Cross-infection and the ‘cost of illness’
The evidence summary is based on the original summary published in the BDJ (July 2010). It summarises the ‘cost of illness’ evidence covering cross-infection related infections in dental practice. It does not include detailed descriptions of the studies cited nor does it include information that was not presented in the literature.

The Curious about website encourages dental professionals to raise issues where a review of the available evidence would provide a useful resource for other dental professionals. Where there is a lack of evidence, the topic is considered for research and an award is made available.

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Key finding

- No work on the epidemiological scale of cross-infection caused in dental practices or of the cost impact of cross-infection seems to exist. As a result no cost of illness or cost benefit assessment exists or can be carried out.

Review question

This evidence summary was prepared in response to the following question: What ‘cost of illness’ evidence is there about cross-infection related infections in dental practice?

To address this question, two sub-questions were posed:

- What epidemiological evidence is there covering cross-infection related infections caused in dental practices?
- What is the total cost of cross-infection related infections caused in dental practices?

Key terms

Decontamination: Processes including cleaning, disinfection, inspection and sterilisation to render reusable surgical instruments safe for further use.

Epidemiological evidence: Determination of causes, incidence and characteristic behaviour of disease outbreaks affecting human populations.

Cross-infection related dental infections: Any infection which a patient contracts in a dental practice.

Total cost The healthcare impact cost of cases of cross-infection from dental practices.

Cost of illness The value of the resources expended or foregone as a result of a health problem. The cost of illness includes health sector costs (direct costs), the value of lost productivity by the patient (indirect cost), and the cost of pain and suffering (intangible costs).2

The case for action

Decontamination of re-usable dental instruments aims to make them safe and minimise the risk of cross-infection between patients and between patients and staff.3 While scientific understanding of infection control has grown with the emergence of new theoretical and actual risks, for example HIV, TB and prion proteins in vCJD,4,5,6 the nature, application and compliance with decontamination, and other dental infection control processes, are on-going areas of practice related research.

Primary dental care practices are required to deliver decontamination processes as detailed in HTM 01-05.7,8 This is designed for the whole dental team and aims to progressively raise the quality of surgical instrument decontamination by supporting a programme of continuous improvement. Baseline audit data for the quality of instrument decontamination in primary care dental practices was collected through the Dental National Decontamination Survey (2010)9,10 and from 2011 these processes will be regulated by the Care Quality Commission (CQC).11 However data on cross-infection incidence and costs associated with respective aspects of guidance compliance is not collected.

Weighing the expected costs against the expected benefits to primary dental practice for complying with the decontamination guidance12,13 raises questions of how much of a problem cross-infection is in dentistry.
The evidence

What epidemiological evidence is there about cross-infection related infections caused within dental practices?

No studies describing the incidence of cross-infection related infections caused within UK dental practices were found. Consequently the scale of cross-infection related infections that dental decontamination processes aim to address cannot be quantified. Data is available for hospital acquired infections - 273,000 non-fatal infections and 4,550 deaths (an estimated 9 per cent of inpatients) per year.\(^{(14)}\)

What is the total cost of cross-infection related infections caused in dental practices?

With the lack of evidence relating to cross-infections caused in UK primary dental practices, or on the severity of such infections, it is not possible to estimate their cost impact. No data is available to provide insight into the potential savings in terms of the number of dental practice related cross-infections avoided by compliance with infection control guidance.

Related data,\(^{(13)}\) attempting to quantify the costs of implementing recommended infection control procedures for private practices in Australia estimates the annual amount for recommended compliance as AUS22,461 per dentist plus AUS1,912 per practice (1994 SAUS). This figure, published in 1995, covered loss of billable revenue, disposables, equipment, waste management and nurse time for sterilisation procedures.

Methods

Search strategy

The following resources were searched:

- Ovid MEDLINE (limited to 1999-2010 and UK)
- NHS Economic Evaluation Database
- Centre for Evidence Based Dentistry
- Cochrane Oral Health Group
- Centre for Reviews and Dissemination
- American Dental Association
- TRIP
- Database of Abstracts of Reviews of Effects.

Search terms for Ovid MEDLINE were: decontamination/sterilisation; dentistry; dental economics; cost-benefit analysis. Search terms for the NHS Economic Evaluation Database were cross-infection; infection control; infection and dental; contamination and instruments; and decontamination.

The Department of Health graded references for HTM 01-05 were consulted and the National Patient Safety Agency was contacted. Contact was also initiated with the Department of Health Dental National Decontamination Survey team.

Original searches were current as of March 2010. Searches were repeated in August 2012, May 2013 and February 2015.

Results

No relevant publications were found.

References


