

*The* ROYAL MARSDEN  
NHS Foundation Trust

Student Edition

# The Royal Marsden Manual of Clinical Nursing Procedures *Ninth Edition*

Edited by

**Lisa Dougherty, Sara Lister and Alexandra West-Oram**



WILEY Blackwell



**The Royal Marsden Manual of**  
Clinical Nursing  
Procedures



# The Royal Marsden Manual of Clinical Nursing Procedures

*Ninth Edition*

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# Foreword to the ninth edition

As the Chief Nurse of The Royal Marsden NHS Foundation Trust, and a contributor and clinical user of the manual for many years, it is a special pleasure and honour to be asked to introduce the ninth Student edition of *The Royal Marsden Manual of Clinical Nursing Procedures*. The manual is internationally renowned and used by nurses across the world to ensure their practice is evidence based and effective. As information becomes ever more available to the consumers of healthcare, it is essential that the manual is updated frequently so that it reflects the most current evidence to inform our clinical practice.

More than ever in 2015, nurses need to be able to assure the public, patients and their families that care is based on the best available evidence. As nurses seeking to improve our care, it is essential that we are able to critically analyse our judgements in the light of current knowledge. For all of us working with patients and their families there is an imperative to question and renew our practice using the many sources of knowledge available to us. In the busy world of clinical practice in a ward, unit or in the community, it can be challenging to find time to search for the evidence and this is where the Student edition of *The Royal Marsden Manual of Clinical Nursing Procedures* is a real practical help.

As in the eighth edition, reviewing the evidence or sources of knowledge has been made more explicit with each level of evidence graded. This grading provides the reader with an understanding of whether the reference comes from a randomized controlled trial, national or international guidance, or from expert opinion. At its best, clinical nursing care is an amalgam of a sensitive therapeutic relationship coupled with effective care based on the best evidence that exists. Some areas of practice have attracted international research such as cardiopulmonary resuscitation and infection prevention and control; other areas of practice have not attracted such robust research and therefore it is more of a challenge to ensure evidence-based care. Each time a new edition of the manual is prepared, we reflect on the gaps in research and knowledge; this provides the impetus to develop new concept analyses and develop further research studies. In this new edition, the chapters have incorporated risk management, and legal and professional issues. In addition, the procedures were tried out by the student nurses from Kingston

University and St Georges University of London to ensure they worked in practice. This new student edition incorporates a breadth of tools to support your learning including objectives at the beginning of each chapter, and a variety of learning activities that will either test your knowledge or prompt you to consider how you may apply what you are learning in practice.

As you look at the list of contributors to the manual you will see that this edition has continued to be written by nurses who are expert and active in clinical practice. This has the double advantage of ensuring that this manual reflects the reality of practice, but also ensures that nurses at The Royal Marsden NHS Foundation Trust are frequently reviewing the evidence and reflecting upon their care.

A textbook devoted to improving and enhancing clinical practice needs to be alive to the clinical practitioner. You will see that this edition has continued the improvement in format, including many more figures and photographs to make the manual more effective in clinical care.

As I commend this ninth Student edition of *The Royal Marsden Manual of Clinical Nursing Procedures* to you, I am aware that it will be used in many different countries and settings. Having had the privilege of visiting and meeting nurses across the world I know that there are more commonalities than differences between us. The common theme is, of course, the need to ensure that we as nurses provide care that is individually and sensitively planned and that it is based on the best available evidence. The Student edition of *The Royal Marsden Manual of Clinical Nursing Procedures* is a wonderful resource for such evidence and I hope it will be widely used in all clinical settings across the world.

Finally, I would like to pay a warm tribute to the excellent work undertaken by the three editors, Lisa Dougherty, Sara Lister and Alexandra West-Oram, and to all the nurses and allied health professionals at The Royal Marsden Hospital who have worked so hard on this ninth edition.

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# Acknowledgements

A book is a team effort and never more so than with this Student Edition of *The Royal Marsden Manual of Clinical Nursing Procedures*.

