



# **Respiratory Nursing at a Glance**

**Edited by  
Wendy Preston  
Carol Kelly**



Association of Respiratory  
Nurse Specialists

**WILEY Blackwell**





# **Respiratory Nursing at a Glance**

This title is also available as an e-book.  
For more details, please see  
**[www.wiley.com/buy/9781119048305](http://www.wiley.com/buy/9781119048305)**  
or scan this QR code:





# Respiratory Nursing at a Glance

**Edited by**

**Wendy Preston**, RGN, PGCHETL, PG Cert in Non-medical  
prescribing, BSc, MSc

Nurse Consultant  
George Eliot Hospital  
Nuneaton, UK

**Carol Kelly**, RN, PGCHETL, BSc, MA, PhD

Senior Lecturer  
Postgraduate Medical Institute  
Faculty of Health and Social Care  
Edge Hill University  
Ormskirk, UK

**Series Editor: Ian Peate**



Association of Respiratory  
Nurse Specialists

**WILEY** Blackwell



This edition first published 2017 © 2017 by John Wiley and Sons, Ltd  
*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  
111 River Street, Hoboken, NJ 07030-5774, 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 organization 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 organization 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***

Names: Preston, Wendy, editor. | Kelly, Carol (Carol Ann), editor.  
Title: Respiratory nursing at a glance / edited by Wendy Preston, Carol Kelly.  
Other titles: At a glance series (Oxford, England)  
Description: Chichester, West Sussex ; Hoboken, NJ : John Wiley & Sons Inc.,  
2017. | Series: At a glance series | Includes bibliographical references and index.  
Identifiers: LCCN 2016007514 | ISBN 9781119048305 (pbk.) | ISBN 9781119048299  
(Adobe PDF) | ISBN 9781119048275 (epub)  
Subjects: | MESH: Respiratory Tract Diseases—nursing | Handbooks  
Classification: LCC RC735.5 | NLM WY 49 | DDC 616.2/004231—dc23  
LC record available at <http://lccn.loc.gov/2016007514>

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: © Getty/IAN HOOTON/SPL

Set in 9.5/11.5pt Minion Pro by Aptara

# Contents



*Contributors* vii

*Preface* viii

*About ARNS* ix

## Part 1

### The context of respiratory nursing 1

- 1 The origins of respiratory nursing 2
- 2 Working in secondary care 4
- 3 Working in primary care 5
- 4 Ambulatory, intermediate and tertiary care 6
- 5 The future of respiratory nursing 7
- 6 Respiratory public health 8

## Part 2

### Respiratory health 11

- 7 The respiratory system 12
- 8 Preventing respiratory disease 14
- 9 Epidemiology and contributing factors 16
- 10 Smoking and smoking cessation 18
- 11 Exercise and pulmonary rehabilitation 20
- 12 Nutrition and hydration 22
- 13 The upper airways 24
- 14 Respiratory disease and sexuality 26

## Part 3

### Assessment and diagnosis of respiratory disease 29

- 15 Respiratory history taking 30
- 16 Respiratory clinical examination 32
- 17 Measuring dyspnoea 34
- 18 Sputum assessment 36
- 19 Pulse oximetry 38
- 20 Blood gas sampling and analysis 40
- 21 Spirometry 42
- 22 Measuring quality in healthcare 44
- 23 Assessing anxiety and depression 46

## Part 4

### Respiratory diseases 49

- 24 Asthma 50
- 25 Chronic obstructive pulmonary disease 52
- 26 Pleural disease 54
- 27 Lung cancer 56
- 28 Obstructive sleep apnoea syndrome 58
- 29 Acute respiratory infections 60
- 30 Cystic fibrosis 62
- 31 Bronchiectasis 64

- 32** Occupational and environmental lung disease 66
- 33** Interstitial lung disease 68
- 34** Sarcoidosis 70
- 35** Pulmonary tuberculosis 72
- 36** Venous thromboembolism and pulmonary embolism 74
- 37** HIV and respiratory disease 76

