Blood-borne virus screening in health care workers: is it worthwhile?

In March 2007, England’s Department of Health finally published definitive guidance on health clearance for tuberculosis, hepatitis B, hepatitis C and HIV for new health care workers [1]. In summary, this new guidance recommends that all new health care workers have checks for tuberculosis disease and immunity and are offered hepatitis B immunization, with post-immunization testing of response, and offered tests for hepatitis C and HIV. This is termed ‘standard’ health clearance and is to be completed on appointment. ‘Additional’ health clearance, including confirmation of freedom from HIV, hepatitis B and hepatitis C infection, is required for new health care workers who will perform ‘exposure-prone procedures’ (EPPs), before confirmation of appointment to an EPP post. But is such large-scale screening justified by the risks it aims to mitigate?
This new guidance was published 4 years after the circulation of a draft for consultation [2], with some criticism from groups representing health care workers, at a time when higher profile health-related news items were dominating the headlines. The resistance from health care worker groups arises in part from the perception of testing being ‘compulsory’ for some groups, i.e. those involved in EPPs, and some disagreement about which groups are involved in EPPs.

Although this new guidance builds on and extends existing guidance [3–5] its implementation could mean increased workload and resource consumption for occupational health services and virology laboratories, delays in confirming appointments and service delivery and potential confusion and conflict for health care workers, occupational health services and human resources departments. The Department of Health does not allocate additional resources to facilitate the implementation of such guidance. However, an audit of the implementation of Department of Health guidance on hepatitis C infected health care workers in one region of England, found that 90% of occupational health departments reporting compliance with the guidance claimed not to have needed additional funding to do so. [6] The audit also found variation in the interpretation of the guidance, giving rise to inevitable inconsistencies between trusts.

The guidance claims not to intend to prevent those infected with blood-borne viruses from working in the National Health Service (NHS) but to restrict them from working in clinical areas where their infection poses a risk to patients. In defence of potential criticism that one-off testing is illogical, given health care workers’ ongoing risk of occupational exposure and infection, the guidance claims that the need for repeat testing is obviated by professional codes of practice that require health care workers to promptly seek and follow confidential professional advice about the need to be tested if they have reason to believe they may have been exposed to or be infected with a serious communicable disease. However, it could be argued that such professional obligations should obviate the need for routine screening altogether. Regular (or continuous) testing for everyone involved in EPPs might be an ideal way to protect patients but impractical considering the capacity that would be required to deliver it.

Patient notification exercises, undertaken when a health care worker who has been involved in EPPs is found to be infected with a blood-borne virus, are relatively rare, but extremely resource intensive and a source of public concern, tending to attract a great deal of media attention. Any reduction in the need for patient notification exercises may therefore be claimed to justify the use of resources required for large-scale routine screening of health care workers. This is one of three issues that the Department of Health claims prompted the decision to introduce the guidance.

Another driver was the recruitment of NHS staff from overseas, who has subsequently found to be infected with blood-borne viruses. This is a politically sensitive and potentially discriminatory issue. In practice, the recruitment of overseas health care workers and students is probably a dynamic variable, depending on political situations in the overseas countries, prevailing UK immigration policies and the availability (or otherwise) of training opportunities in the UK.

A potential benefit for those being tested at the start of a career is the opportunity to access treatment at an early stage, rather than waiting until infection becomes clinically manifest. Treatment can successfully eradicate or suppress hepatitis C and hepatitis B infection, enabling a career that involves EPPs if desired. For those infected with HIV, or where hepatitis B or C cannot be successfully suppressed and eradicated, it allows informed career choices at a stage when flexibility is possible, if disappointing. New entrants to the health service may come from countries with a high prevalence of HIV. The diagnosis of HIV infection enables steps to minimize the risk from exposure to opportunistic infections and avoid BCG vaccination.

However, apart from the risks of pre-existing infection in overseas health care workers and students and the risks of occupational infection, there are few reasons for believing that health care workers are at greater risk of infection than others, so this in itself cannot be a justification for screening.

The pre-test discussion about risks, routes of infection and implications of test results that should accompany blood-borne virus screening might help to raise awareness about the risks of exposure and transmission of infections both occupationally and non-occupationally and ways to reduce them. However, it could be said that health care workers should already be better informed than others about these risks and therefore less in need of education about them.

The Health Protection Agency estimates that around one-third of HIV infections in the UK are undiagnosed [7]. It is likely that stigma, ignorance and fear contribute to this. A possible indirect benefit from routine testing in health care workers could be greater acceptance of testing for blood-borne virus infections such as HIV generally, thereby reducing some of the stigma that has always surrounded it. It has been common practice to ensure pre-test discussion or counselling and consent for HIV testing and some practitioners insist on written consent. Some occupational health departments use codes to preserve the anonymity of health care workers being tested for HIV, for example following an exposure incident. While this is laudable and understandable to a degree, such precautions should ideally apply to all diagnostic tests and not just to HIV testing.

It is often said that the risk of occupational transmission of blood-borne virus infection is much greater for
health care workers than for patients. Data for transmissions either way appear to support this, but suffer from the limitation of under-reporting [8,9]. Eleven UK health care workers are known to have acquired hepatitis C occupationally in the last decade; six cases being reported within 2 years [9]. Given the UK population prevalence of hepatitis C infection [10], its long latency, the frequency of sharps injuries in the context of surgical procedures and estimated transmission rates for hepatitis C, it is likely that there are many more unrecognized cases of occupational hepatitis C transmission. If this is the case, it could be argued that directing resources at efforts to reduce the risks of health care workers becoming infected might be more cost-effective. This would depend to some extent on the principle mechanisms by which health care workers acquire blood-borne virus infections. Such measures might include training and education in safe systems of work, such as standard precautions, use of personal protective equipment such as gloves and eye protection, disposal of sharps at the point of use and the availability and use of medical devices incorporating sharps prevention mechanisms.

Rather than creating a dichotomy between the risks to health care workers and the risks to patients, it might be more helpful to consider a dynamic model of the transmission of infection through the delivery of health care. In some contexts, for example during EPPs, there are very real risks of transmission of infection in either or both directions. It is perhaps in this context that it is particularly important for exposure incidents to be reported and appropriately managed, but some studies suggest that exposure incidents occurring in operating theatres are the least likely to be reported [11]. Perhaps by considering the risks for patients and for health care workers together, it may be possible to drive the culture shift that is needed to ensure that infection prevention and control is taken seriously by all who can contribute to tackling it.

Measures to minimize risk must be practical and proportional to the level of risk, acknowledging the interests of those being tested, those doing the testing and those whom the testing aims to protect. Testing only ‘new entrants’ to the health service, rather than everyone involved in exposure prone procedures, does have a logical, if limited rationale behind it. It is a compromise and there are trade-offs to be acknowledged. It will not prevent all blood-borne virus transmissions, at least in the short term, but it is a step towards risk reduction for patients in the longer term. The Department of Health’s guidance may be a balanced and pragmatic approach to a complex and dynamic issue, but not a perfect solution. It will need monitoring and review.

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References