Since the first edition of the manual was published in 1984, the range of procedures in nursing has grown in complexity, and the depth of the theoretical content underpinning them has increased considerably. Authors have, therefore, had to keep up-to-date with the ever-changing research evidence and write new, as well as update existing, material. This continues to be a collaborative task carried out by knowledgeable, expert nurses in partnership with members of the multidisciplinary team including pharmacists, physiotherapists, occupational therapists, dietitians, speech therapists, radiographers, anaesthetists, operating department practitioners and psychological care.

So, we must thank every member of the 'team' who has helped to produce this edition, for their time, effort and perseverance. An additional challenge has been to co-ordinate the increased number of contributors to each chapter. This responsibility has fallen to the lead chapter authors, so, for this, they deserve a special acknowledgement and thanks for their ability to integrate all the contributions and create comprehensive chapters.

We especially appreciate the work done by Anne Tibbles, Senior Lecturer Nursing, and the nursing students at Kingston University and St George's University of London, who reviewed all of the procedures used by students and gave us invaluable feedback on how they work in practice. We would also like to thank some other key people: Dale Russell and the library team of the David Adams Library at The Royal Marsden School of Cancer Nursing and Rehabilitation for their help and support in providing the references required by the authors and setting up the Endnote system; Stephen Millward and the medical photography team for all the new photographs; our families and friends who continue to encourage us, especially during the last two years – the time it takes to edit the manual; and, finally, our thanks go to Martin Davies, Magenta Styles, Karen Moore, Tom Bates and Helen Harvey at Wiley for their advice and support in all aspects of the publishing process.

