

IN BRIEF

- In 28 look backs undertaken in the UK (1988 – 2003), no detectable transmission of HIV from any infected health care worker to a patient has ever been demonstrated.
- Since the case of Dr Acer in 1990 no other instance of HIV transmission associated with the practice of dentistry has been recorded.
- Current treatments for HIV result in undetectable viral levels in the blood and significantly reduce its infectivity.
- Standard infection control protocols continue to be revised upwards and can prevent the transmission of bloodborne disease.
- It is time to review the current guidance that dentists with HIV must give up practice.

Written off

D. Croser¹

David Croser considers the appalling situation faced by UK dentists if they are diagnosed HIV positive.

It is almost a quarter of a century since the first cases of HIV were identified and the treatment of the disease has come a long way since then, as has the standard of cross infection control adopted by the dental profession. The use of barriers is a well recognised technique that works both ways; protecting the dentist from patients, and patients from the dentist. Unless, that is, you have HIV or are known to carry the hepatitis virus and want to work as a dentist in the UK, where dentists diagnosed with these conditions are not allowed to treat patients.

However, if a patient contracts HIV, HBV or HCV they can still request dental treatment. Indeed, that request is given particular protection by the General Dental Council (GDC) in *Standards for Dental Professionals*:¹

3.3 *'Do not discriminate against patients or groups of patients because of their sex, age, race, ethnic origin, nationality, special needs or disability, sexuality, health, lifestyle, beliefs or other irrelevant consideration.'*

¹The author served for twenty years as the clinical lead for a West London dental service dedicated to treating HIV patients. He currently advises Dental Protection Limited who have long-recognised the consequences of occupationally-acquired HIV for dental professionals and continue to lobby for public health policies to be based on evidence-based science.

Correspondence to: Mr David Croser
Email: david.croser@mps.org.uk

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Suddenly the barriers that are normally effective are no longer acceptable in the face of these bloodborne infections.

WHAT DOES SCIENCE TELL US?

For disease transmission to occur, a sufficient quantity of viable viral particles must be delivered to the new host. Although the transmission of bloodborne disease is theoretically possible during dental treatment, there is little evidence to show that this is the case or that dental patients are being infected. As far as HIV is concerned, the only dental case linked to transmission remains the Acer² case and even then the exact method of transmission was never determined.

Hepatitis is more transmissible than HIV (HBV 100 times more than HIV and HCV 80 times more)³ and there are recorded cases of this happening in a dental setting. Whatever the health status of the treatment provider, the prospect of cross infection from a dentist to a patient is clearly undesirable. But how often does such an event happen in reality and what are the risks of transmission?

In the USA, in addition to other standard infection control procedures, double gloving is adopted as a precaution by dentists with a bloodborne disease when they work on patients. Although both gloves may be punctured by an instrument, the risk of any blood seeping into a patient's mouth is markedly reduced if not totally eliminated. Whatever the reason, patients in the USA do not seem to have acquired HIV as a result of dental treatment by a dentist known to have

the disease. However, in the UK the same result is currently achieved by removing these clinicians from the workforce.

I am confining this article to the consideration of HIV and will exclude any discussion of other bloodborne pathogens (herpes viruses, prions, bacteria, fungi and parasites), save to observe that:

- vaccines and treatments exist to control and even eliminate hepatitis B. Healthcare workers in the UK can return to work once it has been demonstrated that the virus has been adequately controlled. The most recent report of HBV transmission in a dental setting is 1987.⁴
- Although there is no known cure for hepatitis C and the incidence of the disease within the profession is unknown, transmission of the virus by a dental procedure has never been demonstrated. There is a report of HCV transmission by a cardiac surgeon⁵ and in 2006 in Wales, a dentist with hepatitis C was asked to stop practice and a look back exercise was undertaken – the results are not yet available. Although limited, the data suggests that transmission of HCV from an infected provider to a patient is very low and the Welsh results will at least serve to improve our knowledge in this respect.

