Orthopaedic and trauma nursing
An evidence-based approach to musculoskeletal care
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EDITED BY

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WILEY Blackwell
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Contributors

Thelma Begley, Assistant Professor in Children's Nursing, School of Nursing and Midwifery, Trinity College Dublin, MSc (Nursing), Bachelor Nursing Studies (Hons), Higher Diploma in Nursing Studies (Children's Nursing) & (Nurse Education), Orthopaedic Nursing Certificate, RGN, RCN, RNT

Thelma, a nurse for over 20 years, holds qualifications in both adult and child nursing. Her clinical experience includes adult, children and young people's medical and surgical nursing and in particular children's orthopaedic nursing. She has significant teaching experience in the development and delivery of undergraduate and postgraduate nursing programmes with specialist expertise in children’s and orthopaedic nursing. Thelma’s conference presentations and publications are related to these areas of interest. She is module leader on undergraduate, postgraduate and MSc Children’s Nursing programmes and is Course Coordinator for the Higher Diploma in Children’s Nursing in Trinity College.

Vanessa Blair, Staff Nurse, Belfast Health and Social Care Trust, Northern Ireland

Vanessa is an Australian-born and trained Registered Nurse, currently residing and working in Northern Ireland. Vanessa has gained experience across multiple nursing disciplines in what has been a varied career. She is currently developing specialist knowledge in orthopaedics and her experience of working in different nursing jurisdictions has provided her a platform for academic commentary on nursing best practice in orthopaedics. With a primary nursing degree at the University of New England, Australia, Vanessa has since completed a Certificate in Orthopaedics at Queen’s University, Belfast. Vanessa has had one publication and is an examiner for orthopaedic and trauma OSCE’s at Queen’s University Belfast.

Sonya Clarke (Editor), Senior Lecturer (Education), Discipline Lead for Children’s Nursing and Pathway Coordinator for continuing orthopaedic and trauma education programmes, School of Nursing & Midwifery, Queen’s University Belfast (QUB), Northern Ireland. MSc, PGCE (Higher education), PgCert (Pain management), BSc (Hons) Specialist Practitioner in Orthopaedic Nursing, RCN, RGN

Sonya’s career reflects adult and children’s nursing within orthopaedic and fracture trauma, with an additional 15 years’ clinical experience acquired as a Marie Curie nurse within palliative care. In 1988 Sonya commenced her RGN training and, through an appreciation of paediatrics, completed a Diploma in Children’s Nursing in 1996. A Lecturer Practitioner position between QUB and a regional orthopaedic hospital encouraged the transition into full-time higher education in 2003. Teaching both undergraduate and continuing education Sonya became Discipline Lead for Children’s Nursing in 2012. Her academic portfolio incorporates a second role of ‘pathway coordinator’ where she actively develops, manages and delivers education to RN’s practising within orthopaedic and trauma across the lifespan.

Scholarly activity reflects both specialist areas with an edited book published in 2012 on planning care for children. Annual publications include peer reviewed national and international journals, plus reviewer and editorial roles. Joint student publications motivate and challenge students with conference presentations ongoing nationally and internationally. This co-editor is currently registered on a taught Doctorate programme of study in Education (EdD) at QUB and a national forum member of RCN Society of Orthopaedic and Trauma Nursing (SOTN).

Alison Collins, Tissue Viability Nurse Belfast Health and Social Care Trust RGN (Royal Victoria Hospital, Belfast), BSc (Hons). District Nursing qualification Certificate in Orthopaedic Nursing, Post Grad Dip in Wound Healing and Tissue Repair, MSc.

Alison is an experienced nurse of more than 20 years; she currently holds a specialist nursing post within the largest Health and Social care Trust within Northern Ireland.
Peter Davis MBE Cert.Ed, BEd (Hons), RGN, DN, ONC, MA, Associate Professor (retired), part time lecturer University of Nottingham, Emeritus Editor International Journal of Orthopaedic and Trauma Nursing.

