

11<sup>TH</sup> EDITION

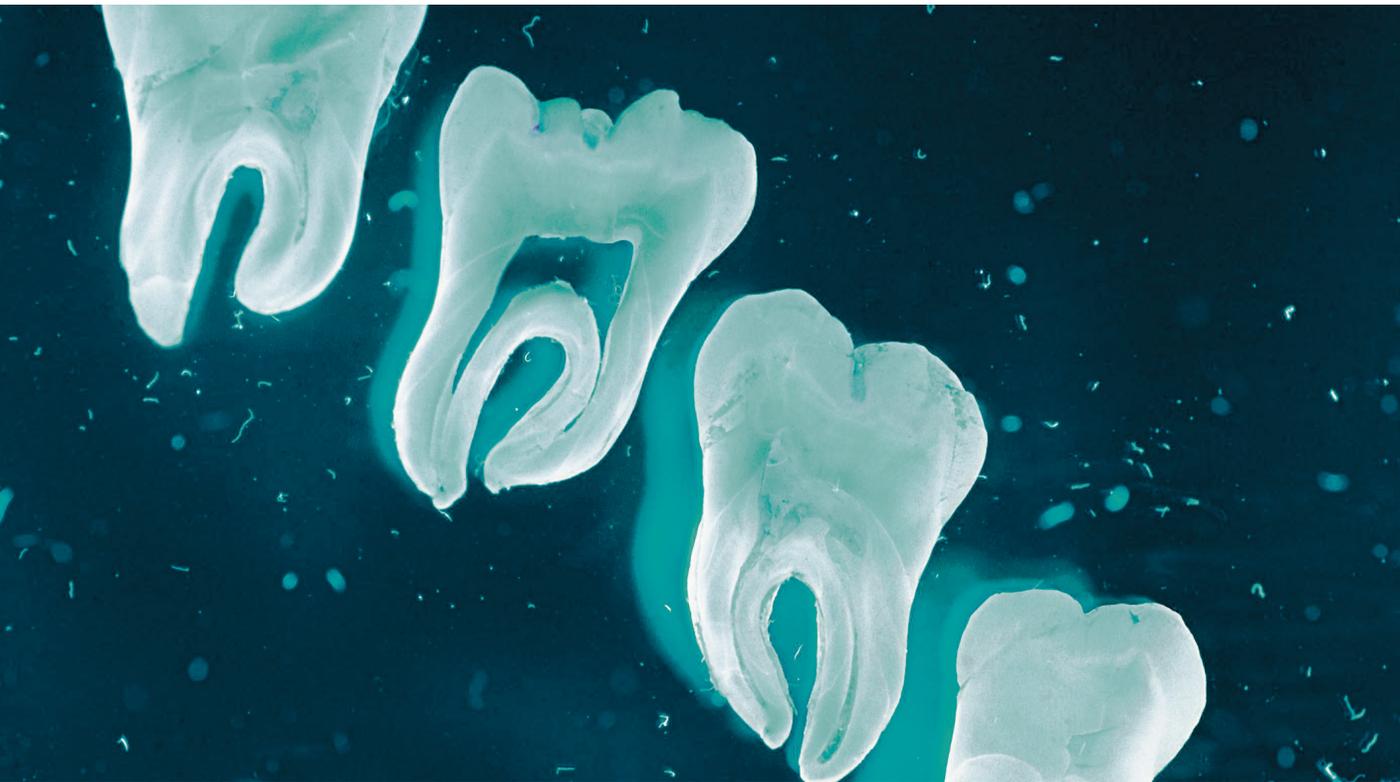


# LEVISON'S

# Textbook for

# Dental Nurses

CAROLE HOLLINS



WILEY Blackwell





# Levison's Textbook for Dental Nurses

This book is dedicated to the memory of Henry Levison – a visionary dentist and author who set the standard for dental nurse training and education.

# Levison's Textbook for Dental Nurses

Eleventh Edition

Carole Hollins

General Dental Practitioner

Member of the British Dental Association

Former presiding examiner for the National Examining Board for Dental Nurses

**WILEY** Blackwell

This edition first published 2013. © 2013 John Wiley & Sons, Ltd  
© 2004, 2008 Blackwell Munksgaard  
© 1960, 1963, 1969, 1971, 1978, 1985, 1991, 1997 Blackwell Science Ltd

First edition published 1960; Second edition published 1963; Third edition published 1969; Fourth edition published 1971; Fifth edition published 1978; Sixth edition published 1985; Seventh edition published 1991; Eighth edition published 1997; Ninth edition published 2004; Tenth edition published 2008; Eleventh edition published 2013.

*Registered Office*

John Wiley & Sons, Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK

*Editorial Offices*

9600 Garsington Road, Oxford, OX4 2DQ, UK  
The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK  
2121 State Avenue, Ames, Iowa 50014-8300, USA

For details of our global editorial offices, for customer services and for information about how to apply for permission to reuse the copyright material in this book please see our website at [www.wiley.com/wiley-blackwell](http://www.wiley.com/wiley-blackwell).

The right of the author to be identified as the author of this work has been asserted in accordance with the UK Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, except as permitted by the UK Copyright, Designs and Patents Act 1988, without the prior permission of the publisher.

Designations used by companies to distinguish their products are often claimed as trademarks. All brand names and product names used in this book are trade names, service marks, trademarks or registered trademarks of their respective owners. The publisher is not associated with any product or vendor mentioned in this book. It is sold on the understanding that the publisher is not engaged in rendering professional services. If professional advice or other expert assistance is required, the services of a competent professional should be sought.

The contents of this work are intended to further general scientific research, understanding and discussion only and are not intended and should not be relied upon as recommending or promoting a specific method, diagnosis or treatment by health science practitioners for any particular patient. The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation any implied warranties of fitness for a particular purpose. In view of ongoing research, equipment modifications, changes in governmental regulations and the constant flow of information relating to the use of medicines, equipment and devices, the reader is urged to review and evaluate the information provided in the package insert or instructions for each medicine, equipment or device for, among other things, any changes in the instructions or indication of usage and for added warnings and precautions. Readers should consult with a specialist where appropriate. The fact that an organisation or website is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organisation or website may provide or recommendations it may make. Further, readers should be aware that internet websites listed in this work may have changed or disappeared between when this work was written and when it is read. No warranty may be created or extended by any promotional statements for this work. Neither the publisher nor the author shall be liable for any damages arising herefrom.

