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# Dentistry and the ethics of infection

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## ABSTRACT

Currently, any dentist in the UK who is HIV-seropositive must stop treating patients. This is despite the fact that hepatitis B-infected dentists with a low viral load can continue to practise, and the fact that HIV is 100 times less infectious than hepatitis B. Dentists are obliged to treat HIV-positive patients, but are obliged not to treat any patients if they themselves are HIV-positive. Furthermore, prospective dental students are now screened for hepatitis B and C and HIV, and are not allowed to enrol on Bachelor of Dental Surgery degrees if they are infectious carriers of these diseases.

This paper will argue that: (i) the current restriction on HIV-positive dentists is unethical, and unfair; (ii) dentists are more likely to contract HIV from patients than vice versa, and this is not reflected by the current system; (iii) the screening of dental students for HIV is also unethical; (iv) the fact that dentists can continue to practise despite hepatitis B infection, but infected prospective students are denied matriculation, is unethical; and (v) that the current Department of Health protocols, as well as being intrinsically unfair, have further unethical effects, such as the waste of valuable resources on 'lookback' exercises and the even more damaging loss of present and future dentists. Regulation in this area seems to have been driven by institutional fear of public fear of infection, rather than any scientific evidence or ethical reasoning.

It is generally accepted that the professional obligations of dentists require them to treat patients infected with bloodborne viruses such as HIV and hepatitis B and C (HBV and HCV): "It is unethical for a dentist to refuse to treat a patient solely on the grounds that the person has a bloodborne virus or any other transmissible disease or infection."<sup>1,2</sup> However, any dentists who are diagnosed with HBV must refrain from treating patients, at least temporarily, and dentists with HIV or HCV face losing their livelihood.<sup>3,4</sup> Prospective dental students have been screened for HBV and HCV for several years, with recent Department of Health (DH) guidelines recommending that HIV also be included in screening.<sup>5</sup> Those who test positive will not normally be allowed to matriculate on Bachelor of Dental Surgery degree courses.<sup>5</sup> (It is worth noting that the guideline quoted above seems to go too far, as it would hardly be unethical for a dentist to refuse to treat a patient who had an infection such as Ebola.)

This paper will examine the justification for current DH guidelines, and identify inconsistencies in current protocols and practices. It will be argued that the current system treats both infected dentists and infected prospective dental students unfairly, and also disadvantages patients.

## INFECTED DENTISTS

Only about 10% of doctors work in "invasive" specialities,<sup>6</sup> but almost all dental interventions are classified as exposure-prone procedures (EPPs) by the DH.<sup>5</sup> Doctors are normally allowed to continue working with patients if they are diagnosed as HIV-positive, as they are not routinely involved in EPPs. Dentists, on the other hand, face the end of their careers if they are found to be infected: "Dentists diagnosed HIV positive are required [by DH protocol] 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."<sup>3</sup>

The question, though, is whether such restrictions actually do protect patients. There is very little evidence that there is any real risk of HIV transmission between a dentist and his patient when proper procedures are followed. Only one dentist has ever been confirmed to have infected patients with HIV. David Acer infected five patients in Florida in the late 1980s, and was very probably not taking all necessary precautions:

The transmission of HIV from David Acer to Kimberly Bergalis focused public concern on who transmitted HIV, not on how HIV was transmitted. What was feared was the person—a dentist, and by extension all physicians and other healthcare practitioners—not what a dentist did or do not do. Personalising HIV infection diverted attention from the particular techniques and behaviours that can spread infection to particular groups of people. Defining persons as the problem makes removing the persons the obvious solution.<sup>7</sup>

It is worth noting here that the American Dental Association states 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".<sup>8</sup> In fact, the risk of contracting HIV from a dentist is less than the risk of a fatal reaction to penicillin or a general anaesthetic: the risk of dying from the latter is 1/10 000, while the risk of catching HIV from a dentist is estimated at 1/200 000 to 1/2 000 000.<sup>9</sup> (Some have questioned whether the classification of most dental procedures as EPPs is really justified by the evidence: "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".<sup>3</sup>)