During the late 1980s, Peter held posts in pre- and post-basic nursing education with a specific remit for orthopaedic nurse education. In 1989 he gained a master's degree in nursing and education. In 1994 his first book, as editor and contributor, was published ‘Nursing the Orthopaedic Patient’. From 1992 to 1994 he was chair of the RCN Society of Orthopaedic and Trauma Nursing and has spent several years as a committee member. He was founding editor of the Journal of Orthopaedic Nursing and now Emeritus Editor of the new International Journal of Orthopaedic & Trauma Nursing. He has presented numerous papers at national and international conferences. A personal philosophy of practice being primary to theory has kept him close to nursing care throughout his career and ensures an emphasis on research utilisation and evidence-based practice. In 2000 Her Majesty Queen Elizabeth II conferred on him the honour of Member of the Order of the British Empire (MBE) for services to orthopaedic nursing.

Mary Drozd, Senior Lecturer/Advanced Practitioner University of Wolverhampton MSc, BSc, RGN

Mary is a Senior Lecturer and pathway leader for the post-qualifying orthopaedic and trauma practitioner course plus course leader for the Return to Nursing Programme and also teaches on the post-qualifying mentorship courses. She is currently involved in the development of a new Master’s in Nursing (Advanced Practice) course. Mary was elected onto the Royal College of Nursing (RCN) Society of Orthopaedic and Trauma Nursing (SOTN) Forum in 2009. She has led on the revision of the RCN Orthopaedic and Trauma Practitioner Competences which were published in September 2012. Alongside this she has contributed on behalf of the RCN at the National Institute for Health and Care Excellence on technology appraisals related to orthopaedic and trauma nursing plus co-chairing the Scientific Committee for SOTN. She has presented plenary, concurrent and workshop sessions at international conferences and has published papers related to orthopaedic and trauma nursing as well as nurse education. Mary is currently studying for a Doctorate.

Dr Jeannie Donnelly, Lead Nurse Tissue Viability, Belfast Health & Social Care Trust, and part-time teacher in the Faculty of Life and Health Sciences at Queen's University Belfast, PhD, BSc, RGN, ONC

Jeannie has a wealth of experience and knowledge as a clinical nurse specialist and educator. She currently has a dual role as practitioner and academic that best places her within post-registration education to teach and supervise RNs plus practice as a lead clinician in Northern Ireland.

Dr Sandra Flynn, Consultant Nurse Elective Orthopaedics, Countess of Chester NHS Foundation Trust, Chester, RN

Sandra Flynn currently holds the post of Nurse Consultant in Elective Orthopaedics at the Countess of Chester NHS Foundation Trust. Her clinical focus is mainly upper limb work which includes hand surgery, nurse-led clinics, performing nerve conduction studies and providing treatment for patients with bone and joint infections. As a nurse consultant Sandra is responsible for service development, education and training and research. She currently mentors and is responsible for the professional development of senior surgical specialist nurses within the Trust. Her recent PhD thesis at the University of Chester was entitled ‘Perceptions of Care and Caring: An Orthopaedic Perspective.’ Sandra is currently a committee member on the RCN SOTN forum.

Sinead Hahessy, RGN, BA, MA (Soc. Sc) is a Lecturer and Postgraduate Programme Director in Orthopaedic Nursing in the School of Nursing & Midwifery at the National University of Ireland, Galway.

Sinead has 14 years’ experience as a lecturer in nurse education. Her clinical nursing career includes experience in orthopaedics, gerontology, emergency and theatre nursing. With a postgraduate background in sociology she has contributed to the professional and educational development of undergraduate and postgraduate nursing in Ireland through involvement in curriculum design and teaching. Her teaching and research interests are in orthopaedic/theatre nursing, professional development and clinical governance within the context of higher education in Ireland and qualitative research methods. She is currently undertaking a PhD in Education & Health Sciences at the University of Limerick, exploring the academic identity of nurse lecturers.
Fiona Heaney, Development Co-ordinator Orthopaedics, Clinical Facilitator/Practice RGN, MHSc (Nursing/Education), PG Diploma (Nursing Studies/Orthopaedics), PG Diploma (Clinical Teaching), Galway