*Library of Congress Cataloging-in-Publication Data*

Hollins, Carole.

Levison's textbook for dental nurses / Carole Hollins. – 11th ed.

p. ; cm.

Textbook for dental nurses

Includes bibliographical references and index.

ISBN 978-1-118-50044-6 (pbk. : alk. paper) – ISBN 978-1-118-50043-9 (ePub) – ISBN 978-1-118-50042-2 (Mobi) – ISBN 978-1-118-50041-5 – ISBN 978-1-118-68990-5

I. Levison, H. (Henry). Textbook for dental nurses. II. Title. III. Title: Textbook for dental nurses.

[DNLN: 1. Dental Assistants. 2. Dental Care. WU 90]

RK60.5

617.6'0233–dc23

2013012752

A catalogue record for this book is available from the British Library.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Cover image: © Irfan Ahmad, BDS

Cover design by Meaden Creative

Set in 10/12pt Calibri by SPI Publisher Services, Pondicherry, India

# Contents

<i>Introduction to the Eleventh Edition</i>	vi
<i>Introduction to the First Edition</i>	viii
<i>Acknowledgements</i>	ix
<i>Abbreviations</i>	x
<i>How to use your Textbook and Companion Website</i>	xiii
<i>Copyright Information</i>	xv
<b>Chapter 1:</b> Structure of the Dental Profession	1
<b>Chapter 2:</b> The Dental Nurse	9
<b>Chapter 3:</b> Legal and Ethical Issues	30
<b>Chapter 4:</b> Health and Safety in the Dental Workplace	74
<b>Chapter 5:</b> General Anatomy and Physiology	123
<b>Chapter 6:</b> Medical Emergencies	155
<b>Chapter 7:</b> Microbiology and Pathology	181
<b>Chapter 8:</b> Infection Control and Cleanliness	197
<b>Chapter 9:</b> Head and Neck Anatomy and Physiology	229
<b>Chapter 10:</b> Oral Anatomy and Physiology	248
<b>Chapter 11:</b> Oral Disease	274
<b>Chapter 12:</b> Oral Health Assessment and Diagnosis	307
<b>Chapter 13:</b> Oral Health Promotion and Disease Prevention	352
<b>Chapter 14:</b> Pain and Anxiety Control	386
<b>Chapter 15:</b> Restorative Dentistry	417
<b>Chapter 16:</b> Prosthodontics	473
<b>Chapter 17:</b> Extractions and Minor Oral Surgery	529
<i>Index</i>	556

# Introduction to the Eleventh Edition

Since the last edition was written, dental nurses have joined other members of the dental team to become registered professionals with the General Dental Council (GDC), and have at last been elevated to their well-deserved status as invaluable dental care professionals. With this professional recognition comes the necessity for set standards of attitude and behaviour outside the workplace, as well as suitable qualification, ethical work practices and the requirement for lifelong learning and continuous professional development during their careers.

This edition provides the underpinning knowledge required to cover the extensive curriculum contents of the National Examining Board for Dental Nurses' (NEBDN) new National Diploma qualification, which supersedes the old National Certificate. You can view the full curriculum for the NEBDN National Diploma in Dental Nursing at [http://www.nebdn.org/diploma\\_in\\_dental\\_nursing.html](http://www.nebdn.org/diploma_in_dental_nursing.html). A similar textbook will be available to cover the City & Guilds' curriculum for its new Diploma in Dental Nursing qualification. Although the same register-able qualification is awarded to successful candidates following either route to registration, the training and assessment methods involved for each are quite different.

The revised and updated text of this latest edition embraces all the numerous legislative and regulatory changes that have occurred in the last 5 years, including issues around Health and Safety, infection control, information governance, quality assurance requirements and the expansion of the concept of continuous professional development into that of team members becoming 'reflective practitioners'. In particular, the text in relevant chapters puts particular emphasis on the standards to be attained in becoming dental professionals, and has been continuously cross-referenced to the GDC's own *Standards Guidance* booklets, as well as some of its other publications such as *Fitness to Practise*, in the hope that their content is easily absorbed into the understanding and knowledge base of the readers.

In addition and where appropriate, website addresses are included to allow readers to access further information on many topics covered throughout the text – especially links to the NEBDN's curriculum and charting booklet download facilities, and links to more information on subject topics with national variations, such as infection control.

It is hoped that the increased use of photographs and illustrations, as well as that of bullet points to highlight key facts throughout the text, makes this edition particularly user-friendly and easy to understand for all readers, without detracting from the high standards now expected of dental nurse students as they evolve into fully fledged dental professionals. Finally, and as always, I sincerely hope that this text stimulates at least some readers into becoming sufficiently inspired during their studies to continue their careers beyond their initial qualification, and consider extended duties, postregistration qualifications and further dental professional careers.

## NEBDN National Diploma in Dental Nursing

You can view the full curriculum for the NEBDN National Diploma in Dental Nursing at [http://www.nebdn.org/diploma\\_in\\_dental\\_nursing.html](http://www.nebdn.org/diploma_in_dental_nursing.html).

*Carole Hollins*

# Introduction to the First Edition

This book is designed to cover the syllabus for the British Dental Nurses and Assistants Examination. Although written primarily for nurses preparing for this examination, it also provides an outline of dental surgery for those embarking on a career of dental nursing, thus helping them gain a greater understanding of the nature and aims of their duties. For examination purposes, the subject matter is deliberately presented in a dogmatic fashion and, to aid final revision, there is a summary after each chapter.

The text was prepared during a winter spent in the North Isles of Shetland with the School Health Service mobile dental unit; and for helpful advice and encouragement throughout, I am indebted to my former dental nurse, Miss M.E. Isbister. I wish to thank my wife for typing the manuscript; my sister, Miss B. Levison, for the drawings; the Amalgamated Dental Trade Distributors Ltd for providing some new blocks; and Mr P. Saugman of Blackwell Science for his guidance.

