

Disinfection methods in general practice and health authority clinics: a telephone survey

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SUMMARY. Concern about the epidemic of the acquired immune deficiency syndrome led to discussions in one health district about the dangers of cross-infection from instruments in general practice and health authority clinics. In order to establish what current disinfection practices were in use a telephone survey was adopted as a quick and easy method of data collection. Information was collected on who was responsible for disinfection as well as details of how each instrument was disinfected. Results from 69 general practices and 21 health authority clinics in one health district are reported.

Some form of sterilizer was used in 63 general practices. These included water boilers (49%), dry heat sterilizers (41%), autoclaves (5%) and pressure cookers (5%). Sixty one practices were using metal vaginal specula and of these 29 were disinfecting by boiling, three were using pressure cookers, 18 dry heat, seven chemical methods, three autoclaves and one the central sterile department of the local hospital. Of those who were boiling after simple washing, three practices boiled for five to 10 minutes and reused instruments during the same clinic. Of the 29 using simple boiling 20 (69%) were boiling for less than 20 minutes.

The study highlights the fact that no formal advice has been given on disinfection practice by the DHSS, the health authorities or the family practitioner committees. The need to set up local guidelines and develop practical steps for their introduction are discussed.

Introduction

FOR some medical procedures general practitioners use sterile instruments while for others it is assumed that disinfection will be sufficient to prevent cross-infection. Nevertheless we now know that a number of organisms are relatively resistant to routine attempts at disinfection (for example, human papillomavirus, herpes simplex virus and hepatitis virus). Recent publications, mainly from the hospital field, have focussed on a large number of diagnostic practices and medical treatments where cross-infection appears to have occurred.¹⁻⁹ Springthorpe and colleagues have been among the few authors who have questioned the effectiveness of disinfection practice. They tested commercial disinfectants against human rotaviruses and found that 48% were ineffective in the presence of additional organic matter and 20% totally ineffective.¹⁰

The arrival of the epidemic of human immunodeficiency virus (HIV) has raised new questions about the adequacy of existing procedures, particularly in the field of dentistry. A booklet,

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AIDS, on sterile procedures and sterilization practices was issued to all dentists in 1986 by the Department of Health and Social Security and in September 1987 *Dentist* published a comprehensive guide to cross-infection control¹¹ which made it possible for individual dentists to consider the costs and benefits of improving their existing practices. No comparable guidance has been given to general medical practitioners apart from the occasional article on the subject of equipment disinfection. Hoffman advocated heat sterilization as the method of choice and raised the question whether autoclaves might be necessary in every practice sometime in the future.¹² The involvement of doctors in cross-infection has recently been discussed by the British Medical Association. The risks of patient-doctor, doctor-patient and patient-patient cross-infection are all of potential importance. The study reported here was not an attempt to ascertain whether cross-infection had occurred but rather to assess the potential risks for such infection in relation to the different instruments used in general practice and in health authority clinics.

A quick and simple survey was used to encourage maximum participation and to accelerate the process of discussions and drawing up guidelines towards improving disinfection practice in the district.

Method

In October 1986 the family practitioner committee in a south Wales health district provided a list of general practitioners and their telephone numbers. The telephone survey began in October 1987 and an attempt was made to obtain information from the senior partner in each practice or, failing that, from the next available doctor. In four of the 79 registered independent practices the telephone number was unobtainable or the general practitioner was no longer practising at that address. Attempts were made to contact the remaining 75 practices by telephoning on up to three occasions. Discussions took place with 70 practices and one of these declined to give the information requested. Results are presented from 69 of the 75 practices (92%).

The purpose of the survey was explained and permission was obtained to talk to the practice nurse or person responsible for disinfecting the instruments. A set of questions was asked about the actual method of disinfection used, including the type of machine, who was responsible, what procedures were adopted and for how long for each instrument. Information was obtained in the same way from 21 health authority clinics and was provided by the nurse in charge of the clinic. The average time spent in obtaining the information was 10 minutes (range from four to 17 minutes).

What people say they do may well reflect what they think they ought to do and we have inferred from the answers that the reported methods are those that general practitioners and those working in clinics consider the most appropriate for their practice setting. No attempt has been made to validate the results.

Results

General practitioners

The responsibility for disinfection was taken by the practice nurse in 39 of the 69 practices (57%), by the receptionist in 12 (17%), by the general practitioners themselves in a further 12 practices and by the district nurse in six (9%). Eight practices (12%)

were using central sterile department facilities at the local hospital although they all had their own sterilizer and did not depend on this service alone. Six practices (9%) did not have conventional sterilizers and reported that they either used disposable instruments or were using chemical methods of disinfection. Of the 63 using some form of sterilizer, water boilers were used by 31 (49% of practices), dry heat sterilizers by 26 (41%), autoclaves by three and pressure cookers by three.

The specific methods used to disinfect various instruments are presented below.

Proctoscopes. These were used by 34 practices (49%) and in 24 of these the proctoscopes were disposable. Of the 10 practices re-using metal instruments, three used an autoclave, six boiled them for times ranging from six to 20 minutes and one washed the proctoscope with water after use.