Fiona has worked in orthopaedics for over 13 years. Her main interest and experience is in the area of orthopaedic trauma, but also within orthopaedic rehabilitative and elective units. Currently she works as Clinical Facilitator/Practice Development Co-ordinator for the specialty of orthopaedics in Galway University Hospitals in Ireland. Fiona has an interest in developing practice and clinical education, and works closely with the National University of Ireland Galway in the development and delivery of the postgraduate diploma in orthopaedic nursing studies. Fiona is also interested in developing orthopaedic nursing nationally and is involved in the coordination of national orthopaedic nursing conferences, and has recently taken over as chairperson for the Irish Orthopaedic Nurses Section.

Karen Hertz, Advanced Practitioner, MSc, BSc, DPSN, RGN

Karen spent the last 30 years working in adult nursing. Post-qualification she practiced exclusively within orthopaedic nursing in a variety of positions in direct clinical practice. For the last eight years she has assumed the role of Advanced Practitioner in a busy trauma unit focusing on the development of care for older patients. She has a particular interest in patients with fragility fractures and specifically hip fracture care. Additional activity includes development of NICE Guidance for hip fractures and an active role in developing orthopaedic nursing. Karen is a current committee member of RCN national Society of Orthopaedic and Trauma Nursing forum.

Professor Rebecca Jester, RN, PhD

Rebecca qualified as a registered nurse in 1985 following completion of her pre-registration orthopaedic nursing certificate and then her registered general nurse training. She has worked as a staff nurse, sister and ward manager in a variety of trauma and orthopaedic settings since qualifying. She was awarded her PhD in Health Sciences from the University of Birmingham in 2001 and a personal professorship in orthopaedic nursing by Keele University in 2008. She has worked across the interface of education, research and practice since 1995 and currently is the Head of Department of adult nursing and midwifery at London South Bank University and also works part-time as an Advanced Nurse Practitioner in Orthopaedics at Dudley Group of Hospitals.

Julia Judd, Advanced Nurse Practitioner, University Hospital, Southampton, MSc, RSCN, RGN, ENB 219

Julia is an Advanced Nurse Practitioner in Children's Orthopaedics at the University Hospital Southampton, UK. She completed her joint training as a RSCN and RGN at Queen Mary's Hospital for Children in Carshalton and her orthopaedic training at Lord Mayor Treloar Hospital in Alton. Julia has jointly convened and chaired twelve national paediatric orthopaedic conferences based in Southampton and regularly presents at national and international conferences. She was instrumental in establishing the RCN Children and Young People's Orthopaedic and Trauma Community in 1998, and is current treasurer. Julia has published extensively, both articles and book contributions, and is a reviewer for the International Journal of Orthopaedic Nursing. She is actively involved with a number of different national and international research projects, specifically focusing on developmental dysplasia of the hip, Perthes disease, clubfoot and the orthopaedic manifestations of vitamin D deficiency. Her professional objective is to continue to promote the specialty of paediatric orthopaedic nursing.

Dr Mark Limb, Senior University Teacher, the University of Sheffield School of Nursing and Midwifery, Sheffield, England, PhD, BSc(Hons), ENB 219, RGN

Mark qualified as an adult nurse in 1988 and spent the first few years of his career in an orthopaedic and trauma setting. Since 1992 he has been in the field of education and has taught orthopaedic nursing to both pre- and post-registration student nurses. He has previously undertaken research into the psychological impact of limb reconstruction procedures but now focuses much of his time leading on educational quality and standards at school, faculty and university level as well as acting as leader for the pre-registration programme delivered within the school. He still remains committed to the delivery of education for orthopaedic nurses and maintains leadership of units with an orthopaedic trauma focus.
Dr Brian Lucas, Lead Nurse Practice, QUE Kings Lynn NHS Foundation Trust, RN, PhD
Brian has over 20 years experience in orthopaedic and trauma nursing as both a practitioner and educator. He is Chair of the RCN SOTN, an editorial board member of the International Journal of Orthopaedic and Trauma Nursing and has written a number of articles and book chapters on aspects of orthopaedic nursing. He was the nurse member on the NICE Guideline Development Group for the updating of the osteoarthritis guidelines. His current role as Lead Nurse Practice and Innovation at The Queen Elizabeth Hospital King’s Lynn NHS Foundation Trust, Norfolk, involves ensuring that staff trust-wide have the skills and knowledge to deliver quality care and that nursing is organised in ways that maximise patient benefit.