*H. Levison*

# Acknowledgements

Sadly, since the last edition of this popular book was published, its original author Henry Levison has passed away. Therefore this edition is dedicated to his memory in grateful thanks, on behalf of the thousands of dental nurses whose careers are hopefully the better for his many years of dedication to their educational needs.

Once again, I must extend my grateful thanks to the patients and staff of Kidsgrove dental practice for their modelling skills, and give sincere thanks also to my sister (yet again!) for her technical and computer-related wizardry – thank goodness she knows what she's doing!

In updating this edition, I am very grateful to the General Dental Council and the Department of Health for their permissions to reproduce various documents and booklets throughout the text, and I hope I have done justice to their content. I must also express great appreciation for the continued support of previous illustrators too.

Finally, a huge 'thank you' to the various staff of Wiley Blackwell (past and present) for their superb help and support throughout the updating and publishing process, and especially the speedy professionalism with which they work.

# Abbreviations

ADJ	amelodentinal junction	CPR	cardiopulmonary resuscitation
AED	automatic external defibrillator	CQC	Care Quality Commission
AIDS	acquired immune deficiency syndrome	CRB	Criminal Records Bureau
ALARA	as low as reasonably achievable	CSF	cerebrospinal fluid
ALARP	as low as reasonably practicable/possible	DCP	dental care professional
ALS	Advanced Life Support	DDPH	Diploma in Dental Public Health
ANUG	acute necrotising ulcerative gingivitis	DDR	Diploma in Dental Radiology
ARF	annual retention fee	DGDP	Diploma in General Dental Practice
BADN	British Association of Dental Nurses	DMF	decayed, missing, filled
BDA	British Dental Association	do	distal occlusal
BDJ	<i>British Dental Journal</i>	DOrth	Diploma in Orthodontics
BDS	Bachelor of Dental Surgery	<i>DPF</i>	<i>Dental Practitioners' Formulary</i>
BLS	Basic Life Support	DPT	dental panoramic tomograph
<i>BNF</i>	<i>British National Formulary</i>	DRABC	dangers, response, airway, breathing, circulation
BPE	basic periodontal examination	DRO	Dental Reference Officer
BSA	Business Services Agency (previously Dental Practice Board)	DVT	deep vein thrombosis
CAL	computer-aided learning	EAV	expired air ventilation
C&G	City & Guilds	ECC	external cardiac compression
CG	clinical governance	ECG	electrocardiogram
CJD	Creutzfeldt–Jakob disease	EMQ	extended matching question
COAD	chronic obstructive airways disease	F/	full upper denture
COSHH	Control of Substances Hazardous to Health	F/F	full upper and lower dentures
CPD	continuing professional development	/F	full lower denture
CPITN	Community Periodontal Index of Treatment Needs	FDI	World Dental Federation
		FDS	Fellow in Dental Surgery
		FGC	full gold crown
		GA	general anaesthesia
		GDC	General Dental Council
		GDP	general dental practitioner
		GI	gold inlay

GIC	glass ionomer cement	M Paed Dent	Membership in Paediatric Dentistry
GIT	gastrointestinal tract		
GP	gutta percha	MRSA	methicillin-resistant <i>Staphylococcus aureus</i>
GTN	glyceryl trinitrate (spray)	MSc	Master of Science
HBV	hepatitis B virus	NEBDN	National Examining Board for Dental Nurses
HCV	hepatitis C virus	NHS	National Health Service
HIV	human immunodeficiency virus	NICE	National Institute for Health and Clinical Excellence
HRT	hormone replacement therapy	NME	non-milk extrinsic (sugar)
HSE	Health and Safety Executive	NSAID	non-steroidal anti-inflammatory drug
HTM 01-05	Health Technical Memorandum 01-05	NVQ	National Vocational Qualification
IG	information governance	OHA	occupational health advisor
IH	inhalation sedation (previously relative analgesia)	OPG	dental panoramic tomograph (orthopantomograph)
INR	international normalised ratio	OSCE	objective structured clinical exam
IOTN	Index of Orthodontic Treatment Need	P/	partial upper denture
IPA	isopropyl alcohol	P/P	partial upper and lower dentures
IR (ME) R	Ionising Radiation (Medical Exposures) Regulations	/P	partial lower denture
IRR	Ionising Radiation Regulations	PAT	portable appliance testing
IT	information technology	PBC	porcelain bonded crown
IV	intravenous	PCT	primary care trust
LA	local anaesthesia (analgesia)	PDP	personal development plan
LDS	Licentiate in Dental Surgery	PE	partially erupted
LPA	Laser Protection Advisor	PIDA	Public Interest Disclosure Act 1998
LPS	Laser Protection Supervisor	PJC	porcelain jacket crown
LSAB	Local Safeguarding Adults Board	PoM	prescription-only medicine
LSCB	Local Safeguarding Children Board	PPE	personal protective equipment
MAOI	monoamine oxidase inhibitor	ppm	parts per million
MCQ	multiple choice question	PV	porcelain veneer
MFDS	Member of the Faculty of Dental Surgery	QA	quality assurance
MGDS	Membership in General Dental Surgery	RA	relative analgesia (now known as inhalation sedation)
MI	myocardial infarction	RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
MIIMS	Monthly Index of Medical Specialities		
MJDF	Membership of the Joint Dental Faculties	RPA	Radiation Protection Advisor
MMR	measles, mumps and rubella (vaccination)	RPS	Radiation Protection Supervisor
mo	mesial occlusal	SCC	squamous cell carcinoma
mod	mesial occlusal distal	SWOT	strengths, weaknesses, opportunities and threats
MOS	minor oral surgery		

## Abbreviations

xii

TIA    transient ischaemic attack  
TMJ    temporomandibular joint  
TTP    tender to percussion  
UE    unerupted

vCJD    new-variant Creutzfeldt–Jakob  
          disease  
WHO    World Health Organization  
ZOE    zinc oxide and eugenol cement

# How to use your Textbook and Companion Website

Welcome to the new and updated version of *Levison's Textbook for Dental Nurses*. These pages give you an overview of the key features in the book and companion website, and how to make the most of them to achieve exam success.