CASES OF HIV TRANSMISSION BY A DENTIST

There have only been two reports of confirmed provider transmission whilst undertaking exposure-prone procedures,

the one in the USA in 1990 involving dental work provided by Dr David Acer^{2,6} and an uncertain route of transmission, and one in France involving an orthopaedic surgeon in 1997.⁷ Since then the Centers for Disease Control and Prevention in Atlanta (CDC) published data on 22,579 patients treated by 66 healthcare workers (HCW) with HIV (but excluding Dr Acer) up to December 2000. There were 29 dentists and dental students within the HCW group that was studied. None of the HCWs could be implicated as the source of any patient infection that was present within the group of 22,579 patients examined.⁸

In the UK, there have been a number of look-back exercises. These involve testing patients who had received treatment from dentists subsequently found to be HIV positive. None of these exercises has ever shown transmission of this retrovirus from the clinician to the patient as a result of dental treatment.

Since the case of Dr Acer in 1990, no other instance of HIV transmission associated with the practice of dentistry has been recorded. Moreover, during the intervening years, the standard protocols for infection control have been revised upwards and medication is now widely available to control the infectivity of patients living with HIV (by reducing the viral load). In 1991 the CDC published guidelines confirming that mandatory testing and restriction of work procedures were not recommended for HCWs who were HIV positive, provided adherence to universal infection control was observed.⁹

This advice has not been updated since then, although the American Dental Association has now developed its own guidance: *'Current epidemiological evidence indicates that:*

- *there is no significant risk of contracting bloodborne disease through the provision of dental treatment when universal precautions and recommended infection control procedures are routinely followed*
- *the practice of universal precautions is an effective means of reducing blood contacts that can result in bloodborne disease transmission, minimizing even further the already low risk of transmission in the dental office.*¹⁰

The fact that no HBV transmission has been recorded in the USA since 1987

would seem to validate the effectiveness of universal precautions in both directions. With the *Infection control advice sheet A12* in the process of being rewritten, the BDA has a perfect opportunity to consider the validity of this data and to lobby accordingly.

The most recent review of HIV transmission in dentistry, published in September 2006, confirms the earlier data, does not describe any additional cases of dental transmission and concludes that *'HIV transmission in the dental care setting continues to be of concern, but is rare in the industrialized nations and can be significantly reduced or prevented by the use of standard infection control measures, appropriate and careful clinical and instrument-handling procedures, and the use of safety equipment and safety needles.'*¹¹

IN SPITE OF THIS

The current guidance from the United Kingdom Advisory Panel (UKAP)¹² advising on infected healthcare workers requires a cessation of almost all aspects of clinical practice as soon as the infection is diagnosed (preliminary diagnosis is available in 20 minutes using the OraQuick Advance saliva test).

There is no time to finish a course of treatment or to review the periodontal pockets for a patient whose oral hygiene was starting to improve. Nor is there time to rearrange the business loan that you are now only able to continue servicing if you had the foresight to take out permanent health insurance (or a critical illness policy) which provides for this possibility. You need a locum in a hurry.

PUBLIC PERCEPTION

Unfortunately the publicity surrounding the case of Dr Acer together with generally unbalanced media reporting of different issues relating to HIV over the last quarter of a century has left the public with the perception that HIV is extremely transmissible, particularly in a dental surgery setting. The BBC's *Panorama* programme about the risk of HIV transmission from the dental hand piece is an example of media reporting where emotion overshadowed the science.

The situation has been compounded in the UK by the inclination of PCTs to undertake look-back exercises when a practicing dentist in their area is diag-

nosed HIV positive. Apart from being extremely costly (at a time when government funds for healthcare are already unable to keep pace with demand) and unproductive (no transmission has ever been found), they can also be frightening for the patients involved. Sadly, the look-back also destroys trust in the dental profession generally as well as creating horrendous opprobrium locally for the practice involved.

It is very difficult to dispel unfounded fear and Government agencies, in the interests of maintaining calm, often respond with actions that with hindsight seem unnecessary at worst, or ill-judged at best. But that does not mean these decisions cannot be revised. Isn't it time for UKAP to revise its earlier guidance?