Lorna Liggett, (Retired) Former Discipline Lead for Children’s Nursing (Queen’s University Belfast), BSc, RSCN
Lorna, a passionate and innovative nurse educator for over 40 years, is now retired. Her final position was within nurse education as the Discipline Lead for undergraduate children’s nursing at Queen’s University, Belfast. She co-edited the 2012 Wiley Blackwell text ‘Planning Care for Children’, prior to contributing to a forthcoming RCN book, ‘Nurses’ Voices From the Northern Ireland Troubles.’

Dr Carolyn Mackintosh-Franklin, University of Hull
Carolyn is a registered nurse with many years’ experience in pain management, as a pioneering Clinical Nurse Specialist and educationalist. Her most recent work focuses on educating nurses and other health care professionals to develop greater understanding of the nature of pain, so that assessment and management can be improved for all pain sufferers. This includes the development of both undergraduate and postgraduate educational programmes, as well as contributions to pre-registration nurse education. Carolyn’s own area of research focuses on health care staff and their attitudes towards people experiencing pain. There is considerable evidence that improvements in pain management have been slow to occur, with many people experiencing unnecessary and prolonged suffering as a result of both poor assessment and inadequate pain management. The attitudes of health care staff are likely to be a significant factor underpinning this failure to improve care, and current research indicates that individuals’ own priorities and values play a key role in determining the standards of pain assessment and management of pain that sufferers receive.

Rosemary Masterson, Nurse Tutor, Cappagh National Orthopaedic Hospital, Dublin, RGN, ONC ENB 219, BNS, MSc in Nursing
Rosemary undertook her general training in the northwest of Ireland before completing the ENB 219 certificate in Orthopaedic Nursing at the Royal National Orthopaedic Hospital in Stanmore, London. She worked in both orthopaedic elective and trauma settings in Ireland and London. Rosemary undertook her Bachelor of Nursing Studies degree at University College Dublin and, in conjunction with the RCN and University of Manchester, completed a Masters in Nursing. She currently works in Cappagh National Orthopaedic Hospital, Dublin as a nurse tutor.

Sinead McDonald, Fracture Outcomes and Research Manager Royal Victoria Hospital, Belfast Health and Social Care Trust, RGN, Certificate in Fracture Trauma.
Sinead a registered Nurse since 1990, with 23 years’ experience in Trauma and Orthopaedics. Her current position is Fracture Outcomes and Research Manager in the Royal Victoria Hospital since 2004. This involves the management of a regional database which holds data on all fractures in Northern Ireland under the supervision of Sinead, with special focus on hip fracture for the purpose of audit and research, contributing to the National Hip Fracture Database. The data Sinead provides and analyses using SPSS is recognised for its data completeness and accuracy and as a rich source of quality data used extensively by orthopaedic management, performance management and service improvement. She is also responsible for teaching trauma research and audit for both nursing and medical staff and the supervision of all in-house auditing.

Pamela Moore, Sister in Fracture Clinic, Royal Victoria Hospital Belfast, PgCert Specialist Practitioner in Orthopaedic Nursing, BSc Hons, RGN
Pamela has many years of experience in both managerial and ‘hands on’ roles within a busy dedicated fracture clinic/unit. She is passionate about orthopaedic and fracture trauma care and values ongoing nurse education. Pamela is a frequent specialist lecturer on the orthopaedic and fracture trauma programmes and OSCE examiner at Queen’s University, Belfast.
Lynne Newtown-Triggs, MA, RGN, Pre Assessment Sister, Bedford Hospital NHS Trust

Lynne currently works as a Pre Assessment Nurse Manager at a district general hospital with her main focus being the orthopaedic specialty. She qualified as an RGN in 1984 and has since worked in both elective and trauma environments as a ward sister and specialist nurse. She completed the ENB 219 at the RJAH Orthopaedic Hospital in 1987 and has since completed a BA (Hons) degree in nursing studies and an MA in Healthcare Ethics.

