

Decontamination, single-use instruments and vCJD

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Since the emergence of human immunodeficiency virus and acquired immunodeficiency syndrome, universal precautions have been advocated for cross-infection control procedures within dental practices. The bovine spongiform encephalopathy outbreak in the UK in the late 1980s and the related variant Creutzfeldt Jakob disease (vCJD) has provided cross-infection controls with a new challenge: the abnormal form of

the prion protein responsible for these diseases is less susceptible to denaturation by heat than bacteria and viruses.

Previous risk assessments conducted for the Department of Health^{1,2} raised the theoretical possibility of transmission of spongiform encephalopathies in dentistry but concluded that the risk was low. In 2006, the Spongiform Encephalopathy Advisory Committee (SEAC) issued a posi-

tion statement on vCJD and endodontics (see www.seac.gov.uk/statements/statement0506.htm) concluding, "It is unclear whether or not vCJD infectivity can be transmitted via endodontic files and reamers. However, given the plausibility of such a scenario and the large number of procedures carried out annually, it would be prudent to consider restricting these instruments to single use as a precaution-

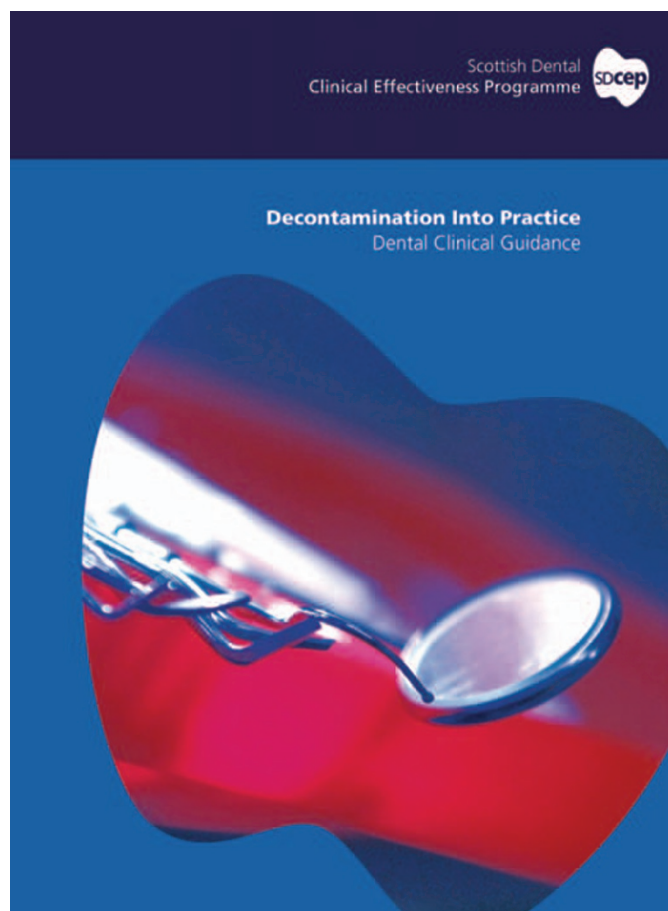


Figure 1. Decontamination into Practice — series cover

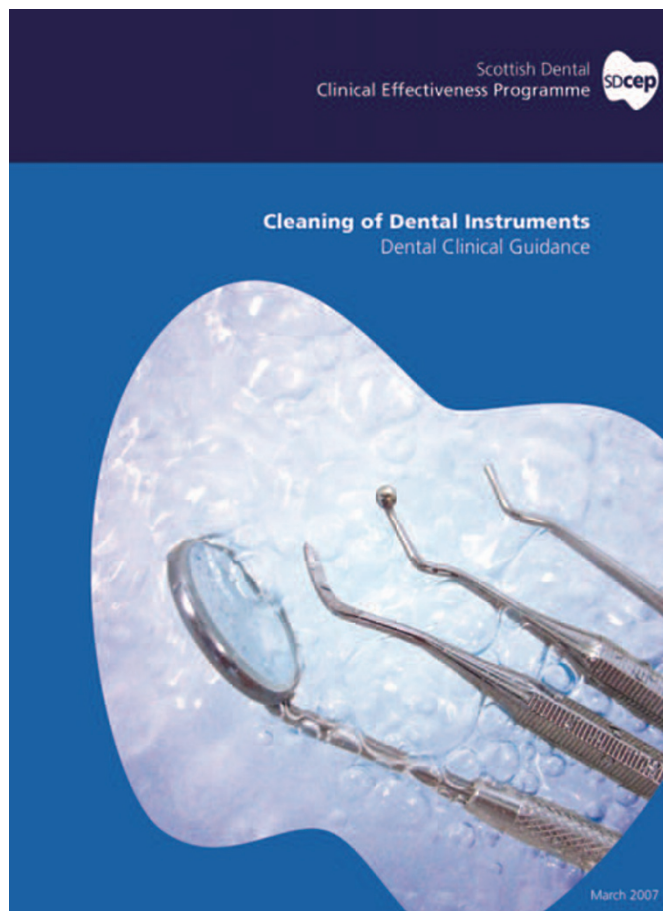


Figure 2. Cleaning of Dental Instruments — cover

ary measure. Since sufficiently rigorous decontamination of these instruments is difficult, single use of these instruments would eliminate this risk, should it exist."

The Chief Dental Officers in the UK recently issued new, more robust guidance on the single use of endodontic files and reamers. This advice was based on preliminary results from research being undertaken for SEAC using an animal model. Although this research is yet to be completed, it was considered by SEAC at their May 2007 meeting, a summary of which is available (www.seac.gov.uk/summaries/seac97_summary.pdf). The summary states that, "research suggested that there may be a significant risk that vCJD can be transmitted via some dental procedures in man, although the level of risk remains difficult to quantify. The committee welcomed the Chief Dental Officers' recent guidance to dentists who were advised to ensure that all dental files and reamers were treated as single use, but sought reassurance that compliance in both private and NHS practice would be closely monitored. SEAC considered it important that a comprehensive assessment of the potential risks of vCJD transmission from all dental procedures be conducted as a priority. This could allow possible additional precautionary measures to be identified. SEAC agreed to publish a position statement in the near future."

