



Public Health
England

The Management of HIV infected Healthcare Workers who perform exposure prone procedures: updated guidance, January 2014

About Public Health England

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NOTE: This guidance will be included within consolidated guidance on HIV, HBV and HCV healthcare workers who conduct exposure prone procedures, to be published in April 2014.

1. Risk of health care transmission from HCW to patient

Worldwide, there have been three reports of health care associated HIV transmission from infected healthcare workers (HCWs) during exposure prone procedures (EPPs); a Florida dentist¹, where the exact risk of transmission was never established; a French orthopaedic surgeon²; and a gynaecologist in Spain³. In the last two cases transmission occurred during category 3 EPP¹. A further transmission has been reported involving a French nurse who was co-infected with hepatitis C⁴; 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 taking antiretroviral therapy at the time of transmission.

A report from a Tripartite Working Group of the Expert Advisory Group on AIDS (EAGA), the UK Advisory Panel for Healthcare Workers Infected with Blood-borne Viruses (UKAP) and the Advisory Group on Hepatitis (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 patient notification exercises (PNEs) support the conclusion that the overall risk of transmission of HIV from infected HCW to patients is very low. Between 1988 and 2008, 39 PNEs involving HIV infected

¹ 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

HCWs were undertaken in the UK and reported to UKAP. No cases of HCW to patient HIV transmission were identified despite almost 10,000 patients having been tested⁵. The Tripartite Working Group report estimated the risk of HIV transmission to any patient having the most invasive type of EPP from any HCW, to be between one in 33,000 and one in 833,000⁵.

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.

2. HIV testing of HCWs

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 HIV antibody test. HCWs who will perform EPPs must be tested for HIV antibody⁶. HCWs who apply for a post or training which requires the performance of EPPs and who decline to be tested for HIV, hepatitis B and hepatitis C 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, which include:

- a) if they are male, engaging in unprotected sexual intercourse with another man
- b) having unprotected intercourse in, or with a person who had been exposed in a country where transmission of HIV through sexual intercourse between men and women is common
- c) sharing injecting equipment while using drugs
- d) having a significant occupational exposure to HIV infected material in any circumstances
- e) engaging in invasive medical, surgical, dental or midwifery procedures, either as a practitioner or patient, in parts of the world where infection-

control precautions may have been inadequate, or where the population prevalence of HIV infection is high

- f) engaging in unprotected sexual intercourse with someone who may have been exposed to HIV through any of the above categories

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

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

3. Management of HIV infected HCWs

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

Either

- a) be on effective combination antiretroviral therapy (cART), **and**
- b) have a plasma viral load <200 copies/ml

Or

- c) be an elite controller²

And

- d) be subject to plasma viral load monitoring every three months **and**
- e) be under joint supervision of a consultant occupational physician and their treating physician, **and**
- f) be registered with the UKAP Occupational Health Monitoring Register (UKAP-OHR)

² 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

3.1 Initial health clearance for HIV infected HCWs who wish to perform EPPs

For HCWs wishing to perform EPPs, two Identified and Validated blood Sample (IVS) test results taken no less than three months³ 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 combination cART with undetectable viral load (below 200 copies/ml), one IVS at least 12 weeks since their last undetectable viral load is sufficient proof on which to grant clearance for conducting EPPs.

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 Appendix for contact details).

3.2 Viral load monitoring and ongoing clearance for HIV infected HCWs performing EPPs

HIV infected HCWs who are cleared to perform EPPs are subject to viral load testing every three months⁴ while continuing to perform such procedures. The three month period should be taken from the date the previous IVS⁵ 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

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

⁴ 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 OH monitoring purposes

⁵ 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, 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

being consistently below 200 copies/ml in at least two tests done no less than three months 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).

The table below sets out the expected course of action for viral load test results below and above the level for EPP clearance (200 copies/ ml).

Viral load count test result	Action
<50 copies/ml or below	No action – retest in three months
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 may 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 three months apart, was reduced to <200 copies/ml.
1000 copies/ml or above	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

	<p>consultant occupational physician and the treating physician on the significance of the result to the risk of HIV transmission.</p> <p>Following a risk assessment exercise, a Patient Notification Exercise (PNE) may be indicated⁶. UKAP advice may be sought at this stage.</p>
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3.3 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 quarterly 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 HCWs 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 three months) does not exceed 200 copies/ml.

3.4 Resuming EPPs

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 ie at least two viral loads below 200 copies/ml, no less than three months apart.

3.5 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

⁶ Guidance on performing a local risk assessment can be found at http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317133297795

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 three-monthly 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.

