

# **The Dental Nurses' Guide to Infection Control and Decontamination**



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by  
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# Contents

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<b>FOREWORD</b>		<b>vii</b>
<i>Kathleen Hughes</i>		
<b>ACKNOWLEDGEMENTS</b>		<b>xii</b>
<b>INTRODUCTION</b>		<b>ix</b>
<b>GLOSSARY</b>		<b>xi</b>
<b>RESOURCES</b>		<b>xv</b>
<b>Chapter 1</b>	What is Infection?	<b>1</b>
<b>Chapter 2</b>	Personal Protective Measures to Control Infection	<b>25</b>
<b>Chapter 3</b>	Surgery Preparation and Maintenance	<b>43</b>
<b>Chapter 4</b>	Care and Maintenance of Instruments and Equipment	<b>59</b>
<b>Chapter 5</b>	Decontamination and Sterilisation	<b>77</b>
<b>Chapter 6</b>	Safe Disposal of Clinical Waste, Sharps, Dental Instruments, Equipment and Materials	<b>115</b>
<b>INDEX</b>		<b>137</b>

**Note**

While the authors and publishers have made every effort, as far as is possible, to confirm the information in this book complies with the latest standards of practice and legislation, the authors and the publishers cannot take responsibility from any instances arising as a result of errors. Healthcare practice and knowledge are constantly changing and developing.

Practitioners are encouraged to seek help where they are not competent to carry out a procedure.

# Foreword

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The prevention of infection is fundamental to all aspects of today's healthcare system, ensuring a safe environment for both the patient and healthcare worker alike. The practice of infection prevention in dentistry has never been as high on the political agenda as the public responds to their concern of healthcare associated infections. Blood-borne viruses continue to influence healthcare practice and procedures in an effort to reduce the incidence of transmission to and from healthcare workers (HCWs). The emergence of the degenerative brain diseases caused by prions (often manifested as Creutzfeldt-Jacob disease with its resistance to decontamination procedures), particularly demand attention from dental nurses (and others responsible for decontamination) who are usually responsible for such processes.

Clinical techniques have improved and progressed, but new procedures are not without risk to both the patient or the healthcare worker, none more so than the dentist and dental nurse as it can be argued that by its very nature every dental procedure is invasive and potentially will put all at risk from coming into contact with body fluids.

The design of a dental surgery is fundamental to modern dentistry and thus effect infection control procedures to become routine and 'design out' risks of cross contamination.

The risk of transmission from infected patient-to-HCWs is greater than HCW-to-patient, but specialists in dentistry can unwittingly put their patients at risk of exposure via contaminated instruments, so it is pleasing to find a chapter on the care and maintenance of instruments within this book.

This book is an excellent resource with up-to-date references for today's dental nurse, practising in both primary care and acute dentistry such as dental teaching hospitals. This book is a compendium of knowledge for a dental nurse working in a variety of practice settings. I have no hesitation in recommending this book to dental nurses and as a reference manual for infection control nurses.

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# Introduction

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This book is aimed at giving an insight into the complex and ever changing subject of infection control and decontamination for dental nurses working in any branch of dentistry. The very nature of infection means that new variants and strains are emerging constantly, so it is important that dental nurses keep up-to-date with the changes and amend their practices accordingly.

This book is aimed at being a practical guide, giving background information and theory and practical guidance on how to implement this knowledge. It is by no means exhaustive. Current research being undertaken will also throw up new ideas and prove or disprove present theory and practice as will the challenges presented by new instruments and dental procedures. During the preparation of this book, updated guidance was published by the Chief Dental Officer, on the disposal of endodontic files which will have a significant impact on general dental practitioners.

The information given is correct at the time of going to print, but should not be taken as an unchanging fact. It is the responsibility of all dental practitioners to keep up-to-date with changes, and this now includes dental nurses with the advent of State Registration and its requirement for Continued Professional Development (CPD).