## **Part 5**

### **Models of care 79**

- 38** Care pathways and care bundles 80
- 39** Self-management in chronic respiratory disease 82
- 40** Telemedicine and telehealth 84
- 41** Patient education 86
- 42** Voluntary organisations and patient support groups 88

## **Part 6**

### **Respiratory medication 91**

- 43** Pharmacology and prescribing 92
- 44** Inhaler technique 94
- 45** Nebuliser therapy 96
- 46** Emergency oxygen therapy 98
- 47** Domiciliary oxygen therapy 100
- 48** Other routes of administration 102
- 49** Adherence and concordance 103

## **Part 7**

### **Acute care of the respiratory patient 105**

- 50** Respiratory failure 106
- 51** Pre-hospital care 108
- 52** Non-invasive and invasive ventilation 110
- 53** Pleural procedures and management 112
- 54** Tracheostomy care and management 114

## **Part 8**

### **Supportive and palliative care 117**

- 55** Communication 118
- 56** Psychosocial impact of respiratory disease 120
- 57** Management of dyspnoea 122
- 58** Anxiety and depression in respiratory disease 124
- 59** Other symptom management 126
- 60** NIV as a domiciliary therapy 128
- 61** End-of-life care 130
- 62** Families and carers 132

*References 134*

*Index 139*



# Contributors



**Joe Annandale**, Chapters 52, 60

**Katy Beckford**, Chapter 11

**Andrew Booth**, Chapter 44

**Joanne Bousanquet**, Chapter 6

**Michaela Bowden**, Chapters 12, 45

**Dave Burns**, Chapters 13, 49

**Julie Cannon**, Chapter 32

**Caroline Cowperthwaite**, Chapter 30

**Jo Coyle**, Chapter 12

**Alexandra Christie**, Chapter 11

**Nicola Cross**, Chapter 51

**Jennifer Daniels**, Chapter 30

**Annette Duck**, Chapters 55, 61

**Jan Dunne**, Chapter 30

**Paula Dyce**, Chapter 30

**Jenny Fleming**, Chapter 57

**Elizabeth Gillam**, Chapter 53

**Beverly Govin**, Chapter 30

**Karen Heslop-Marshall**, Chapters 56, 58

**Matthew Hodson**, Chapters 22, 25

**Tracy Kates**, Chapter 27

**Carol Kelly**, Chapters 7, 17, 57

**Lynn Keogan**, Chapters 59, 62

**Dave Lynes**, Chapter 40

**Victoria Malone**, Chapter 30

**Mike McKevitt**, Chapter 42

**Shauna McKibben**, Chapters 8, 9

**Tom Moreton**, Chapters 26, 36, 37, 38

**Sarah Murphy**, Chapter 35

**Sandra Olive**, Chapters 19, 46, 47

**Lorraine Ozerovitch**, Chapter 31

**Minesh Parbat**, Chapter 48

**Ella Pereira**, Chapter 40

**Wendy Preston**, Chapters 2, 3, 4, 10, 29, 36, 38, 48, 54

**Sam Prigmore**, Chapter 5

**Jaclyn Proctor**, Chapter 16

**Heather Randle**, Chapter 3

**Elaine Reid**, Chapter 53

**Jo Riley**, Chapters 21, 43

**Ann-Marie Russell**, Chapters 23, 33, 34

**Jane Scullion**, Chapter 14

**Rebecca Sherrington**, Chapter 1

**Clare Sumner**, Chapter 30

**Heidi Swift**, Chapters 20, 50

**Lisa Taylor**, Chapter 24

**Emma Vincent**, Chapter 2

**Liz Walker**, Chapter 28

**Lindsay Welch**, Chapter 18

**Carol White**, Chapter 15

**Steven Wibberley**, Chapter 42

**Jane Young**, Chapters 39, 41



# Preface

**R**espiratory nursing covers a diverse range of respiratory diseases including acute, chronic and acute on chronic presentations. Nurses caring for these patients need a variety of skills and approaches to provide holistic management in both the short and the long term. An insight into normal and abnormal anatomy and physiology is required but this needs to be related to the symptoms that the patient presents with; awareness of assessment, investigation, holistic treatment and care required for quality patient management are necessary in today's health care arena.