Donna Poole, Lecturer and joint Unit Co-ordinator BSc Professional Nursing Practice (Spinal Cord Injury), MA in Practice Education (currently studying), PgCert in Practice Education, Certificate in video streaming technology and education, Certificate in Spinal Cord Injuries, Certificate in Continence Management, Diploma Applied Science (Nursing), RGN

Donna, a registered nurse for 25 years, has experience in spinal cord injury nursing, rehabilitation, community and domiciliary care and case management. Her current position is lead nurse for education in a specialist neuromusculoskeletal NHS Trust. Prior to this post Donna facilitated and coordinated the rehabilitation and discharge of spinal cord injured persons in the London Spinal Cord Injury Centre. She graduated in Sydney, Australia in 1987, with a Diploma in Applied Science (Nursing). Following this she completed her certificate in spinal cord injury nursing and after working in two spinal units, she worked in remote communities of Australia as a registered nurse and as manager of a home and community care project. Director of Nursing of a district nursing service, teaching and presenting on care of the spinal cord injured person statewide and community nursing with a continence focus followed, then teaching the Diploma in Nursing (pre-enrolment). In all of these posts Donna has utilised and shared her knowledge of care of the spinal cord injured person to promote awareness and knowledge of spinal cord injury and to lead and motivate those caring for people with spinal cord injury. In her current post she also teaches and part coordinates BSc Professional Nursing Practice (spinal cord injury) for London South Bank University. Member of MASCIP, ISCoS, various contributions for guidelines and research in the field; ‘Enhancing the Emotional Dimensions of Nursing Care in Spinal Cord Injury’, an action research project in collaboration with LSBU (2005–ongoing), contributor to publication Huntleigh/SIA (2009) ‘Moving and Handling Guidelines.’

Hannah Pugh, Orthopaedic Trauma CNS, University College Hospital, London

Hannah trained ‘up north’ before coming to London as an RN and has worked in a variety of orthopaedic positions including a sister’s post at a major trauma centre and as a specialist nurse for limb reconstruction. She is now an orthopaedic CNS at The Princess Grace Hospital. A frequent presenter at both national and international events and author on various orthopaedic topics, Hannah is also a committee member of the RCN Society of Orthopaedic and Trauma Nursing, is secretary of The London Orthopaedic Nurses Group and is on the editorial committee for the international Journal of Orthopaedic and Trauma Nursing.

Pauline Robertson Lecturer and joint Unit Co-ordinator, BSc Professional Nursing Practice (Spinal Cord Injury), London South Bank University and Spinal Outreach Practitioner London Spinal Cord Injury Centre, Royal National Orthopaedic Hospital; PgCert in Practice Education, qualified moving and handling trainer, MA in Practice Education (ongoing), RGN

Pauline has worked in nursing for the last 26 years and in spinal cord injury (SCI) for the last 22 plus having worked overseas to develop a SCIC with a British wheelchair charity and relief work for agencies that treat people with SCI through conflict or natural disaster. Pauline currently works clinically as an Acute SCI Outreach Practitioner helping to support newly injured patients and helped develop many new innovations such as a new national database to register all new SCI patients to enable research and audit throughout the patient’s journey. Teaching commitments mainly consist of post-registration for adult nurses, usually on the topic of SCI and how it relates to that specialty and regularly supports the Spinal Injuries Association.