## Features contained within your textbook

Every chapter begins with **Key Learning Points**. These outline the main learning outcomes you should have achieved by the end of the chapter.

### Key learning points

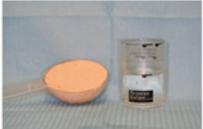
- A factual knowledge of**
  - the professional obligations of dental nurses
  - Continuing Professional Development requirements and becoming a reflective practitioner
- A working knowledge of**
  - the General Dental Council's professional standards guidance in relation to the dental team
  - all aspects of patient records; including issues of confidentiality, information governance, and patient access to records
  - patient consent to treatment
  - raising concerns in the workplace
- A factual awareness of**
  - the issues of protecting children and vulnerable adults
  - patient complaints and their correct handling

Throughout the book you'll find useful illustrations, photographs and tables.

Chapter 16 Levison's Textbook for Dental Nurses

**Table 16.1** Common impression materials used in prosthodontics

Name	Type of material	Mixing components and technique
Alginate	Inversible hydrocolloid	Powder and room temperature water in equal portions, mixed by spatulating in a bowl
Addition silicone	Elastomer	Base and catalyst, as putty and liquid or two-paste, mixed in equal portions by spatulation, or in preloaded tubes, or in a mixing machine
Polyether	Elastomer	Base and catalyst pastes, mixed in equal portions by spatulation, then loaded into a syringe for direct application
Agar	Reversible hydrocolloid	Gel in a sealed tube, becomes fluid by heating the tube and is mixed by manipulation within the tube before use Used in the laboratory to produce duplicate models

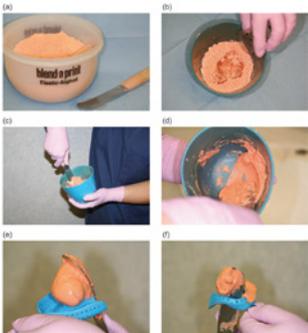


**Figure 16.1** Alginate scoop and water measurer

folding the powder into the water initially, then vigorously spreading it against the bowl side – this is called spatulating (Figure 16.2). The mix needs to be spatulated thoroughly to be free of air bubbles, and to create a stiff and creamy consistency. The mix is then loaded into an impression tray before insertion into the patient's mouth (see later). A wet impression is shown in Figure 16.3.

The working time of alginate is affected by the temperature of the mixing water used, and the setting time is affected by the room temperature. In both cases, the higher the temperature, the less time is required. Room temperature water and surroundings provide the optimum conditions of use but are not always possible, such as on cold winter days and hot summer days. Some alginates are presented as 'chromagenic' materials which change colour during the mixing and setting stages, so that the tray can be loaded and the impression taken at the optimal points

Prosthodontics Chapter 16



**Figure 16.2** Alginate mixing stages and tray loading

of the procedure. So an initial white powder changes to pink during the working time, and the tray is loaded and inserted into the patient's mouth. Once the material has changed to a purple colour it is set, and the impression can be removed from the patient's mouth. The uses and advantages of alginate are listed above. Its disadvantages are as follows.

- Can undergo dimensional changes in the presence or absence of water.
  - if left immersed in water, the impression expands.
  - if allowed to dry out, the impression shrinks.
- Ideally, then, the model should be cast immediately.
- When this is not possible, the impression should be wrapped in a damp gauze and sealed in an airtight plastic bag before sending to the laboratory.

 Further resources are available for this book, including interactive multiple choice questions and extended matching questions. Visit the companion website at:  
[www.levisontextbookfordentalnurses.com](http://www.levisontextbookfordentalnurses.com)

At the end of every chapter there is a helpful reminder to visit the companion website at [www.levisontextbookfordentalnurses.com](http://www.levisontextbookfordentalnurses.com)

On the website you can test yourself on the interactive multiple choice and extended matching questions.

**Extended matching questions for chapter 1**

For each of the questions below, select the answer which is most appropriate. Each option can be used once, more than once or not at all.

1 During an oral health assessment, a patient is told by the dentist that a heavily filled tooth which has fractured will require extraction, and is not offered the option of saving the tooth by the provision of a crown. Which GDC Standards principle has not been followed by the dentist?

Select your option

You have answered 1 questions correctly. You have 0 questions remaining.

1 During an oral health assessment, a patient is told by the dentist that a heavily filled tooth which has fractured will require extraction, and is not offered the option of saving the tooth by the provision of a crown. Which GDC Standards principle has not been followed by the dentist?

Respect patients' dignity and choices

We hope you enjoy your new textbook. Good luck with your studies!

# Copyright Information

Several Wiley publications have contributed artwork to this book. We are grateful for permission to use and adapt the artwork.

Dean, M.R.E. and West, T.E.T., 1987, *Basic Anatomy and Physiology for Radiographers*, 3rd edition, Blackwell Science, Oxford

Ellis, H., 2006, *Clinical Anatomy*, 11th edition, Blackwell Publishing, Oxford

Foster, T.D., 1990, *A Textbook of Orthodontics*, 3rd edition, Blackwell Science, Oxford

Hollins, C., 2008, *Basic Guide to Dental Procedures*, Blackwell Publishing, Oxford

Hollins, C., 2009, *NVQs for Dental Nurses*, 2nd edition, John Wiley & Sons, Oxford

Hollins, C., 2012, *Basic Guide to Anatomy and Physiology for Dental Care Professionals*, John Wiley & Sons, Oxford

Peterson, O.H. (ed), 2006, *Lecture Notes: Human Physiology*, 5th edition, Blackwell Publishing, Oxford

Skeet, M., 1981, *Emergency Procedures and First Aid for Nurses*, Blackwell Science, Oxford

Skeet, M., 1988, *Emergency Procedures and First Aid for Nurses*, 2nd edition, Blackwell Science, Oxford

Smith, N.J.D., 1988, *Dental Radiography*, 2nd edition, Blackwell Science, Oxford

Artwork reproduced with permission from third-parties is credited at the end of the appropriate caption.