Infection control must be the first consideration when any changes are planned in dental surgeries. The wellbeing of the patient must always be the overriding consideration. There must never be any chance of any infection being passed from one patient to another, or to staff. It is essential that efficient infection control and decontamination underpins all practices and procedures undertaken and becomes second nature for all members of the dental team.

The British Dental Association (BDA) leaflet A12 *Infection Control in Dentistry* (BDA, 2003) must always be the source of reference and the information contained in it used as the minimum requirements for each and every dental practice. Practices should have infection control and decontamination policies in place and these should form part of the induction of new staff into the practice. These policies should be regularly reviewed to take account of changes in official advice. Hospitals and Personal Dental Services will have their own infection control policies which should be followed at all times. These again should be regularly reviewed in the light of new research. It has been suggested that yearly infection control training should become part of the mandatory training schedule and should certainly be part of CPD for all the dental team.

It is important to recognise that non-compliance with policies is not an option as there are legal requirements for everyone under various

acts of Parliament that govern different aspects of infection control and decontamination.

Decontamination of equipment, instruments and the disposal of waste are integral responsibilities of the dental nurses' job, but this does not preclude them from being supervised and controlled by the dentist in a general practice, or by line managers within the hospital or private dental service. Decontamination practices will change with the advent of new research and in response to new infections. It is imperative that this subject remains part of DPD for all dental team members and it should form part of regular review during team meetings.

Please note that the legislation quoted is legislation mainly relating to England and Wales. Some legislation will cover all countries of the UK, but there are specific regulations for Scotland, Northern Ireland and in some cases, Wales. The best advice is, if living outside England, check what the relevant regulations are for your area. Advice can be found from the various web sites named in the resources section of this book.

# Glossary

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**Aerosol:** Dispersion of solid or liquid particles in a gas.

**Antisepsis:** The destruction or inhibition of micro-organisms on living tissues having the effect of limiting or preventing the harmful results of infection.

**Antiseptic:** A chemical agent used in antisepsis.

**Bowie-Dick Test:** Test designed to indicate that a steriliser is capable of removing air and non-condensable gases from a load.

**Carrier:** A person (host) who harbours a micro-organism (agent) in the absence of discernible clinical disease. Carriers may shed organisms into environment intermittently or continuously and therefore act as a potential source of infection.

**Cleaning:** The process that physically removes soiling including large numbers of micro-organisms and the organic material on which they thrive.

**Clinically-acquired infection:** Infection acquired during clinical/therapeutic care; not present or incubating at the start of the care/treatment.

**Colonisation:** The presence of micro-organisms at a body site(s) without the presence of symptoms or clinical signs of illness or infection. Colonisation may be a form of carriage and is a potential method of transmission.

**Commensal:** A micro-organism resident in or on a body site without causing clinical infection.

**Communicable period:** The time in the natural history of an infection during which transmission may take place.

**Contamination:** The presence of micro-organisms on a surface or in a fluid or material.

**Decontamination:** The combination of processes, including cleaning, disinfection and/or sterilisation, used to render a reusable item safe for further use.

**Disinfectant:** A chemical agent which, under defined conditions, is capable of disinfection.

**Disinfection:** The reduction of the number of viable micro-organisms on a product to a level previously specified as appropriate for its intended further use.

**Epidemic:** An unusual, higher than expected level of infection or disease by a common agent in a defined population in a given period.

**Flora:** Micro-organisms resident in an environmental or body site.

**Hospital-acquired–Infection (nosocomial infection):** Infection acquired during hospitalisation; not present or incubation at the time of admission to hospital.

**Immunity:** The resistance of a host to a specific infectious agent.

**Immuno-compromised:** A state of reduced resistance to infection that results from malignant disease, drugs, radiation illness or congenital defect.

**Incidence:** The number of new cases of a disease (or event) occurring in a specified time.

**Incubation Period:** The time interval between initial exposure to the infectious agent and the appearance of the first sign or symptoms of the disease in a susceptible host.