Jean Rogers, Practice Education Facilitator for Stockport NHS Foundation Trust, Stockport, RGN, BSc (Hons), MSc, ONC, Cert. Ed(Fe)

Jean qualified as an RGN in 1988 from Salford NHS Foundation Trust. She has worked in a number of areas including elective orthopaedics, acute trauma and ENT,
Contributors

rheumatology and endocrinology, acute medicine and acute rehabilitation. She undertook the orthopaedic course at the Robert Jones and Agnes Hunt Orthopaedic Hospital in 1991 where she was in the last group to undertake the twelve-month course and in her spare time completed a certificate in higher education. Following this Jean held the posts of senior staff nurse, junior sister and lecturer/practitioner and completed a BSc (Hons) in nursing practice. She is co-author of the Oxford University Press ‘Handbook of Orthopaedic and Trauma Nursing’ as well as numerous articles. She is chair of the Northwest Orthopaedic and Trauma Forum, chair of RCN Cheshire East and sits on the North West Regional Board and is a staff governor. Her main interests lie in Orthopaedics, nurse education and the politics of nursing and she takes an active role in these areas being a member of the orthopaedic forum, the practice educator’s special interest group and the RCN Education Forum. Jean is currently undertaking a PhD in Health and Social Care at the University of Salford. Jean’s current post is as practice education facilitator for Stockport NHS Foundation Trust where she believes that she has the best of both worlds educating the nurses of the future in the practice setting.

Julie Santy-Tomlinson (Editor), Senior Lecturer University of Hull, BSc, MSc, RGN, ENB 219

Julie trained as a nurse at St Mary’s Hospital Paddington, London in the early 1980s. She has always been an orthopaedic nurse at heart and took up various clinical posts as staff nurse, ward sister and practice development nurse in a variety of orthopaedic units in London, South Africa, Cambridge, Shropshire and Hull in the 1980s and early 1990s. She undertook the ENB 219 certificate in Orthopaedic Nursing at the Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry in 1986/7. In 1996 Julie moved to her first post in nursing education at the University of Bradford where she taught and managed various modules concerning evidence-based practice, orthopaedic and trauma nursing, older people and wound management and tissue viability until moving to the University of Hull where she has worked since 2002. She is currently a Senior Lecturer and University Teaching Fellow there. Her PhD considers the diagnosis of infection in external fixator pin site wounds. The study was supported by a nursing research scholarship from the Smith and Nephew Foundation. Involvement with the Royal College of Nursing Society of Orthopaedic and Trauma Nursing for the past 20 years (for some of that period as a committee member) enabled Julie to develop world-wide networks with orthopaedic and trauma nurses which she has maintained and developed over the last decade. Julie speaks regularly at international conferences on numerous topics relevant to orthopaedic and trauma nursing. She has also published widely on a variety of issues. She became co-editor of the International Journal of Orthopaedic and Trauma Nursing (formerly the Journal of Orthopaedic Nursing) in 2009.

Helen Stradling, Macmillan Advanced Nurse Practitioner Sarcoma, Nuffield Orthopaedic Centre, Oxford University Hospitals NHS Trust, Oxford

I qualified from the University of Birmingham in 1998. From there I took up the post of staff nurse at the Nuffield Orthopaedic Centre in Oxford. It was here that I was able to mix my passion for orthopaedics and oncology as the sarcoma patients were nursed on the ward. During the first few years on the ward I began to increase my knowledge relating to sarcoma and undertook study in both oncology and orthopaedics. In 2004 the Nuffield Orthopaedic Centre became one of seven national centres for the care of bone sarcoma and it was at this point that I was successful in my application for the role of Macmillan Specialist Nurse for musculoskeletal oncology. Over the last seven years this role has grown and I have been able to implement changes for the benefit of all sarcoma patients treated in Oxford. We now offer a ‘one stop shop’ for diagnostics; all patients are nursed in the same ward area by nurses with oncology and orthopaedic experience, and follow-up is now nurse-led. The service took over the care of the bone sarcoma patients previously treated in Bristol in 2007 which has again increased our referral numbers.