# 1

## Structure of the Dental Profession

### Key learning points

A **factual knowledge** of

- the various members that make up the dental team

An **overview** of

- the key roles of each member as well as the dental nurse
- the National Health Service and its current involvement with the provision of dental care

The dental team is now made up of dentists and six categories of registered dental care professionals (DCPs), all of whom work together to provide oral healthcare for their patients. In hospital and clinic environments, some of the dentists may have gone on to become specialists in various fields of dentistry, while dental nurses are now able to train and become competent in various postregistration qualifications as well as 'extended duties'. With the introduction of a new National Health Service (NHS) dental contract and with a new commissioning system imminent, there has never been a more exciting time for dental nurses to push the boundaries of their profession and become recognised as vital members of every dental team, in every dental workplace.

An overview is given below of the roles of the various registrants, and that of the dental nurse is covered in detail in Chapter 2.

## The dentist

2

Dentists undergo 5 years of undergraduate training at a university dental school. On passing their final examinations, students are awarded the degree of Bachelor of Dental Surgery (BDS), but they cannot use the title of dentist or practise the profession until their names have been entered onto the Dentists Register. In addition, dentists who have qualified in member states of the European Union may also join the Register, although they must have an adequate level of written and spoken English. Dentists from non-European Union countries must have their skills and knowledge assessed for equivalence with that required for UK dentists before they may work here.

The Register is kept by the General Dental Council and contains the name, address and qualification(s) of every person legally entitled to practise dentistry in the United Kingdom. Such persons may describe themselves as dentist, dental surgeon or dental practitioner – there is no difference between these titles. Dentists may also use the courtesy title of Doctor but must not imply that they are anything other than dentists. Following qualification, all dentists are legally required to continue their professional education until their retirement from practice, in order to maintain and update their skills.

Registered dentists have a wide choice of opportunities within the profession.

- General practice.
- Community dental service.
- Hospital service.
- University teaching and research.
- Industrial dental service.
- The armed forces.

They may also take additional higher qualifications and become specialists in a particular branch of dentistry. Some examples of such qualifications are as follows.

- Fellowship in Dental Surgery (FDS).
- Master of Science (MSc) in a specialty.
- Membership in the Joint Dental Faculties (MJDF).
- Membership in Paediatric Dentistry (M Paed Dent).
- Membership of the Faculty of Dental Surgery (MFDS).
- Diploma in Dental Public Health (DDPH).
- Diploma in Dental Radiology (DDR).
- Diploma in General Dental Practice (DGDP).
- Diploma in Orthodontics (DOrth).

These qualifications are provided by the joint dental faculties of the Royal Colleges of Surgery.

Having obtained the relevant higher qualifications, dentists may then join the Specialist List of the Register for their particular specialty, which includes the following areas.

- Oral and maxillofacial surgery.
- Surgical dentistry.
- Dental and maxillofacial radiology.
- Dental public health.
- Oral medicine.
- Oral microbiology.

- Oral pathology.
- Orthodontics.
- Periodontics.
- Prosthodontics.
- Restorative dentistry.

## The General Dental Council

The General Dental Council (GDC) is the regulatory body of the dental profession and its duties are set out in legislation. It aims to promote high standards of professional education and professional conduct among dentists and DCPs, throughout their working career. It thereby ensures that the status of the profession in the general community is upheld and that a proper code of conduct is maintained, for the protection of the public. In essence, its remit is to:

- protect patients
- regulate the dental team.

In the performance of these duties, the GDC must be satisfied that courses of study at dental schools and the qualifying examinations are adequate, and the same applies to postgraduate education and to the register-able qualifications for all the DCP categories.

It is the policy of the GDC for all dentists, after qualification, to complete a year of foundation training (previously called vocational training) before starting independent practice. Such training schemes are already in force in NHS general practice, the community and hospital services, and also on a voluntary basis in non-NHS practice. As soon as adequate resources and facilities are available, it is likely to be mandatory for all newly qualified dentists to undergo foundation training soon after qualification.

The GDC is empowered to remove or suspend from the Register any dentist or DCP who has been convicted of a criminal offence or is guilty of serious professional misconduct. It may also suspend any registrant whose fitness to practise is seriously impaired because of a physical or mental condition. These issues are discussed further in Chapters 2 and 3.

Apart from registered dentists, the only other persons permitted to undertake dental treatment are registered dental hygienists and dental therapists, and registered clinical dental technicians may provide and maintain full dentures to edentulous patients. The GDC is responsible for these dental care professionals in much the same way as for dentists. The expected level of their competences by the time of their qualification is laid out in the GDC document *Preparing for Practice*, while those additional duties possible after a period of suitable training and assessment are laid out in its document *Scope of Practice*. This has particular relevance to dental nurses, and all GDC documents can be downloaded at [www.gdc-uk.org](http://www.gdc-uk.org).

## The dental team

Dentists' training enables them to undertake, without assistance, all treatment necessary for patients, including construction of their dentures, crowns and bridges, provision of restorations and root fillings, extractions, etc. Except for the actual treatment performed within the mouth, much of the work which a dentist is qualified to do can be performed by other members of the dental team. For example, a chairside dental nurse provides an extra pair of hands for preparing and mixing filling and impression materials, and for helping with suction, retraction and illumination

to keep the operative field clear and dry for the dentist and comfortable for the patient. A dental technician can make dentures, crowns and bridges ready for the dentist to fit, while dental hygienists and therapists are permitted to undertake limited forms of dental treatment.

By utilising all this assistance, a dentist becomes the leader of a team which can practise in the most efficient way. Dentists carry out all the treatment which they alone can perform, while the other members of the team – hygienist, therapist, dental nurse and technician – perform all the work which a dentist can delegate. Compared with a single-handed dentist, the dental team can provide far more treatment each day with less effort and fatigue for all concerned, and thereby give a better total service to the patient and the community. Dental team working is discussed in more detail in Chapter 3.

The full group of registered dental team members will eventually comprise:

- dental nurses
- dental hygienists
- dental therapists
- orthodontic therapists
- dental technicians
- clinical dental technicians
- maxillofacial prosthetists and technologists.