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# List of abbreviations

<b>AAC</b>	augmentive or alternative communication	<b>CTZ</b>	chemoreceptor trigger zone
<b>AAGBI</b>	Association of Anaesthetists of Great Britain and Ireland	<b>CVA</b>	cerebrovascular accident
<b>ABG</b>	arterial blood gas	<b>CVAD</b>	central venous access device
<b>ABPM</b>	ambulatory blood pressure monitoring	<b>CVC</b>	central venous catheter
<b>AD</b>	autonomic dysreflexia	<b>CVP</b>	central venous pressure
<b>ADH</b>	antidiuretic hormone	<b>CXR</b>	chest X-ray
<b>ADR</b>	adverse drug reaction	<b>DBE</b>	deep breathing exercises
<b>A&amp;E</b>	accident and emergency	<b>DIC</b>	disseminated intravascular coagulation
<b>AED</b>	automated external defibrillator	<b>DKA</b>	diabetic ketoacidosis
<b>AIDS</b>	acquired immune deficiency syndrome	<b>DM</b>	diabetes mellitus
<b>ALARP</b>	as low as reasonably practicable	<b>DMSO</b>	dimethylsulphoxide
<b>ALS</b>	advanced life support	<b>DNA</b>	did not attend
<b>ALT</b>	alanine aminotransferase	<b>DNAR</b>	do not attempt resuscitation
<b>ANH</b>	acute normovolaemic haemodilution	<b>DPI</b>	dry powder inhaler
<b>ANP</b>	atrial natriuretic peptide	<b>DRE</b>	digital rectal examination
<b>ANS</b>	autonomic nervous system	<b>DRF</b>	digital removal of faeces
<b>ANTT</b>	aseptic non-touch technique	<b>DVT</b>	deep vein thrombosis
<b>AP</b>	alkaline phosphatase/anteroposterior/alternating pressure	<b>EBN</b>	evidence-based nursing
<b>APTR</b>	activated partial thromboplastin ratio	<b>EBP</b>	evidence-based practice
<b>ARDS</b>	adult respiratory distress syndrome	<b>ECF</b>	extracellular fluid
<b>ART</b>	assisted reproductive techniques	<b>ECG</b>	electrocardiogram
<b>ASA</b>	American Society of Anesthesiologists	<b>ECM</b>	extracellular matrix
<b>AST</b>	aspartate aminotransferase	<b>EDTA</b>	ethylenediamine tetra-acetic acid
<b>AT</b>	anaerobic threshold	<b>ELISA</b>	enzyme-linked immunosorbent assay
<b>AV</b>	atrioventricular	<b>EMR</b>	endoscopic mucosal resection
<b>AVPU</b>	alert, verbal, pain, unresponsive	<b>ENT</b>	Ear, Nose and Throat
<b>BAL</b>	bronchoalveolar lavage	<b>ESD</b>	endoscopic submucosal dissection
<b>BIA</b>	bio-electrical impedance analysis	<b>ESR</b>	erythrocyte sedimentation rate
<b>BiPAP</b>	bilevel positive airway pressure	<b>ETT</b>	endotracheal tube
<b>BLS</b>	basic life support	<b>EU</b>	European Union
<b>BME</b>	black and minority ethnic	<b>EWS</b>	early warning scoring
<b>BMI</b>	body mass index	<b>FBC</b>	full blood count
<b>BNF</b>	British National Formulary	<b>FEEES</b>	fibreoptic endoscopic evaluation of swallowing
<b>BP</b>	blood pressure	<b>FFP</b>	fresh frozen plasma
<b>BSE</b>	bovine spongiform encephalopathy	<b>FRC</b>	functional residual capacity
<b>CAUTI</b>	catheter-associated urinary tract infection	<b>FVC</b>	forced vital capacity
<b>CCU</b>	coronary care unit	<b>FWB</b>	fully weight bearing
<b>cfu</b>	colony-forming unit	<b>GCS</b>	Glasgow Coma Scale
<b>CHG</b>	chlorhexidine gluconate	<b>GFR</b>	glomerular filtration rate
<b>CJD</b>	Creutzfeldt-Jakob disease	<b>GGT</b>	gamma-glutamyl transpeptidase
<b>CLP</b>	continuous low pressure	<b>GI</b>	gastrointestinal
<b>CMV</b>	cytomegalovirus	<b>GMC</b>	General Medical Council
<b>CNCP</b>	chronic non-cancer pain	<b>GM-CSF</b>	granulocyte macrophage-colony stimulating factor
<b>CNS</b>	central nervous system	<b>GSL</b>	general sales list medicine
<b>CO</b>	cardiac output	<b>GTN</b>	glyceryl trinitrate
<b>COAD</b>	chronic obstructive airways disease	<b>HBPM</b>	home blood pressure monitoring
<b>COPD</b>	chronic obstructive pulmonary disease	<b>HBV</b>	hepatitis B virus
<b>CPAP</b>	continuous positive airway pressure	<b>HCA</b>	healthcare assistant
<b>CPET</b>	cardiopulmonary exercise testing	<b>HCAI</b>	healthcare-associated infection
<b>CPNB</b>	continuous peripheral nerve block	<b>HCP</b>	healthcare professional
<b>CPR</b>	cardiopulmonary resuscitation	<b>HCV</b>	hepatitis C virus
<b>CRP</b>	C-reactive protein	<b>HDU</b>	high-dependency unit
<b>CSF</b>	cerebrospinal fluid	<b>HEPA</b>	high-efficiency particulate air
<b>CSP</b>	Chartered Society of Physiotherapy	<b>HFEA</b>	Human Fertilisation and Embryology Authority
<b>CSU</b>	catheter specimen of urine	<b>HFOT</b>	high-flow oxygen therapy
<b>CT</b>	computed tomography	<b>HIV</b>	human immunodeficiency virus
		<b>HLA</b>	human leucocyte antigen
		<b>HME</b>	heat and moisture exchanger