Vaginal specula. These were used by all practices, most commonly during cervical cytology clinics. Forty practices used only metal specula (58%), eight (12%) only disposable and in 21 practices (30%) both metal and disposable specula were used.

The chief methods of disinfecting specula were boiling, the use of dry heat and chemicals. Among the 32 practices (46%) who were boiling specula, three used pressure cookers, 16 boiled after simple washing and 13 boiled after soaking in chemicals. Those using pressure cookers were boiling at 15 lb pressure for 30 to 50 minutes. Of those who were boiling after simple washing three practices boiled for five to 10 minutes and re-used instruments during the same clinic. Among those using chemicals prior to boiling the most commonly used chemical was chlorhexidine. Three of these practices re-used metal specula during the same clinic. The boiling times for the 29 practices using these simple boiling methods were as follows: less than five minutes — three practices; six to 10 minutes — four; 11 to 20 minutes — 13; 21 to 29 minutes — 0; 30+ minutes — eight; not timed — one.

Dry heat was used by 18 practices, 13 of which first used chemicals. The temperature maintained during sterilization was at least 150 °C and the time varied from 10 to 120 minutes.

Seven practices (10%) were using only chemical methods, which included chlorhexidine gluconate solution (Hibitane, ICI), chlorhexidine gluconate solution with cetrimide (Savlon hospital concentrate, ICI), bleach, surgical spirit and glutaraldehyde solution. The time for treatment varied from 10 minutes in Hibitane or glutaraldehyde solution to 180 minutes in Savlon.

Three practices were using autoclaves and one was using the central sterile department of the local hospital.

Auroscope earpieces. Chemicals, most commonly chlorhexidine, were used by 45 practices. Nine boiled the earpieces for five to 20 minutes and 15 wiped the earpiece with a dry swab or cotton wool.

Tonometers. These were used by only two practices and both of them used chlorhexidine for disinfection.

Thermometers. Most practices had no formal method of disinfection of thermometers with 11 (16%) using chemicals.

All practices used disposable tongue depressors, syringes and needles.

Health authority clinics

In relation to the disinfection of vaginal specula, central sterile department services were used exclusively by eight of the 21 clinics. Four were using only disposable specula and a further four were using only boilers. In addition two were using both hospital central facilities and disposable specula and a further

three both disposable specula and boilers. Of the seven who were using boilers three were boiling for more than 30 minutes and four for 20 to 25 minutes. All these clinics soaked the instruments in Savlon after use.

Discussion

The survey shows there is great variation in the methods used for disinfecting equipment by general practitioners and health authority clinics and in the extent to which they use disposable instruments. This is not surprising considering the lack of guidance on methods of disinfection — a fact which was commented on by a number of practice nurses who were clearly unhappy with the methods being used. Discussions are now taking place with virologists and a small group of general practitioners on the local medical committee to develop a set of guidelines on disinfection practice. The survey itself seemed to provide a stimulus for many subsequent enquiries to the district virologist as to the best method of disinfection in particular circumstances. Advice to individuals has been along the following lines: that all instruments should be scrupulously cleaned of all blood, tissues and human secretions; and that instruments such as metal specula should be boiled for 30 minutes. Although temperatures and times were given for dry heat disinfection, this method and chemical methods were not generally supported.

The question of which instrument might carry the greatest potential threat of cross-infection emerged during the course of the study. The use of laryngoscopes and tonometers was rare. Auroscopes and thermometers on the other hand were used by every practice and the disinfection methods used could best be described as primitive. Vaginal specula were used in all and proctoscopes in many practices. In a number of practices metal instruments were being used during the same clinic after periods of boiling of as little as five to 10 minutes. In general the length of time for boiling instruments was too short. The seven practices using chemical methods were also thought to be providing inadequate disinfection. In view of the questions that are now being raised about the persistence of some viruses, in particular the human papillomavirus, it would seem prudent to improve disinfection particularly of vaginal specula and of proctoscopes to eliminate the potential risk of cross-infection. When guidelines are issued they must clearly take account of the reality of clinic and general practice, the preference of many doctors for low rather than high technology methods and the financial and other costs of any new or improved method of disinfection. It is acknowledged that low cost solutions may not be possible and this could require additional funding by the Department of Health.

The recently published white paper on primary care¹³ has promised incentives to encourage general practitioners to carry out screening programmes, including taking cervical smears. The advice to Greek physicians of 'first do no harm' is important when patients take the initiative to consult doctors. It is even more important when doctors encourage people to attend, as is the case of screening. With the increased use of instruments there will be an even greater need for proper disinfection facilities in each practice.

This simple study of disinfection practice in one district and the development of local guidelines has several advantages over a national study and centrally issued guidelines. There is a clear recognition that a potential problem has been jointly diagnosed, its future management discussed and sensible and practical solutions proposed. The dangers of central guidelines are that they may take too long to develop, be unrealistic or may not have the endorsement of the many thousands of practitioners who will be responsible for their implementation.

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