Although UK regulations prohibit HIV-positive dentists from continuing to practice, dentists infected with HBV are allowed to return to practice once their infection is under control. This might seem strange, given that "The risk of transmission of

HIV from a clinical care worker is approximately 100 times less than that of hepatitis B<sup>10</sup>. However, the reason that they are allowed to return to work is that “under control” implies that they are no longer carrying the virus in its transmissible form, having a viral load  $<10^3$  copies per ml; it has been argued that the same is not true of HIV, as viral undetectability does not necessarily indicate non-transmissibility.<sup>11</sup> But is it ethical to end dentists’ careers because they might be suppressed but transmissible and thus might transmit HIV to a patient, given that there is no evidence of transmission when suitable precautions are in place? (It has been argued<sup>10</sup> that HIV and HBV pose a similar overall risk because, despite being 100 times less deadly, HBV is 100 times as infectious as HIV, although it is far from clear that this is an accurate risk calculation.)

It certainly does not seem fair. As already mentioned, there is a vastly greater risk of dying from an anaesthetic than of catching HIV from a dentist. It is inconsistent to insist that HIV-negative dentists must treat HIV-positive patients, and at the same time insist that HIV-positive dentists cannot treat HIV-negative patients. It is true that dentists have a professional obligation that entails exposing themselves to more risk, and that patients do not have a similar obligation, but the fact of the matter is that dentists are at much more risk of catching HIV from patients than vice versa, as there are obviously far more HIV-infected patients than there are HIV-infected dentists. It is natural for patients to be afraid of catching HIV, but they should be reminded that HIV-negative dentists clearly believe that the precautions they take are sufficient to protect them from the risk of catching the virus from their patients, many of whom may have HIV (possibly without knowing it). And precautions, of course, work in both directions: if all recommended measures are taken, the risk of patient-dentist transmission is also vanishingly small.

A reasonable protocol would temporarily oblige a dentist to refrain from EPPs until his HIV infection was under control, as is the case for HBV. This would protect patients from any significant risk of infection and protect dentists’ livelihoods, and is already the modus operandi in North America (although policies vary from state to state in the USA)<sup>11</sup>: “In the USA and Canada, for example, HIV positive dentists can continue as normal once their viral levels are controlled and with the one additional proviso that they must adopt universal precautions and recommended infection control procedures”.<sup>4</sup>

A further question, however, is whether practising dentists should be obliged to tell their patients that they are infected. Some have argued that patients cannot give fully informed consent unless they are aware of all the risks that they run in undergoing treatment, and that however small the risk of HIV transmission, patients have a right to know if their dentist is HIV-positive. But as already mentioned, the risk of dying from penicillin or anaesthetic is higher, and (beyond checking for known allergies) clinicians do not routinely warn of these risks. This suggests that there are certain risks that patients do not need to be informed of before consenting, such as the risk of an earthquake shaking the dentist’s hand.<sup>7</sup> (There is also the point that patients would probably find a new dentist if their own was known to be HIV-positive, regardless of the lack of any real risk.) However, it might be objected that we are talking about two different types of risk. If a patient needs an anaesthetic, then that is what she needs; if a patient needs to see a dentist, she needs to run the risk of his hand shaking during an earthquake. But if a patient needs to see a dentist, she does not need to see an HIV-positive dentist.<sup>12</sup> Anaesthetics and earthquakes are necessary infinitesimal risks, while visiting an

HIV-positive dentist is an avoidable infinitesimal risk. My own belief, however, is that this distinction should be regarded as irrelevant, as both types of risk are infinitesimal, and patients should not be informed of their dentists’ HIV (or HBV or HCV) status. (There are other reasons for not telling patients; see “lookbacks” in the final section).