## XXIV LIST OF ABBREVIATIONS

<b>HOCF</b>	Home Oxygen Consent Form	<b>NSAID</b>	non-steroidal anti-inflammatory drug
<b>HOOF</b>	Home Oxygen Ordering Form	<b>NWB</b>	non-weight bearing
<b>HPA</b>	Health Protection Agency	<b>ODP</b>	operating department practitioner
<b>HPV</b>	human papillomavirus	<b>OGD</b>	oesophagogastrroduodenoscopy
<b>HR</b>	heart rate	<b>OSCE</b>	objective structured clinical examination
<b>HSE</b>	Health and Safety Executive	<b>OT</b>	occupational therapist
<b>HTLV</b>	human T cell leukaemia/lymphoma virus	<b>OTC</b>	over the counter
<b>IAD</b>	incontinence-associated dermatitis	<b>P</b>	pharmacy-only medicine
<b>IASP</b>	International Association for the Study of Pain	<b>PACU</b>	post-anaesthetic care unit
<b>IBCT</b>	incorrect blood component transfused	<b>PAD</b>	pre-operative autologous donation
<b>IC</b>	inspiratory capacity	<b>PART</b>	patient-at-risk team
<b>ICF</b>	intracellular fluid	<b>PCA</b>	patient-controlled analgesia
<b>ICP</b>	intracranial pressure	<b>PCEA</b>	patient-controlled epidural analgesia
<b>ICS</b>	intraoperative cell salvage	<b>PDPH</b>	post-dural puncture headache
<b>ICSI</b>	intracytoplasmic sperm injection	<b>PE</b>	pulmonary embolus
<b>IM</b>	intramuscular	<b>PEA</b>	pulseless electrical activity
<b>INR</b>	international normalized ratio	<b>PEEP</b>	positive end-expiratory pressure
<b>IO</b>	intraosseous	<b>PEF</b>	peak expiratory flow
<b>IPCT</b>	infection prevention and control team	<b>PEG</b>	percutaneous endoscopically placed gastrostomy
<b>ISC</b>	intermittent self-catheterization	<b>PEP</b>	post-exposure prophylaxis
<b>ITDD</b>	intrathecal drug delivery	<b>PESA</b>	percutaneous epididymal sperm aspiration
<b>ITU</b>	intensive therapy unit	<b>PGD</b>	Patient Group Direction
<b>IV</b>	intravenous	<b>PHCT</b>	primary healthcare team
<b>JVP</b>	jugular venous pressure	<b>PHN</b>	post-herpetic neuralgia
<b>LA</b>	local anaesthetic	<b>PICC</b>	peripherally inserted central cannula
<b>LBC</b>	liquid-based cytology	<b>PN</b>	parenteral nutrition
<b>LCT</b>	long-chain triglyceride	<b>PNS</b>	peripheral nervous system
<b>LMA</b>	laryngeal mask airway	<b>POA</b>	pre-operative assessment
<b>LMN</b>	lower motor neurone	<b>POCT</b>	point-of-care testing
<b>LOS</b>	lower oesophageal sphincter	<b>POM</b>	prescription-only medicine
<b>LPA</b>	Lasting Power of Attorney	<b>PONV</b>	post-operative nausea and vomiting
<b>MAOI</b>	monoamine oxidase inhibitor	<b>PPE</b>	personal protective equipment
<b>MAP</b>	mean arterial pressure	<b>PRBC</b>	packed red blood cell
<b>MAR</b>	medicines administration record	<b>PrP</b>	prion protein
<b>MC&amp;S</b>	Microscopy, Culture and Sensitivity	<b>PSCC</b>	primary/benign spinal cord compression
<b>MCT</b>	medium-chain triglyceride	<b>PT</b>	physiotherapist
<b>MDA</b>	Medical Devices Agency	<b>PTFE</b>	polytetrafluoroethylene
<b>MDI</b>	metered dose inhaler	<b>PUO</b>	pyrexia of unknown origin
<b>MDT</b>	multidisciplinary team	<b>PVC</b>	polyvinyl chloride
<b>MESA</b>	microepididymal sperm aspiration	<b>PWB</b>	partially weight bearing
<b>MET</b>	medical emergency team	<b>PWO</b>	partial withdrawal occlusion
<b>MHRA</b>	Medicines and Healthcare Products Regulatory Agency	<b>RA</b>	right atrium
<b>MI</b>	myocardial infarction	<b>RAS</b>	reticular activating system
<b>MIC</b>	minimum inhibitory concentration	<b>RBC</b>	red blood cell
<b>MMP</b>	matrix metalloprotease	<b>RCN</b>	Royal College of Nursing
<b>MPQ</b>	McGill Pain Questionnaire	<b>RCT</b>	randomized controlled trial
<b>MRC</b>	Medical Research Council	<b>RFID</b>	radiofrequency identification tag
<b>MRI</b>	magnetic resonance imaging	<b>RIG</b>	radiologically inserted gastrostomy
<b>MRSA</b>	meticillin-resistant <i>Staphylococcus aureus</i>	<b>RNI</b>	reference nutrient intake
<b>MS</b>	multiple sclerosis	<b>RSV</b>	respiratory syncytial virus
<b>MSCC</b>	metastatic spinal cord compression	<b>SA</b>	sinoatrial
<b>MSU</b>	midstream urine	<b>SaBTO</b>	Safety of Blood, Tissues and Organs
<b>MUAC</b>	mid upper arm circumference	<b>SAP</b>	Single Assessment Process
<b>MUST</b>	Malnutrition Universal Screening Tool	<b>SARS</b>	severe acute respiratory syndrome
<b>NAT</b>	nucleic acid testing	<b>SBAR</b>	Situation, Background, Assessment, Recommendation
<b>NBM</b>	nil by mouth	<b>SC</b>	subcutaneous
<b>NEWS</b>	National Early Warning Score	<b>SCC</b>	spinal cord compression
<b>NG</b>	nasogastric	<b>SCI</b>	spinal cord injury
<b>NHS</b>	National Health Service	<b>SGA</b>	subjective global assessment
<b>NHSCSP</b>	NHS cervical screening programme	<b>SHOT</b>	Serious Hazards of Transfusion
<b>NIPEE</b>	non-invasive positive end-expiration	<b>SIMV</b>	synchronized intermittent mandatory ventilation
<b>NIV</b>	non-invasive ventilation	<b>SIRS</b>	systemic inflammatory response syndrome
<b>NMC</b>	Nursing and Midwifery Council	<b>SIU</b>	spinal injuries unit
<b>NMDA</b>	N-methyl-D-aspartate	<b>SL</b>	semi-lunar
<b>NPC</b>	National Prescribing Centre	<b>SLT</b>	speech and language therapist
<b>NPSA</b>	National Patient Safety Agency	<b>SMBG</b>	self-monitoring of blood glucose
<b>NPWT</b>	negative pressure wound therapy	<b>SNRI</b>	serotonin-norepinephrine reuptake inhibitor
<b>NRAT</b>	Norgine Risk Assessment Tool	<b>SOP</b>	Standard Operating Procedure
<b>NRS</b>	numerical rating scale	<b>SPa</b>	suprapubic aspirate