**Infection:** The damaging of body tissue by micro-organisms or by poisonous substances released by the micro-organisms.

**Isolation:** The physical separation of an infected or colonised host from the remainder of the ‘at risk’ population in an attempt to prevent transmission of the specific agent to other individuals and patients.

**Medical Device:** An instrument, apparatus, appliance, material or other article, whether used alone or in combination, together with any software necessary for its proper application, which is used for human beings for the purpose of healthcare treatment, diagnosis, prevention or monitoring. It also includes accessories necessary for the correct functioning of the medical device.

**Micro-organisms:** A microscopic entity capable of replication. It includes bacteria, viruses and the microscopic forms of algae, fungi and protozoa.

**Operating Cycle:** The set of stages of the sterilisation or disinfection process carried out in sequence and regulated by the automatic controller. It is synonymous with the terms sterilisation cycle for sterilisers and disinfection cycle for disinfectors.

**Pathogen:** A micro-organisms capable of producing disease.

**Potable Water:** Water of a suitable quality for drinking, cooking or food production.

**Reusable Device:** A medical device which can be reprocessed for repeated episodes of use.

**Reservoir:** Any animate or inanimate focus in the environment in which an infectious agent may survive and multiply and which may act as a potential source of infection.

**Seroconversion:** The development of antibodies not previously present resulting from a primary infection.

**Sharps:** Sharps are items that could cause cuts or puncture wounds. They include needles, hypodermic needles, scalpel and other blades, knives, infusion sets and broken glass.

**Single Use:** A medical device that is intended to be used on an individual patient during a single procedure and then discarded. It is not intended to be reprocessed and used on another patient.

**Source:** Place where micro-organisms are growing or have grown.

**Sterile:** Free from all living micro-organisms.

**Sterilisation:** A process which renders an item sterile.

**Sterilising Agent:** An agent or combination of agents which, under defined conditions, leads to sterilisation.

**Surveillance:** A systematic collection, analysis and interpretation of data on specific events (infections) and disease, followed by dissemination of that information to those who can improve the outcome.

**Susceptible:** A person presumably not possessing sufficient resistance (or

immunity) against a pathogenic agent who contracts infection when exposed to the agent.

**Transmission:** The method by which any potentially infecting agent is spread to another host.

**Ultrasonic Cleaners:** A machine which uses ultrasound energy to effect mechanical removal of soiling from the surface of the product.

**Virulence:** The intrinsic capabilities of a micro-organism to infect a host (person) and produce disease.

**Washer / Disinfector:** A machine intended to clean and disinfect medical devices and other articles used in the context of medical, dental, pharmaceutical and veterinary practice.

**WEEE:** Waste Electrical and Electronic Equipment (in relation to European commission Directive 2002/96/EC ).

**WM2:** Technical document produced by the Environment agency, Scottish Environment Protection Agency, and the Environment and Heritage service to provide guidance on the assessment and classification of Hazardous Waste, based on the Hazardous Waste Directive definition of hazardous waste.

# Resources

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## Within Dentistry

**British Association of Dental Nurses:** [www.badn.org.uk](http://www.badn.org.uk)  
**British Dental Association:** [www.bda-dentistry.org.uk](http://www.bda-dentistry.org.uk)  
**British Dental Health Foundation:** [www.dentalhealth.org.uk](http://www.dentalhealth.org.uk)  
**British Dental Hygienists Association:** [www.bdha.org.uk](http://www.bdha.org.uk)  
**British Dental Practice Managers Association:** [www.bdpma.org.uk](http://www.bdpma.org.uk)  
**British Orthodontic Society:** [www.bos.org.uk](http://www.bos.org.uk)  
**Clinical Dental Technicians Association:** [www.cdta.org.uk](http://www.cdta.org.uk)  
**Dental Nursing:** [www.dental-nursing.co.uk](http://www.dental-nursing.co.uk)  
**General Dental Council:** [www.gdc-uk.org](http://www.gdc-uk.org)  
**Orthodontic Technicians Association:** [www.orthota.co.uk](http://www.orthota.co.uk)  
**World Dental Federation:** [www.fdiworldental.org](http://www.fdiworldental.org)