4. Occupational health monitoring arrangements for HIV infected HCWs

The model for allowing HIV infected HCWs 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 HIV infected HCWs who perform EPPs should have their viral load measured every three months using a blood IVS. 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 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 footnote⁵).

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 department to a central confidential register, the UKAP-Occupational Health Monitoring Register of Blood Borne Virus Infected HCWs (UKAP-OHR) (www.ukap-ohr.org.uk), managed by Public Health England (on behalf of Health Protection Scotland, Public Health Wales, and the Public Health Agency for Northern Ireland) and overseen by the UKAP. Each HCW must be recorded on the register by their designated consultant occupational physician. The ongoing viral load monitoring data will be updated by occupational health providers on a regular basis via a web-based data entry system. 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 will be securely and confidentially administered. Access to the individual records of the HCWs on the register will be strictly limited to the designated consultant occupational physicians responsible for the care, monitoring, management and EPP clearance of the HCW, and those who have delegated authority for this within occupational health, and to those few authorised individuals, 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 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 the Table below:

A. Health care worker
<p>Must be under the care of a designated consultant occupational physician Must accept that it is a condition of undertaking EPPs that they consent to ongoing monitoring while they continue to practise exposure-prone procedures, including:</p> <ul style="list-style-type: none"> 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 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 OH when they are changing their practice or their place of employment <p>Thus, HCWs must agree that by seeking to and undertaking EPPs, they are giving implied consent to i and ii above and they are undertaking to satisfy iii, iv and v as well.</p>
B. Consultant occupational physician
<p>The consultant occupational physician is responsible for the monitoring of the infected HCW including:</p> <ul style="list-style-type: none"> i. ensuring that the testing protocol and timings are followed ii. reacting promptly to any alerts received via 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. taking IVS samples, and ensuring samples are sent to laboratories; v. interpreting the viral load results in relation to clearance to perform EPPs vi. ensuring that the UKAP-OHR is updated in a timely manner vii. advising the HCW and the employer, on an ongoing basis, on whether the HCW is fit to perform EPPs viii. timely liaison with treating physicians
C. Treating physician
<p>The treating physician is responsible for:</p> <ul style="list-style-type: none"> i. the clinical management and support of the seropositive HCW ii. advising and maintaining timely communications with the consultant occupational physician responsible for monitoring the infected HCW

4.1 Testing arrangements

Laboratory testing should be undertaken by a Clinical Pathology Accreditation (UK) Limited accredited virology laboratory^{vii}.

The use of personal identifiers in requests for laboratory tests should 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 national UKAP-OHR.

Where coding is used, the occupational health physician, who maintains a full identity record, 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.

4.2 Breaks in monitoring

HIV infected HCWs who take a career break from performing EPPs may wish to continue three monthly 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.

4.3 Non-EPP HIV infected HCWs

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.

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

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.

5.1 Management of treatment failure or suboptimal treatment response

If there is any suggestion that the HCWs infection is no longer controlled by their antiretroviral treatment, the clinician overseeing their care may consider it appropriate that viral load tests are performed sooner than the next three month test.

A list of clinical experts who have agreed to provide advice to other treating physicians and consultant occupational physicians on the clinical management of HBV and HIV infected HCWs with breakthrough infection is maintained by the UKAP Secretariat (see Appendix for contact details).

6. Patient notification exercises

Patient notification exercises for patients who have undergone EPP by an untreated HIV infected HCW would take place according to current guidance on HIV infected HCWs⁷.

Patient notification exercises 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 the UKAP should be consulted for advice.

7. Management of patients following exposure to blood and body fluid of HIV infected HCW

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 continuous antiretroviral therapy and has a low and stable HIV viral load is likely to pose an extremely low risk of transmission.

In managing an incident in which an HIV 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 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 the patient tested at three months post PEP completion.

Appendix 1: Contacts

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Reference List

- (1) Ciesielski C, Marianos D, Ou CY, Dumbaugh R, Witte J, Berkelman R, et al. Transmission of human immunodeficiency virus in a dental practice. *Ann Int Med* 1992;116(10):798-805.
- (2) 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 Int Med* 1999;130:1-6.
- (3) 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.
- (4) 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. *Journal of Virology* 2000;74:2525-32.
- (5) The Expert Advisory Group on HIV and AIDS, the Advisory Group on Hepatitis, 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. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216126/dh_131574.pdf
- (6) Department of Health. Health clearance for tuberculosis, hepatitis B, hepatitis C and HIV: New healthcare workers. Department of health; 2007. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_074981.pdf
- (7) 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/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4116416.pdf
- (8) Department of Health. HIV post-exposure prophylaxis. guidance from the UK Chief Medical Officers' Expert Advisory Group on AIDS. 2008. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_089997.pdf