All except the last group are already required to be registered with the GDC, and must have specific training programmes, extended duties and professional responsibilities for continuing professional development and professional conduct similar to those of dentists. The issue of professionalism and its relevance to all dental team members is discussed in detail in Chapter 3.

Further information is also available at [www.gdc-uk.org](http://www.gdc-uk.org).

## Dental care professionals

This is the new professional title for all members of the dental team besides the dentist. They were previously referred to as professionals complementary to dentistry (PCDs).

### Dental nurse

This whole text is aimed at dental nurses and their training requirements, and their invaluable role and position in the dental team are discussed in detail in Chapter 2.

### Dental hygienist

After 2 years' training at a dental hospital or in the armed forces, hygienists used to be awarded a Diploma in Dental Hygiene and could then become registered by the GDC. Dental hygiene training has now been combined with that of dental therapists as a dual qualification, so that all those who qualify have a much wider range of skills and competencies.

Hygienists are permitted to undertake a number of dental procedures for which they have been trained, under the prescription of a dentist. These duties include:

- scaling and polishing teeth
- use of infiltration local anaesthesia
- application of fluorides and fissure sealants
- treating patients under conscious sedation, provided that a dentist is present in the room

- emergency replacement of dislodged crowns, using a temporary cement
- removal of excess cement
- application of a temporary filling if one becomes dislodged while under their treatment
- taking impressions.

Apart from their treatment role, hygienists are also trained to be proficient dental health educators.

## Dental therapist

Dental therapists undertake a 2-year course at a dental hospital and now become qualified in both hygiene and therapy. They are awarded a Diploma in Dental Therapy and Hygiene and can carry out a wider range of treatments once they have obtained GDC registration. They are permitted to carry out all of the same duties as a hygienist, and all of the following additional duties:

- simple fillings
- pulp treatment of deciduous teeth
- extraction of deciduous teeth
- fitting preformed crowns on deciduous teeth
- dental radiography (when taught as an integral part of the training course).

Prior experience as a dental nurse and possession of the relevant dental nursing qualification are requirements for admission to dental hospital training courses for dental hygiene and therapy training.

## Dental technician

Dental technicians are highly skilled craftsmen and women who construct dentures, crowns, bridges, inlays, orthodontic appliances, splints and replacements for fractured or diseased parts of the face and jaws. They work to the dentist's prescription in a dental laboratory. Training consists of a full-time course in a dental hospital or technical college; or an apprenticeship with part-time attendance at a technical college.

## Clinical dental technician

Clinical dental technicians are specially trained to provide and maintain full dentures for edentulous patients, and may do so without the involvement of a dentist.

## Maxillofacial prosthetists and technologists

Maxillofacial prosthetists and technologists are technicians who have specialised in jaw and facial reconstruction and replacement, and work closely with maxillofacial surgeons in a hospital environment.

## The National Health Service

Dental treatment in the United Kingdom is provided either privately or through the NHS. Private patients obtain treatment from a practitioner of their choice and pay a fee to the practitioner for professional services given, or they join one of the private registration and capitation schemes and pay a monthly or annual subscription to cover the majority of their treatment charges.

National Health Service dental treatment differs from private practice in the range of treatment provided and the method of payment for such treatment. Certain types of treatment available in private practice are currently restricted in the NHS (such as tooth-coloured fillings and crowns on posterior teeth), while payments to the dentist are set and controlled by the NHS, with patients' contributions ranging from nil to a set maximum.

Currently, NHS treatment available to the public is split into three bands, as follows.

- Band 1 – simple treatments such as examinations, radiographs, scaling.
- Band 2 – routine treatments such as fillings, extractions, root treatments.
- Band 3 – complex treatments involving laboratory work such as crowns, bridges, dentures.

A set fee is charged to the patient for each of the bands, regardless of the amount of treatment carried out, so for instance the same fee is paid for one filling or 10 fillings, if provided during the same course of treatment.

However, the system is due to change in the very near future, and while the final decision is not yet made on the replacement system to be introduced, it is highly likely that more emphasis will be placed on the role of DCPs within the dental team. The dentist will still be the only team member capable of providing all care and treatment for a patient, but much will be delegated to those DCPs with suitable training and qualifications to be carried out instead. So, dental workplaces may eventually consist of fewer dentists and more DCPs, but with the ability to carry out the same range of dental treatments between them.

The cost of the NHS is borne by the state, and the government department responsible for it is the Department of Health. This delegates operational management of the service to the NHS Executive. For administrative purposes, the country is divided into a number of large strategic health authorities for overall planning. These are currently subdivided at a local level into a large number of smaller authorities, called NHS trusts for hospital services and primary care trusts (PCTs) for community clinics and general practitioner services. PCTs have the responsibility of deciding the level of need for NHS dentistry in their area, as well as providing emergency out-of-hours dental care to the public.

In April 2013, PCTs are due to be replaced by another system of commissioning medical and dental care in their localities, and although the final details are unclear at this time, it is likely that local councils and general medical practitioners (GPs) will take responsibility for commissioning healthcare in their areas instead.

## Community dental service

This was formerly called the school dental service, providing examination and treatment for children and expectant and nursing mothers. It still meets the same needs but has acquired additional responsibilities. These vary according to local demand but can include treatment for special needs patients of all ages, emergency treatment for patients without access to an NHS dentist, treatment of the elderly (especially those unable to attend a dental workplace), provision for general anaesthesia and conscious sedation, and dental health programmes for the community at large.

The community dental service is administered by the NHS trust or PCT and co-operates with hospital staff and general practitioners in planning and co-ordinating all dental services in the district. Salaried community dental officers provide treatment in clinics with equipment and materials supplied by the trust or PCT.

## Hospital dental service

Hospitals are administered by an NHS trust. Dental services are provided by consultant oral and maxillofacial surgeons and orthodontists. They give specialist advice and treatment for patients referred by practitioners outside the hospital, and for patients referred from other departments of the hospital. They are also in overall charge of dental care for long-stay inpatients. In addition, most consultants provide postgraduate courses and part-time training posts for general practitioners.