Another issue is that dentists are obliged to keep patient records confidential, yet when a dentist is diagnosed as HIV-positive, it is often regarded as being in the “public interest” to name him. Of course, it would be in the public interest to reveal if an HIV-positive doctor was not on antiretroviral medication and was exposing patients to the risk of transmission, but if the necessary precautions are being taken, the dentist’s status as a patient should be paramount, necessitating the confidentiality of his medical status.

### INFECTED DENTAL STUDENTS

As well as having to meet rigorous academic and personal criteria, prospective dental students in the UK are also screened for bloodborne viral infections. Several years ago there was a minor controversy about the introduction of screening for HBV for medical and dental students, with warnings that this was a draconian measure and the beginning of a slippery slope.<sup>6, 13</sup> These worries seem to have been justified, as the DH recently published new guidelines setting out additional checks that should be carried out on new healthcare workers, including students (dental students routinely carry out EPPs from their first year at university).<sup>5</sup> These guidelines add HIV to the list that already included HBV and HCV.

For new healthcare workers who will perform exposure-prone procedures (EPPs), additional health clearance should also be undertaken. Additional health clearance means being non-infectious for HIV (antibody negative), hepatitis B (surface antigen negative or, if positive, e-antigen negative with a viral load of  $10^5$  genome equivalents/ml or less) and hepatitis C (antibody negative or, if positive, negative for hepatitis C RNA). These checks should be completed before confirmation of an appointment to an EPP post, as the healthcare worker will be ineligible if found to be infectious.<sup>5</sup>

In practice, this means that any prospective dental student who does not satisfy these criteria will be refused entry to dental school: one school’s website states that “Those who are carriers of this infection will not be allowed to enter training unless they respond to treatment.”<sup>14</sup>

All 13 UK dental schools were contacted for this paper and asked to provide information about their screening procedures for prospective students. Of the four that responded, only one did not screen for HIV (although this policy is under review), and all screened for tuberculosis, HBV and HCV. All tests were carried out prior to matriculation, except at one school where HIV tests were introduced in 2007 and were given subsequent to matriculation. One HCV-positive result from one school was reported, but the student was allowed to matriculate after this was found to be a false positive. No schools reported incidences of students being rejected because of any infection.

Despite the apparently low number of students being rejected, it should be remembered that most dental schools advertise in their prospectuses the fact that screening is mandatory. Therefore, it is possible that many prospective students are discouraged from applying because they know that they will test positive and be denied permission to matriculate. Although the current system might seem to be an acceptable protection for patients, it is really an unethical practice, regardless of how many students are actually affected.

First of all, it hardly seems fair to deprive young adults of their chosen career simply because they have an infection that, if care is taken, need pose no risk to patients.<sup>14</sup> Secondly, many prospective dental students will only just have passed their 16<sup>th</sup> birthday; while adult dentists must take responsibility for avoiding these infections, any potential students who have contracted one of these infections can hardly be held responsible, as they were most probably children when the infection was contracted. And thirdly, it is quite possible that some prospective students will have been born with HIV. To exclude anyone who acquired HIV as a child or from their mother from becoming a dental student would be doubly unethical: they would be infected through no fault of their own, and there would be no reason why they could not practise safely. Just as qualified dentists should not be prohibited from practising if their HIV infection is under control, prospective dental students should be granted deferred matriculation, with the condition that their viral loads are fully suppressed before they begin the course.

There is another unethical facet of the current procedures. Qualified dentists can be afforded the time to get their HBV infection under control before returning to work, but those who are excluded from entry to dental school might not get another chance under the current system, due to the impracticalities of getting treatment in time for entry. (Of course, the point about having acquired the virus through no fault of their own also applies here.) There will also be those who continue to test positive for the surface antigen, possibly delaying entry for several years. Technically, the same criteria are applied to both qualified dentists and prospective students, but dentists have the opportunity to return to work if their infection is under control, while students will be denied entry until they do the same. It might be argued that it would be unfair to allow a student to begin training for a profession in which a future test might require them to stop practising, but it seems the more ethical alternative to allow prospective students to decide whether they want to take the risk. Given the possibility that prospective students who know they are infected are being discouraged from applying under the current system, it would seem fairer to change the advertised criteria and allow students the chance to get their HBV infection under control and then matriculate.

