled and offered appropriate testing. At the same time, an assurance should be given that the overall risk is considered very low.

A public announcement can give rise to unnecessary public alarm and may result in the loss of confidentiality for exposed patients and the infected HCW. In some incidents involving small numbers of patients no such announcement has been made. An announcement may be necessary if, for instance, wide knowledge of the incident means that it is likely to become known to the media and public. Although desirable, it is often not possible to complete patient identification or to contact patients before any public announcement is made. This needs to be decided on a case-by-case basis as local circumstances may vary.

A media statement should be held in readiness at all times, reviewed regularly, for use in the event of media enquiries.

An ideal scenario exists when all exposed patients have been identified and contacted, so that if necessary a press statement could be used to confirm, if the media enquire, that all patients exposed to risk have been informed and others need have no cause for concern.

If, however, a proactive public announcement is judged necessary, it will normally be made through a press release. This should be as informative as possible to avoid unnecessary public anxiety, whilst avoiding the inclusion of information which could lead to deductive disclosure of the HCW's identity. The HCW should not be named. It should:

- refer to “a HCW” unless more explicit information about the HCW's profession has already entered the public domain
- include details of arrangements which are being or have been made to contact patients
- reassure that all patients who may have been exposed to risk will be or have been contacted individually, and offered testing as appropriate

In addition, the “Notes for Editors” might state that a media injunction will be sought and invoked if necessary, to prevent any publication or other disclosure of the HCW's identity. If a media injunction is sought, careful consideration should be given to how restrictive it needs be. A very restrictive media injunction may result in greater public alarm than one which allows a limited disclosure of information that would not lead to deductive disclosure of the HCW's identity.

If details of an incident are in the public domain, NHS and other relevant authorities may consider that in order to deal effectively with the potentially large number of media enquiries, they should hold a press conference. A medically qualified person should be present, along with senior managers and the incident team's nominated press officer. Public announcements should not be delayed if it proves difficult to assemble all relevant persons for a press conference.

Press conferences may need to be held more than once if there is further media interest.

If it is known that a BBV infected HCW has worked for a number of different organisations, any public announcements should ideally be made by all the authorities concerned at the same time. The multi-site incident team should issue a statement which covers all areas, or if separate communications are necessary, ensure that the content and timing of these are consistent.

15.9 Reviewing the outcome

Once the incident is over, the head of the incident team should correlate the master list of patients, appropriately coded, and details of the procedures undergone with the BBV test results.

In all cases it is helpful, when the exercise is complete, to evaluate how it was managed, identify pressure points or problems and refine local planning accordingly.

The completed dataset and final report should be archived with the UKAP Secretariat to assist further epidemiological assessment of the risk of BBV transmission from a HCW to patient, and the further development of this guidance.

PART F:

GENERAL PRINCIPLES OF BLOODBORNE VIRUS INFECTION CONTROL

The general principles and practices of infection control are designed to protect HCWs and patients from infection caused by a broad range of pathogens including BBVs. These principles and practices must be followed when caring for all patients to minimise the risk of exposure to blood products and any associated BBVs.

Guidance for clinical HCWs on minimising the risk of exposure to blood products and any associated BBV can be found on the Health and Safety Executive website <http://www.hse.gov.uk/biosafety/blood-borne-viruses/safe-working-practices.htm>, and has been reproduced below. The measures recommended will also minimise the risk of transmission from infected HCWs to patients, and from patient-to-patient.

- Avoid contact with blood or body fluids.
- Take all necessary precautions to prevent puncture wounds, cuts and abrasions in the presence of blood and body fluids.
- Avoid use of, or exposure to, sharps (needles, glass, metal, etc) when possible, and discard sharps directly into the sharps container immediately after use, and at the point of use.
- Take particular care in handling and disposal if the use of sharps is unavoidable – 'one use only' contaminated sharps must be discarded into an approved sharps container (this is generally safer and more practical than attempting to recycle contaminated items). This must be constructed to BS 7320; 1990/ UM 3291, and used containers must be disposed of through a waste management company who will dispose of them safely as 'waste for incineration only'.
- Protect all breaks in exposed skin by means of waterproof dressings and/or gloves. Chain mail and armoured gloves are available to protect the hands when working with sharp instruments or exposed to bone splinters, etc.

- Protect the eyes and mouth by means of a visor or goggles/safety spectacles and a mask when splashing is a possibility (this will also protect against bone fragments in orthopaedic surgery and post-mortem examination).
- Avoid contamination of the person or clothing by use of waterproof/water resistant protective clothing, plastic apron, etc.
- Wear rubber boots or plastic disposable overshoes when the floor or ground is likely to be contaminated.
- Apply good, basic hygiene practices, including hand-washing, before and after glove use, and to avoid hand-to-mouth/eye contact. Disposable gloves should never be washed and reused, as they may deteriorate during use and in washing. If latex gloves are worn, powder-free, low-protein products should be chosen to help prevent latex allergy. Any disposable gloves should be CE marked for use with biological agents.
- Control surface contamination by blood and body fluids by containment and appropriate decontamination procedures.
- Dispose of all contaminated waste safely and refer to relevant guidance.

PART G: LINKS TO GUIDANCE DOCUMENTS AND WEBPAGES

Regulatory Bodies' for statements on professional responsibilities

General Medical Council

Duties of a Doctor: specifically Domain 2: Safety & Quality

General Dental Council

Standards for the Dental Team: specifically standards 1,6,7,8 and 9

Nursing & Midwifery Council

The Code for Nurses and Midwives: specifically standards 5,8,16,17,19 and 23

Health & Care Professions Council

Standards of conduct, performance and ethics: specifically standards 1,11 and 12

UK Advisory Panel for Healthcare Workers Infected with Bloodborne Viruses (UKAP): [here](#)

UKAP enquiry proforma: [here](#)

Exposure prone procedures

UKAP-OHR registration form: [here](#)

Guidance on categories of exposure prone procedures is available [Here](#)