## General dental service

This is the general practitioner service which provides a significant share of all dental treatment in the UK. It is currently administered by the local PCT which holds dentists' NHS contracts and is responsible for NHS disciplinary procedures.

The Dental Practice Division of the Business Services Authority (previously the Dental Practice Board) authorises payment of NHS treatment fees to practitioners. It can also arrange for patients to be examined by its dental reference officers (DROs).

General practitioners set up and equip their practices at their own expense and are entitled to have private patients as well as NHS patients. However, if involved in NHS care of patients, they must also demonstrate compliance with various quality assurance measures, as follows:

- clinical governance
- clinical audit/peer review
- information governance.

There is no reason why a fully private practice cannot have the same quality assurance systems in place also, although they are only required to abide by any relevant legislation, rather than having to abide by NHS rules.

## Clinical governance

This requires every NHS practice principal to have a quality assurance system for the practice, in order to ensure a consistent quality of care. It must cover the following areas to ensure the safety of its patients:

- infection control (Chapter 8)
- all legal obligations of health and safety law in the practice (Chapter 4)
- all legal obligations for radiation protection (Chapter 4)
- compliance with GDC requirements for continuing professional development (Chapter 3).

The practice must also:

- appoint a member of the staff to be responsible for operating the system
- display a written practice quality policy for patients
- provide the PCT with an annual report on the quality assurance system.

Clinical governance is discussed further in Chapter 3.

## Clinical audit and peer review

Clinical audit is an essential feature of clinical governance that came into force for NHS dentists in 2001. Its purpose is to ensure that individual dentists assess different aspects of their practice, make changes where necessary, and thereby improve service and care for their patients. The running of quality assurance programmes within the dental workplace can often be delegated to suitably trained dental nurses, an example being retrospective clinical audits of dental radiographs.

Peer review is an optional alternative to clinical audit for dentists who prefer to undertake their practice assessments within a group of other dentists and thereby share the benefit of the group's combined experience.

As these are now clinical governance requirements, rather than optional activities, funding is no longer available to dentists for their completion.

## Information governance

This is a quality assurance system that has been implemented for healthcare, corporate and information technology (IT) organisations that sets out to ensure the safety and appropriate use of personal and patient information. It is therefore linked to patient confidentiality, data protection and the freedom of information passing between various organisations and bodies.

The Department of Health has charge of the implementation of the system for healthcare organisations, including all dental workplaces, and has developed sets of information governance requirements in a toolkit (referred to as the IG Toolkit), which enables NHS healthcare providers to measure their own compliance.

Information governance is discussed further in Chapter 3.

## British Dental Association

The British Dental Association (BDA) is the professional body representing the majority of dentists in the UK. It publishes the *British Dental Journal (BDJ)*, and many compendiums, toolkits and other literature to provide its members with up-to-date information and advice on the business of dentistry. It runs annual dental conferences which provide further update advice, as well as many continuing professional development (CPD) events aimed at the dental team rather than just dentists. The Association also negotiates for the profession with the government and other bodies, such as local dental committees, where dental interests are concerned. Membership of the BDA is voluntary, it is open to all dentists and allows its members access to a huge source of dental literature and research material.

## Resources

[www.gdc-uk.org](http://www.gdc-uk.org).

General Dental Council, 37 Wimpole Street, London W1G 8DQ

Tel: 020 7887 3800

Fax: 020 7224 3294



Further resources are available for this book, including interactive multiple choice questions and extended matching questions. Visit the companion website at:

[www.levisontextbookfordentalnurses.com](http://www.levisontextbookfordentalnurses.com)

# 2

## The Dental Nurse

### Key learning points

A **factual knowledge** of

- the General Dental Council and its role in dental nurse training, registration, and regulation

A **working knowledge** of

- the overall role of the dental nurse in relation to administrative and chairside skills

A **factual awareness** of

- the National Examining Board for Dental Nurses' National Diploma examination structure

A **detailed explanation** of

- each element of the examination

An **overview** of

- available postregistration qualifications

### History

Until 2008, any person wishing to work as a nurse or assistant in the dental surgery environment could do so without undertaking any form of training or passing any examination. Since 1943, the National Examining Board for Dental Nurses (NEBDN), previously called the National Examining Board for Dental Surgery Assistants, had been setting and running its voluntary examination for any persons working as nurses (assistants) in the dental workplace. Qualification in the National Certificate examination showed that successful candidates had achieved a set basic standard in dental nursing, were able to work unsupervised alongside the dentist and could call themselves a 'dental nurse' (previously a 'dental surgery assistant').

More recently, City & Guilds (C&G) introduced its Level 3 NVQ in Dental Nursing, as an alternative qualification for those students wishing to follow a vocational rather than a more academic career

pathway to becoming a dental nurse. Both qualifications ran successfully alongside each other, and were open to any students wishing to take them. In Scotland, students were able to access a Scottish equivalent of the NVQ, as well as the National Certificate.

In the last 5 years, dental nurses, along with all other dental care professionals, have gradually been brought under the regulatory umbrella of the General Dental Council (GDC). Following a period of 'grandparenting', during which unqualified but well-experienced dental nurses were allowed to register with the GDC without prior qualification, compulsory training and qualification for all were introduced.

## Registration

Since 2008, any person wishing to work as a dental nurse has had to undergo a period of supervised training, and then pass a formal examination before being allowed to register with the General Dental Council. All unqualified dental nurses must be supervised and 'in training' to be able to work directly with patients, and all qualified dental nurses must be registered on an annual basis with the GDC, to be able to continue to work with patients unsupervised.

As with the other dental care professionals (DCPs) listed in Chapter 1, the necessity of registration for dental nurses has raised their role to that of a professional in the eyes of both the public and other members of the dental team. In addition, it has brought all members of the dental team into line with other healthcare professionals in the United Kingdom, so that all are now accountable to a regulatory body.

In line with other regulators, the purpose of the GDC in its regulatory role is to maintain the list – or Register – of those persons deemed suitable to work as healthcare professionals at their level of qualification. This is correctly termed their 'fitness to practise'.