Finally, if the current unfair system is changed to allow HIV-positive dentists to practise, it will be a grave injustice if HIV-positive prospective dental students continue to be restricted from training to become dentists. If that happens, we will have a situation where people who suffer from a disease through no fault of their own are denied entry to a profession where people with that disease rightly continue to practise because there is no relevant risk of its transmission to patients. That would be triply unethical. New dental students should be told in advance that they will be given the chance to control any infection, whether hepatitis or HIV, that is discovered.<sup>15</sup>

### RELATED UNETHICAL EFFECTS

Quite apart from the aforementioned intrinsic unfairness, the current procedures also have related unethical effects. There are three main effects: the loss of good dentists, the squandering of resources, and the acquisition by the health service of worse-qualified dentists.

First, it is obvious that good dentists are being lost under the current system. Within 20 minutes of undergoing an HIV test, a dentist can have lost his livelihood.<sup>4</sup> More importantly, perhaps, the public has lost access to a good dentist. They may have to change practices, which might necessitate going private, given the current shortage of NHS dentists. This will also cause the

patients some distress, even assuming that they don't know that their dentist had to quit because he was HIV-positive.

This leads on to the second point. Losing one dentist is also losing a valuable resource, but informing patients of their former dentist's HIV-positive status can also lead to waste of resources. The climate of fear surrounding HIV, despite the lack of any scientific evidence, has led to costly "lookback" exercises which attempt to establish if there was any viral transmission to patients (although these are now rarer than in the past). This might make sense in terms of protecting against future litigation and reassuring patients, but the continuing use of NHS resources for such exercises when they have not produced one single case of HIV transmission from dentist to patient is questionable:

The guidance given by UKAP [the United Kingdom Advisory Panel for Healthcare Workers Infected with Bloodborne Viruses, which advises healthcare workers on how to implement DH policy] does not have a risk assessment which is safe legally and is completely open to legal challenge. The "lookback" exercises are costly both in monetary terms and psychological distress for patients. It is difficult to see how lookbacks achieve anything apart from assuaging supervising clinicians that they are doing something active and ensuring that they are adhering to UKAP guidelines.<sup>16</sup>

Of course, in the current climate of increasing criminalisation of HIV transmission, and given the widespread public belief that HIV is extremely easily transmitted, it is understandable that health authorities would want to maintain public trust. But it is not clear that lookbacks are the best way of doing this; educating the public about the extremely low risk might be a much more cost-effective measure.

Finally, in cases where prospective dental students are refused entry to a BDS degree, it is likely that (slightly) less well-qualified students will take their places. This is unlikely to make any significant difference to standards of care, but is another unfair effect of the current system.

### CONCLUSION

In conclusion, the current DH guidelines are unethical, and should be changed. Firstly, dentists diagnosed as HIV-positive should be allowed to return to practice once their viral loads reach undetectable levels. This would restore some equilibrium to the currently skewed balance of patient and dentist rights. Secondly, HIV-infected prospective dental students should be allowed to enter BDS courses, again with the proviso that their viral loads are undetectable (the same applies to students diagnosed during their studies). Thirdly, HBV-infected prospective students should also be offered delayed matriculation, on the condition that they undergo treatment and avoid EPPs until they are non-infectious. And finally, the implementation of these suggestions would save resources by obviating the wasteful loss of dentists from the NHS, reduce the need (if any exists) for lookback exercises, and ensure that the best-qualified candidates enter dental school. Patient perception of risk is not the same thing as scientific evidence of it, and should not be allowed to influence policies to the extent that they become unethical.

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