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Blood borne virus testing of 2250 patients in an unusual, repeated dental patient notification exercise: challenges faced and lessons learnt

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ABSTRACT

Objectives: The objectives of this study were to ascertain the risk created for patients of two dental practices where infection control was found to be inadequate, and if the risk was deemed to be significant, initiate an investigation involving notification and blood borne virus (BBV) testing to establish if any patient-to-patient BBV transmissions had occurred as a result of these infection control breaches.

Study design: A case study.

Methods: A public health investigation and patient notification. Investigations involved practice inspections, staff interviews and examination of invoices. The practices were not fully cooperative during the investigation and provided misleading information regarding the allegations. This led to two patient notification exercises, as more serious breaches were uncovered following the first notification exercise. Risk assessments of BBV transmission likelihood were undertaken and informed the nature of the advice given to patients.

Results: The health board wrote to 5100 patients informing them of the situation. BBV testing was offered in the second notification exercise and 2250 patients opted to be tested for HIV, hepatitis B and hepatitis C. There were no new cases of HIV or hepatitis B but less than five patients were found to be positive for hepatitis C. None of these cases were proven to have contracted their infection as a result of the dental infection control lapses.

Conclusions: This incident was unusual in that the practice was found to be repeatedly and knowingly putting patients at risk, and attempts were made to cover up breaches during the investigation. In future, health boards would benefit from a risk assessment tool to aid decision making regarding notification exercises, and whether testing is indicated where risk to patients is low. This would help ensure that notification exercises do more good than harm.

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Introduction

Maintaining consistently high standards of infection prevention and control is vital in dentistry, as failure to do so results in the risk of patient-to-patient transmission of blood borne viruses (BBVs), such as hepatitis B, hepatitis C and HIV. There have been instances of such transmission outwith the UK.^{1,2} In Scotland there are several pieces of legislation to which dentists and dental practices must adhere, including the Consumer Protection Act (85/37/374/EEC)³ and the Medical Devices Directive (93/42/EEC).⁴ 'The National Health Service (General Dental Services; Scotland) Regulations 2010' state that the dentist 'shall provide proper, sufficient and safe premises, equipment, instruments and procedures'.⁵ To support Scottish dentists in complying with the requirements, guidance has been published by the Scottish Dental Clinical Effectiveness Programme.⁶ A key infection control document is 'Decontamination into Practice' with three parts; part 1 Cleaning of Dental Instruments (2007), part 2 Sterilisation of Dental Instruments (2011) and part 3 Management of Decontamination in Dental Practice (2014). Equivalent guidance has been produced for dentists elsewhere in the UK by the Department of Health,⁷ though it is important to note that there are some differences, specifically in relation to the sterilisation and re-use of certain dental devices such as endodontic files and matrix bands, which is not acceptable in Scotland. Compliance in Scotland is monitored through Combined Practice Inspections, carried out by National Health Service (NHS) boards on a three yearly basis with inspectors ensuring standards are met, using a checklist of approximately 300 essential items.⁸ Up until 1st April 2016, these inspections were preannounced. Prior to 2016, health boards had no powers to conduct unannounced inspections where there were significant concerns about a practice.

Infection control breaches can come in various forms, from the steam steriliser failing to reach adequate temperatures during its cycle (a mechanical error), to the failure to process dental instruments through the decontamination cycle at all (a human error). Breaches are not always erroneous. When incidents of poor infection control come to light, the allegations should be investigated and the risk to patients assessed. This will inform any control measures required to protect patients from infection, and can be an opportunity for learning and improvement. While there is no specific guidance to support the public health management of dental incidents specifically, guidance describing the generic organisational arrangements for managing public health incidents and the roles and responsibilities of Incident Management Teams (IMTs) is available in Scotland. The guidance is entitled, 'Management of Public Health Incidents, Guidance on the Roles and Responsibilities of NHS led Incident Management Teams (updated 2013)'. When managing such situations, the results of previous patient notification exercises undertaken in the UK following infection control breaches in the dental setting can prove very informative. To date, such exercises have provided no evidence of BBV transmission between patients tested due to poor infection prevention and control practices in a UK dental setting.^{9–12} Infection

transmission cannot be completely ruled out, as no more than half of 'at risk' patients have been tested in any previous exercise. It has been argued by some authors that patient notification is not usually justified when risk of transmission is low.¹³ However, Blatchford et al. argue that it could be deemed paternalistic to decide whether notification is in the patients' best interest without consulting patients first.¹⁴

In September 2013, NHS Ayrshire and Arran's Health Protection Team received allegations that infection prevention and control procedures were being seriously breached in two local dental surgeries (both part of the same dental practice). The reported breaches involved re-use of gloves between patients, re-use of single-use matrix bands and incomplete processing of aspirators tips. An IMT was established, chaired by the consultant in public health to investigate, assess any risk to patients and recommend suitable control measures. In response to the resulting patient notification exercise, more serious allegations emerged, which led to a second notification exercise. This paper describes the public health management of the incident, and presents the challenges faced and lessons learnt from the investigation and the ensuing patient notification exercises.

Methods—exercise 1

Initial investigation to confirm or refute the allegations

An IMT was created to investigate the allegations and manage the incident. It was chaired by a consultant in public health and included NHS health protection specialists, a blood borne virus epidemiologist, consultant microbiologist, NHS dental manager and clinical lead for dentistry, infection control manager and nurse, NHS communications staff and specialists from Health Protection Scotland. The Head of Primary Care and/or Associate Medical Director for Primary Care often attended, particularly when issues around governance of the practices and patient care were discussed.

The dentist was asked to cooperate with the investigation and allow an inspection of the practice. This request was accompanied by information regarding the nature of the three allegations that had been made. The dentist agreed but delayed the practice inspections by a week. The health board had no powers to conduct an immediate, unannounced inspection. In the interim period, the health board had neither the power nor considered it appropriate to enforce temporary closure on unsubstantiated allegations. However, the dentist agreed to close on a voluntary basis.

Two simultaneous inspection visits, by two separate teams experienced in infection prevention and control standards, were undertaken. Information on infection control practices was obtained directly from interviewing all dental staff. An infection prevention and control inspection was undertaken in line with current requirements for dental practices.

The inspection teams established that most practice staff had not undergone any infection prevention and control training. When asked about practices surrounding the three allegations, staff denied that these breaches were occurring and were consistent in their responses. However, basic

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