As with all other GDC registrants, dental nurses are required to pay an annual retention fee to maintain their place on the Register, having behaved in a professional manner throughout the previous 12-month period. In other words, the GDC has to ensure not only that anyone joining the Register is fit to practise at the point of initial qualification but that they remain so throughout their career. Consequently, the GDC's own aims are summarised throughout its publications as: '*Protecting patients, regulating the dental team*'.

## Role of the General Dental Council in dental nurse training and qualification

To ensure that dental nurses are adequately trained and qualified to a suitable level in their chosen dental career, the GDC describes the learning outcomes that each student must be able to demonstrate by the end of their training, to be able to join the GDC Register. Originally, these outcomes were published in the GDC document *Developing the Dental Team* but they are now covered in the updated publication *Preparing for Practice – Dental Team Learning Outcomes for Registration*. This updated document has also superseded the equivalent publication for dental undergraduates, *The First Five Years*. All GDC publications can be viewed or downloaded by accessing its website at [www.gdc-uk.org](http://www.gdc-uk.org).

In summary, then, the GDC has a vital role to play in the regulation of the whole dental team, including dental nurses, from the time that they enter a formal course of training as a student, right through their professional career until they leave the GDC Register. The GDC's functions as a regulatory body and the way that this affects the dental nurse are as follows.

- Set standards to be followed – in relation to behaviour, education (pre- and postregistration) and ethics.
- Handle fitness to practise issues – in relation to poor health, poor professional performance or professional misconduct.
- Remove individuals from the Register and prevent them from practising as dental professionals, if they are considered to be ‘unfit’.

In carrying out its role as a regulatory body for the dental profession, the GDC also promotes its own aims to.

- protect patients
- regulate the dental team
- promote public confidence in all dental professionals
- quality assure dental education for all dental professionals working in the UK
- ensure that all dental professionals maintain an up-to-date level of knowledge
- assist patients with serious complaints against dental professionals.

These fundamental aims of the GDC affect the working lives and careers of every dental professional on a day-to-day basis, and represent the standards that should be achieved by all. The GDC has conveniently published these principles and standards in booklet format, *General Dental Council Standards Guidance*, and made them available to all registrants. They are discussed in detail in Chapter 3. All student dental nurses are expected to be familiar with the detailed contents of these booklets by the time they sit their qualification examinations.

## Learning outcomes and qualification

As mentioned previously, the GDC has set out the outcomes that dental nurses must be able to demonstrate by the end of their training period, in order to become a registrant and be deemed ‘fit to practise’. Within a training course, demonstration of these outcomes is met through education, training and assessment, and they are therefore referred to as ‘learning outcomes’. They are derived from the GDC’s own *Standards for Dental Professionals* document, and include the requirements set by the GDC for lifelong learning to be achieved. In the UK, student dental nurses can meet the training requirements by following an approved course and passing either the NEBDN National Diploma examination or the City & Guilds Level 3 Diploma in Dental Nursing examination.

The GDC learning outcomes have been developed so that a student who achieves them can be said to be competent – they can practise safely, effectively and professionally as a dental nurse. The vast majority of the learning outcomes are actually set, word for word, for each dental professional category, from the dentist through to the dental technician. Once achieved, they demonstrate that the student has the knowledge, skills, attitudes and behaviours required to become a GDC registrant.

To understand what is required from student dental nurses during their training, education and assessment, the following interpretations of these key terms may be useful.

- **Knowledge** – the underpinning, theoretical information gained from learning or experience, which gives the student understanding of a subject.
- **Skills** – the special abilities acquired by learning and practice to be able to complete a task, often manually or verbally.

- **Attitudes and behaviours** – the moral and ethical beliefs held by the student which demonstrate their values and priorities, and guide their actions.

Students must exhibit all of these attributes to be considered as professional dental nurses after qualification, and be entered onto the GDC Register. They must then maintain and improve upon these qualities throughout their working life, to stay on the Register.

The GDC learning outcomes are grouped into four domains for all registrants, and their specific relevance to the dental nurse is as follows.

- **Clinical** – described as the range of skills required to deliver direct care, where registrants interact with patients.
- **Communication** – described as the skills involved in effectively interacting with patients, their representatives, the public and colleagues, and recording appropriate information to inform patient care.
- **Professionalism** – described as the knowledge, skills and attitudes/behaviours required to practise in an ethical and appropriate way, putting patients' needs first and promoting confidence in the dental team.
- **Management and leadership** – described as the skills and knowledge required to work effectively in a dental team, manage own time and resources, and contribute to professional practice.

The NEBDN National Diploma curriculum has been designed to follow these domains and learning outcomes very closely, with more detail given in many areas, as necessary. The glossary of terms has been reproduced in Appendix 1. Details of the qualification itself are given at the end of this chapter, together with information on the C&G Level 3 Diploma.

## Student 'fitness to practise'

The GDC's role in regulating the dental profession begins when any student enrolls on a training course and is deemed to be 'in training'. This is irrespective of the category of the future registrant (whether a dentist, dental nurse and so on), or whether the training is being delivered in a dental hospital, further education college or in the dental workplace. All healthcare regulators are required to ensure the safety of patients while being treated by healthcare students, and to ensure that they are fit to practise at the point of registration. While the student dental nurse would not be in a position to 'treat' a patient as such, certain standards of professionalism are quite rightly expected of them, as with any other healthcare student.

Some of the areas of concern that may draw the attention of the GDC to a particular student in relation to issues surrounding their fitness to practise may come as a surprise to some, especially when events have occurred outside the training course or the workplace. While those allegations or areas of concern involving the police (whether resulting in a conviction or a caution) are bound to be considered by the GDC in fitness to practise hearings, other circumstances (such as cheating in an examination or having a poor work attitude) may be erroneously considered to have little to do with the regulator. However, actions and behaviours such as these latter examples may give an overall impression of an unprofessional attitude by the student to the public, and are therefore of great concern to the GDC. Further examples of the types of allegations or convictions that may cause concern and bring into question a student's fitness to practise are set out in Table 3.1 in Chapter 3.