INVASIVE

Dentistry is defined as an exposure prone procedure (EPP). The definition is based on the operator's inability to see the end of any instrument that is in use at anytime during the procedure. Whether the vision is direct vision or in a mirror does not matter, but the presence of the other oral tissues and saliva in a confined space is currently interpreted by UKAP to mean that most procedures undertaken by dentists are 'exposure-prone' and therefore prohibited if the dentist is HIV positive. Although work modifications such as tissue retraction with a device can be adopted to abate this risk, the only exceptions to the present UKAP ruling are:

- examination using a mouth mirror only
- taking extra-oral radiographs
- visual and digital examination of the head and neck
- visual and digital examination of the edentulous mouth
- taking impressions of edentulous patients
- the construction and fitting of full dentures.

Dentists diagnosed HIV positive are required to stop their normal work immediately and to sacrifice six years or more of training and any future income from their chosen career in order to protect their patients. Where is the evidence base that supports the need for this?

When the UKAP panel was first introduced in 1997 the life expectancy of HIV patients was not at all favourable.

With the advent of the latest highly active antiretroviral therapy (HAART) the story is quite different and anyone infected with HIV can expect to live to a good age and to continue with a productive career (except for UK dentists). More importantly, the viral load (a measure of the number of viral particles carried in the blood) becomes undetectable as a result of the latest therapy, making the likelihood of disease transmission even more remote. Possibly the initial emotional decision to protect all patients at all costs should now be reviewed in the light of the experience from other developed countries; particularly when it comes to dentistry.

To sacrifice a dental career when there is already a workforce shortage in the UK seems an awful waste and extremely cruel to the individuals involved. There can also be significant financial implications for anyone who is suddenly obliged to retire from dentistry mid-career. The current response is discriminatory to infected healthcare workers and contrary to the spirit of human rights.

REFUSED TREATMENT

Is it not also possible that some of the continuing reluctance to treat HIV patients in the UK as reported by The National Aids Trust¹³ and the Terrence Higgins Trust¹⁴ could to some extent derive from an unspoken fear that the clinician is at risk of losing their livelihood if they contracted the disease whilst providing treatment? Accepting the risk of disease transmission is encouraged by our national regulatory body, the GDC, but possibly not all the registrants are equally enthusiastic.

IS IT LOGICAL?

The evidence should be reviewed again to assess the risk of HIV transmission when general dentistry is performed by a clinician with an undetectable viral load. Suspension of practice should not be based on a diagnosis in name alone, but on the actual evidence-based risk of transmission that is posed when the disease is controlled; thereby adopting a similar logic to the guidance for clinicians with HBV who undergo treatment.

Perhaps we should consider another section of the GDC guidance:¹

7.7 'If you believe that patients might be at risk because of your health, you should take action...' (for example,

...and ask the scientists to prove that stopping practice is still necessary for every HIV positive dentist currently on HAART?)

Even simpler than that; should not the UKAP definition of exposure-prone procedures be re-examined in the light of what dentists actually do and then be suitably rewritten? At the moment the definition applied to dentistry is the same as that for a cardiac surgeon working by touch in the invisible recesses of the body cavity:¹⁵

'Exposure prone procedures (EPPs) are those where there is a risk that injury to the worker may result in exposure of the patient's open tissues to the blood of the worker. These procedures include those where the worker's gloved hands may be in contact with sharp instruments, needle tips or sharp tissues (spicules of bone or teeth) inside a patient's open body cavity, wound or confined anatomical space where the hands or fingertips may not be completely visible at all times.'

WHAT HAVE OTHER COUNTRIES DONE?

In Canada, EPPs are defined as:³ 'Procedures where there is a risk that injury may result in the exposure of a patient's open tissues to the blood of the practitioner'.

Has that ever happened to you? Does it even sound like dentistry? No wonder then, that there is no equivalent of the restrictive UKAP protocol in Canada or in America for their dentists. It is left to the individual clinician to decide if there is any risk associated with the dental procedures that are proposed. The latest CDC guidelines for dental infection control,¹⁶ in the section headed 'worker restrictions', do not list HIV as a condition that requires work restrictions. The Canadian and American approach is much more in keeping with the ethos of the GDC's new Standards document,¹ but when it comes to dentists in this country, the UKAP computer still says 'No'.