Even though there are no known or suspected cases of vCJD transmission arising from dental procedures (there are, however, three instances of probable transmission of vCJD infection via blood transfusion),³ a precautionary approach is justified for a number of reasons. First, vCJD is a fatal neurodegenerative condition. We also have evidence from a number of studies which indicates that the cleaning of instruments (in

particular endodontic instruments) prior to sterilisation is far from ideal.⁴⁻⁶ Meanwhile, there are large numbers of root canal procedures carried out every day, and we do not know what proportion of the population carries the infection: estimates range from 1 in 1400 to 1 in 20 000 people.

In parallel with the advice to dentists in England regarding vCJD, the Department of Health decided not to endorse the new version of the British Dental Association's Advice Sheet A12, "Infection Control in Dentistry", which was scheduled to be published in May.

In Scotland, new guidance has been published on the cleaning of dental instruments (www.scottishdental.org/cep/guidance/decontamination.htm; Figures 1 and 2). Produced by the Scottish Dental Clinical Effectiveness Programme (SDCEP), this is the group's second guidance document (which follows clear protocols for developing its guidance) and the first in its series, "Decontamination into Practice". The document has been developed through consultation with Health Protection Scotland Decontamination Team (www.hps.scot.nhs.uk/), other experts and end-users, based on a range of existing guidance documents. The guidance has been developed to provide advice not only to clinical dental professionals but also to the members of the dental team directly involved in carrying out decontamination in the practice. In Scotland, practitioners are expected to achieve compliance with the Glennie Technical Requirements for Decontamination in Primary Care Settings by the end of 2009 (www.scottishdental.org/docs/HDL2006.pdf).

The Glennie Group was established to review sterile services provisions following the emergence of vCJD. The SDCEP

guidance presents advice on organising and carrying out decontamination based on these sources of information, in a manner that aims to facilitate the evolution towards Glennie compliance. It can be downloaded from www.scottishdental.org/cep/guidance/decontamination.htm. With the delay in the release of the update to British Dental Association's Advice Sheet A12, this guidance represents an up-to-date perspective on the cleaning of dental instruments.

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3. Hewitt PE, Llewelyn CA, Mackenzie J, Will RG. Creutzfeldt-Jakob disease and blood transfusion: results of the UK Transfusion Medicine Epidemiological Review study. *Vox Sang* 2006; 91:221-230.
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