<b>SSRI</b>	selective serotonin reuptake inhibitor	<b>UMN</b>	upper motor neurone
<b>SV</b>	stroke volume	<b>UTI</b>	urinary tract infection
<b>SVC</b>	superior vena cava	<b>VAD</b>	vascular access device
<b>swg</b>	standard wire gauge	<b>VAP</b>	ventilator-associated pneumonia
<b>TACO</b>	transfusion-associated cardiac overload	<b>VAT</b>	Venous Assessment Tool
<b>TA-GVHD</b>	transfusion-associated graft-versus-host disease	<b>VBG</b>	venous blood gas
<b>TB</b>	tuberculosis	<b>vCJD</b>	variant Creutzfeldt-Jakob disease
<b>TCA</b>	tricyclic antidepressant	<b>VDRL</b>	Venereal Disease Research Laboratory
<b>TED</b>	thromboembolic deterrent	<b>VEGF</b>	vascular endothelial growth factor
<b>TENS</b>	transcutaneous electrical nerve stimulation	<b>VF</b>	ventricular fibrillation
<b>TESE</b>	testicular sperm extraction	<b>VPF</b>	vascular permeability factor
<b>TIVA</b>	total intravenous anaesthesia	<b>V/Q</b>	ventilation/perfusion
<b>TPI</b>	<i>Treponema pallidum</i> immobilization	<b>VT</b>	ventricular tachycardia
<b>TRALI</b>	transfusion-related acute lung injury	<b>VTE</b>	venous thromboembolism
<b>TSE</b>	transmissible spongiform encephalopathy	<b>WBC</b>	white blood cell
<b>TSS</b>	toxic shock syndrome	<b>WBIT</b>	wrong blood in tube
<b>TTO</b>	to take out	<b>WHO</b>	World Health Organization
<b>TURBT</b>	transurethral resection of bladder tumour	<b>WOB</b>	work of breathing
<b>TURP</b>	transurethral resection of prostate	<b>WR</b>	Wassermann reaction



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