This book aims to provide a summary of topics related to respiratory nursing in an easy to read format with illustrations and diagrams to aid clarity. It is designed to provide a quick reference guide to common respiratory conditions, presentations and treatment options that require nursing care. Additionally, a focus on respiratory health will enable the nurse to promote preventative measures in both health and disease in order to prevent, minimise or control respiratory disease.

The book has been organised into parts, each containing chapters that focus on individual aspects of respiratory care. You may

choose to read the book as a whole in order to gain an overview of respiratory nursing issues, or you may use it as a reference book which will guide you to further reading for each topic.

*Respiratory Nursing at a Glance* is aimed at nurses, health care professionals and students (nursing, medical and professions allied to medicine) at all levels providing an overview of relevant topics. As part of an established series it will be large enough to provide informative illustrations while being concise enough to provide quick reading and an overview of topics. The focus of nursing care adds depth by including holistic care from birth to death covering subjects like childhood development of the respiratory system, communication and end-of-life care. This book spans both acute and chronic spectra of respiratory disease and in doing so provides a comprehensive overview of the various disease trajectories followed by the majority of patients.

Wendy Preston  
Carol Kelly

# About ARNS



**T**his book has been developed in collaboration with the Association of Respiratory Nurse Specialists (ARNS), which was created in 1997 by respiratory nurses and is still the only nursing-led organisation within the respiratory specialty field in the UK. ARNS has approximately 1500 members who are represented by an executive committee consisting of a broad range of expert respiratory nurses from a variety of backgrounds: nurse consultants,

researchers, academics and nurse specialists working within primary, secondary and tertiary care.

ARNS collaborates with other respiratory care organisations, as well as government and NHS initiatives in order to influence policy and developments for respiratory services, such as the National Institute for Health and Care Excellence (NICE) and British Thoracic Society (BTS) Guidelines.





# The context of respiratory nursing

## Part 1

### Chapters

- 1 The origins of respiratory nursing 2**
- 2 Working in secondary care 4**
- 3 Working in primary care 5**
- 4 Ambulatory, intermediate and tertiary care 6**
- 5 The future of respiratory nursing 7**
- 6 Respiratory public health 8**

### Overview

Part 1 sets out to orientate the reader to the context of respiratory nursing, from its historical roots, through the various present day working environments where respiratory patients are cared for, and offers a vision for the future. It is hoped this will demonstrate the diversity and wide-reaching influence of respiratory nursing.



## 1

# The origins of respiratory nursing

**Box 1.1 Criteria for the nurse specialist**

Source: Adapted from Giles M, et al. (2014)  
*BMC Nursing*, 13: 30.

- Practitioner involved in direct care
- Teacher of patients, relatives, staff and students
- Consultant for other nurses and other professions
- Researcher in relation to area of specialisation
- Change agent
- Manager

**Figure 1.1** TB Ward, National Jewish Hospital

Source: [https://commons.wikimedia.org/wiki/File:National\\_Jewish\\_Hospital2.jpg](https://commons.wikimedia.org/wiki/File:National_Jewish_Hospital2.jpg). CC0-1.0 public domain.





## The concept of specialist nursing

Before the influence of Florence Nightingale and the advent of modern nursing, the concept of nursing specialties was unknown. Nurses were expected to provide nursing care no matter what illness afflicted their patients. Patients in hospital were not segregated according to diseases until the early years of the twentieth century, when they were placed in specific areas according to their medical diagnosis. Following scientific and medical advances made during and after the Second World War, this knowledge gave the impetus to emerging medical specialties (Donahue, as cited in MacKinnon, 2002).