## Non Dental-Specific

**Centres for Disease Control and Prevention (USA):** [www.cdc.gov](http://www.cdc.gov)  
**Department of Health:** [www.doh.gov.uk](http://www.doh.gov.uk)  
**Health and Safety Executive:** [www.hse.gov.uk](http://www.hse.gov.uk)  
**NHS Scotland:** [www.show.scot.nhs.uk](http://www.show.scot.nhs.uk)  
**Northern Ireland Health Department:** [www.dhsspsni.gov.uk](http://www.dhsspsni.gov.uk)  
**Welsh Health Information:** [www.wales.gov.uk/subihealth/index/htm](http://www.wales.gov.uk/subihealth/index/htm)

There are thousands of other sites on the Internet, both in the UK and worldwide, accessible by searching with key words, such as ‘infection’, ‘steriliser’, ‘dentistry’, etc. Additionally, each Primary Care Trust have their own websites and often post their own policies on it, which are accessible to the public.





# What is Infection?

Infection is the invasion and multiplication of micro-organisms within the tissue, which then results in their destruction. This is often seen as a chain of events (*Figure 1*). Each link in the chain must be present, and in the sequential order shown, for an infection to occur. Understanding the different links in the chain provides healthcare professionals with methods to protect vulnerable people and thereby prevent the spread of infection.

If any one of the links in the chain is broken or eliminated, then the infection can be prevented or the spread of infection reduced.

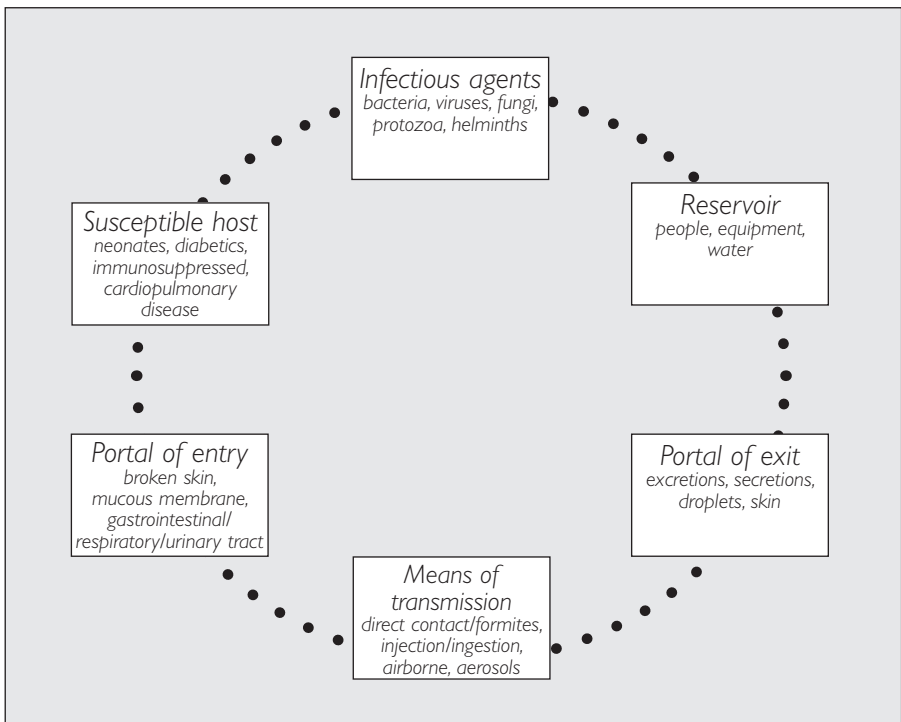


Figure 1. The chain of infection. If any of these links are broken infection could be prevented or reduced.