In the 'New World' there are registered dentists living with HIV who are supporting themselves and their dependents from dentistry. The patients are happy and so are the dentists. There are some universal infection control precautions that have to be observed¹⁷ but these dentists continue to make a valuable contribution to society rather than being written off, as they are currently in the UK.

UKAP is an *ad hoc* committee that is convened as required and reports to

the Health Protection Agency. It should be free to make a scientific assessment of the risks, without any emotional or political considerations. In the light of our knowledge today can we really say that this is the case for UK dentists with HIV? I am not sure that our colleagues who have been written off would necessarily agree.

1. General Dental Council. *Standards for dental professionals*. London: GDC, 2006.
2. Ciesielski C A, Marianos D W, Schochetman G, Witte J J, Jaffe H W. The 1990 Florida dental investigation. The press and the science. *Ann Intern Med* 1994; **121**: 886-888.
3. Roth V, Worthington J. Implementing a policy for practitioners infected with blood-borne pathogens. *Healthc Q* 2005; **8 (Spec Iss)**: 45-48.
4. Centers for Disease Control and Prevention. Outbreak of hepatitis B associated with an oral surgeon - New Hampshire. *MMWR Morb Mortal Wkly Rep* 1987; **36**: 123-133.
5. Esteban J I, Gomez J, Martell M *et al*. Transmission of hepatitis C virus by a cardiac surgeon. *N Engl J Med* 1996; **334**: 555-560.
6. Brown D. The 1990 Florida dental investigation: theory and fact. *Ann Intern Med* 1996; **124**: 255-256.
7. Lot F, Seguier J C, Fegueur S *et al*. Probable transmission of HIV from an orthopedic surgeon to a patient in France. *Ann Intern Med* 1999; **130**: 1-6.
8. Robert L M, Chamberland M E, Cleveland J L *et al*. Investigations of patients of healthcare workers infected with HIV. The Centers for Disease Control and Prevention database. *Ann Intern Med* 1995; **122**: 653-657.
9. Centers for Disease Control and Prevention. *Recommendations for preventing transmission of Human Immunodeficiency Virus and Hepatitis B Virus to patients during exposure-prone invasive procedures*. Atlanta: CDC, 1991.
10. American Dental Association. *Policy statement on bloodborne pathogens, infection control and the practice of dentistry*. Chicago: ADA, 1999.
11. Scully C, Greenspan J S. Human immunodeficiency virus (HIV) transmission in dentistry. *J Dent Res* 2006; **85**: 794-800.
12. Department of Health. *HIV infected health care workers: guidance on management and patient notification*. London: DoH, 2005. http://195.33.102.76/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAMpGBrowsableDocument/fs/en?CONTENT_ID=4118230&MULTIPAGE_ID=5354083&tchk=dGfLm
13. The National Aids Trust website. <http://www.nat.org.uk/page/505>
14. Terrence Higgins Trust Policy Campaigns and Research Division. *Prejudice, discrimination and HIV. A report*. London: Terrence Higgins Trust, 2001. <http://www.tht.org.uk/information/resources/publications/policyreports/prejudicereport581.pdf>
15. Department of Health. *HIV infected health care workers: guidance on management and patient notification; Appendix A*; 28.7.05. London: DoH, 2005.
16. Kohn W G, Collins A S, Cleveland J L *et al*; Centers for Disease Control and Prevention. Guidelines for infection control in dental health-care settings - 2003. *MMWR Recomm Rep* 2003; **52(RR-17)**: 1-61.
17. Bednarsh H, Klein B. Legal issues for healthcare workers with bloodborne infectious disease. *Dent Clin N Am* 2003; **47**: 745-756.

Further reading

The most recent UKAP report (28 July 2005): http://195.33.102.76/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPAMpGBrowsableDocument/fs/en?CONTENT_ID=4118230&MULTIPAGE_ID=5354083&tchk=dGfLm