While nurses have been working within specialisms for over a century, Castledine (2004) argues that the first development of the clinical nurse specialist emerged in the UK in the mid 1970s. He argued that while the numbers of specialist nurses were increasing in the early 1980s, there was lack of guidance on the criteria for such posts and the first generation of nurse specialists developed lacking direction or control. It was this lack of evaluation or audit that later led to problems in identifying the necessary characteristics of the clinical nurse specialist (Castledine, 2004).

## What is a specialist nurse?

The second generation of clinical nurse specialists evolved in the 1990s in response to the publication of the Scope of Professional Practice (UKCC, 1992) and in reaction to the reduction in junior doctors' hours and shortages of medical staff. However, it was not until the publication of the PREP (post Registration, Education and Practice) report (UKCC, 1994) that specialist nursing practice was defined as 'Exercise higher levels of judgement and discretion in clinical care. Demonstrate higher levels of clinical decision making, monitor and improve standards of care through supervision of practice, clinical nursing audit, developing and leading practice, contributing to research, teaching and supporting professional colleagues' (UKCC, 1994).

Although there were more specialist nurses, particularly respiratory nurse specialists, in post by the mid 1990s, within the nursing press it was argued that very few fulfilled the criteria set out in the literature (Christmann, 1965; Peplan, 1965; Oda, 1977) and summarised by Girard (1987) (Box 1.1).

## The respiratory nurse specialist

The roots of respiratory nursing can be traced to the care and management of patients with tuberculosis (TB) and included roles such as the TB family visitor (similar to today's health visitor) and the ward nurse who attended patients on the old TB wards (Figure 1.1).

Since the 1980s, as advances in medicine and changes in the delivery of health care continued, this resulted in an increasing number of respiratory nurse specialists working in a wide range of respiratory settings, for example working within TB clinics, sleep apnoea services, asthma and chronic obstructive pulmonary disease (COPD) nurse led clinics, ventilation services, pulmonary rehabilitation programmes and running nurse-led community based centres for people with respiratory disease. As the number of nurses working in respiratory care settings has increased, the improvements in knowledge and evidence of the psychosocial

issues related to respiratory care, respiratory management and technologies have made a significant difference to the understanding of the needs of patients living with a respiratory condition.

Since the 1990s, the role of the nurse consultant has evolved including within respiratory care. There are a number of such posts currently established across the UK, although those roles vary and titles are inconsistent nationwide. These inconsistencies and variability in nurse consultant roles still needs to be addressed across all specialities (Giles et al. 2014).

## Today's respiratory nurses

It should not be forgotten that there are many other nurses, in hospital and community settings, as well as other professionals and providers who contribute to the specialist care of the person with a respiratory condition. Frequent changes in political climate, organisational changes, rising costs, pressures on health services and rapid advance of medicine and technology over the last 20 years have inevitably led to the creation of new and more effective ways for improving health care (BTS, 2014). With the predicted demands in numbers of the population with respiratory conditions in the UK, and the evidence of increasing morbidity, change is needed if the care of people with respiratory conditions in the UK is to improve.

While it is recognised that new roles will be developed (BTS, 2014), and specialist nurses roles will continue to evolve, health care providers should recognise the contributions to respiratory care made by nurse specialists over the past 20 years. There is a need to be cautious about replacing any roles before we have a clear idea of the pros or cons of specialist nurses. Modern respiratory nursing requires skill in leadership, management and providing compassionate nursing care and also recognising the cultural, physical, psychosocial and spiritual framework in which people with respiratory diseases live.

## Summary

The development of advanced or specialist nursing has been long and complex, but while this process has led to innovations and developments within nursing, it could be argued that it has also led to confusion about what specialist nursing comprises. Specialist nursing is one of the most scrutinised and researched concepts, but there is still a long way to go. Specialist nursing can be described as a role, specialist or generalist in nature, or a level of practice, and as scoping areas of clinical, managerial, educational and research skill. Far more research is needed on the role and its effectiveness within clinical practice.

## Further reading

British Thoracic Society (BTS). (2014) The role of the respiratory specialist in the integrated care team: A report from the British Thoracic Society. <https://www.brit-thoracic.org.uk/document-library/delivery-of-respiratory-care/integrated-care/role-of-the-respiratory-specialist-in-the-integrated-care-team-june-2014/> (accessed 20 February 2016).

## 2

## Working in secondary care

The delivery of effective, competent and safe respiratory care is a priority for specialist nurses working within hospitals.

Engaging patients in their own health care is now recognised as a major component in enhancing a service that is not only patient-centred, but also of high quality. As much respiratory care is of chronic disease, it has to be organised in a way that is integrated with other resources so that contradictions and overlaps are avoided. This signposting and sharing of resources promotes the most effective and efficient combination of health professionals needed to deliver the complex care needs of this group of patients.

### The role of the respiratory nurse

The role of the respiratory nurse in secondary care is vital in coordinating a care plan that is holistic, dignified and of a compassionate nature. Holistic patient care requires a multi-disciplinary team (MDT) approach involving health care professionals from a range of health and social settings and from a variety of organisations (e.g. in the UK from the NHS and local authority). The MDT includes physiotherapists, occupational therapists, psychologists and pharmacists. All have a key role in holistic care and input which may be for a short period (e.g. to give an opinion or specific therapy) or long term as part of a care plan (e.g. care provider).

### What is involved?

Secondary care predominantly addresses diagnostics in the patient with complex needs and the acute and palliative changes that occur in chronic respiratory conditions, such as asthma, chronic obstructive pulmonary disease (COPD), interstitial lung disease, bronchiectasis and cystic fibrosis. In addition, the management of infections such as pneumonia, influenza and tuberculosis are common. The respiratory nurse provides care around exacerbation management, smoking cessation, disease education, energy conservation, rehabilitation, chest clearance and palliation. The role has been identified as a key component in providing support for the patient and their carer. In recent decades the number of different types of respiratory nurses employed by the NHS has increased and become more specialised. Roles are varied, with some covering respiratory disease in general with perhaps an area of speciality, while others are very specialised and focus on patients with a particular diagnosis, for example interstitial lung disease.

### Advancing practice

Different grades of nurses have evolved, with training now available to advance practice for health assessment, diagnostics and independent prescribing. Respiratory nurses can be caseworkers

for their patients to allow coordination and continuity of care. The role is enhanced in many ways:

- 1 Problem solver
- 2 Advocacy
- 3 Educator
- 4 Leader
- 5 Signposting
- 6 Surrogate for resources
- 7 Researcher
- 8 Prescriber.

In turn, this specialist role can have a positive effect on NHS resources through improved nurse metrics and patient satisfaction, reduced admissions and readmissions and improved self-management strategies. However, with financial pressures putting these roles under threat, specialist nurses need to ensure they have evidence to prove they enhance services, and that they are cost effective. Audit, metrics and acquiring commissioned tariffs are crucial for long-term sustainability.

Secondary care provision varies significantly. For example, in the UK, services run across into or from primary care to provide integration and some trusts also manage GP practices. Ambulatory care provides acute care without hospital admission and is discussed further in Chapter 4.

Changing contracts, raised patient expectation and pay stagnation continue to affect morale in the current NHS. However, respiratory nursing remains a challenging and rewarding specialism which allows practitioners to assess, provide and evaluate evidence-based care on the 'front line'.

### National Early Warning Score

The national Early Warning Score (EWS) is utilised in the secondary care environment to help identify patients who are clinically unstable and to prompt early escalation in their clinical management. Many hospitals use a EWS score routinely. For patients with chronic respiratory diseases their baseline score may be high because of increased respiratory rates and low oxygen saturations and in this case a modified score can be used. It is important that a comprehensive history includes the patient's baseline function and observations (e.g. oxygen saturation levels). Most systems can be adjusted to take this into account to avoid inappropriate escalation.

### Further reading

Royal College of Physicians (2015) National Early Warning Score (EWS). <https://www.rcplondon.ac.uk/projects/outputs/national-early-warning-score-news> (accessed 20 February 2016).