I was awarded the Nursing Times Cancer Nurse Leader of the Year award in 2010 in recognition of all the work which had been put into improving the pathway for sarcoma patients and their families in Oxford. I became the first Chair of the National Sarcoma Forum in September 2011 and this is now a forum in which things are being taken forward by professionals in order to continue to improve the care of sarcoma patients in the UK.
Anna Timms, Limb Reconstruction Clinical Nurse Specialist, Royal National Orthopaedic Hospital, Stanmore, RGN, BSc Psychology, ONC

Anna qualified from the Queen Elizabeth School of Nursing, Birmingham in 1994. Since then she has specialised within the fields of rheumatology and orthopaedics. Working within the trauma environment at the Royal London Hospital she became a Limb Reconstruction Nurse Specialist in 2005, leaving to become a member of the team at the Royal National Orthopaedic Hospital in 2012. She has authored articles and presented both nationally and internationally in the field of limb reconstruction.

Elizabeth Wright, Advanced Nurse Practitioner, University Hospital, Southampton, RGN, RSCN, MSc Advanced Clinical Practice

Liz commenced her nursing career in 1984. She trained at the Hammersmith Hospital, London and then gained experience in general paediatric and neonatal intensive care nursing. She entered the specialist field of orthopaedic paediatric nursing in 1990. She was Sister of a paediatric orthopaedic ward for six years, then a Nurse Specialist until she commenced her current post of Advanced Nurse Practitioner, completing her MSc in Advanced Nurse Practice in 2004. Her professional objective is to raise the awareness of the unique speciality of paediatric orthopaedics. She strives to achieve this by having jointly convened and chaired several national paediatric orthopaedic conferences based in Southampton, as well as having established and chaired the RCN Children and Young Peoples Orthopaedic and Trauma Group in 1998. She continues to be actively involved in this group and is the current treasurer. Liz participates in the RCN Society of Orthopaedic and Trauma Nursing (SOTN); being a member of various SOTN work panels and is a part of the SOTN Scientific Committee. She has published several times on the subject of paediatric orthopaedics.

Beverley Wellington, MSc Advanced Practice, BSc (Hons) Nursing Studies, PgCert TLHE, RGN, ONC, Dip CN, Certificate in Cognitive Behavioural Therapy, Certificate in Counselling Skills, Professional Certificate in Management

Beverley has many years of experience in orthopaedic nursing, having worked in Ward Manager roles in both trauma and elective areas before becoming a Clinical Nurse Specialist covering both of those areas. She later moved into the specialised area of brachial plexus injuries and since 2004 has been working with the Scottish National Brachial Plexus Injury Service as a Clinical Nurse Specialist based at the New Victoria Hospital, Glasgow, Scotland. She has a dual role and also works as Programme Leader and Lecturer for a Graduate Certificate in Orthopaedic Care programme at the University of the West of Scotland. Beverley regularly presents papers at national and international conferences and has written for both book and journal publications. She has worked on projects for both national and international collaborations including guideline development, care pathways, ementoring and orthopaedic nursing competencies. Her other interests include partnership working for several years with Malawi and she has made regular visits to the country and facilitates ongoing projects.

Elaine Wylie, Nurse Specialist, Southern Health and Social Care Trust, Northern Ireland, RGN, BSc (Hons), PgDip Specialist Practice Registration Rheumatology

Elaine has worked in rheumatology for 23 years and the last 13 as a Nurse Specialist. She is currently based at Craigavon Area Hospital, where her clinical responsibilities include nurse-led review, joint injections and biologic therapy clinics, as well as running a telephone helpline service. She is involved in service development locally and has mentored rheumatology nurses in Jesi, Italy to extend their role and service. Her specific interests in rheumatology are inflammatory arthritis, patient and family education and support, and staff training and development. She is currently developing her skills in musculoskeletal ultrasound. Elaine teaches on both rheumatology and orthopaedic specialist courses at Queen’s University Belfast and the University of Ulster. She has a keen interest in research and audit and has presented a variety of papers locally, nationally and internationally.
To many nurses orthopaedics is like Marmite (a brown, sticky, edible spread made from yeast extract, commonly eaten in the UK and known for its strong salty taste), you either love it or hate it! How anyone does not want to be involved in a form of nursing that can actually make such a huge difference to the patient is beyond me, but that’s the nature of care. With their saws and screws, plates and nails the orthopaedic surgeon can often rebuild the skeleton, the muscles, the ligaments and tendons so that function is restored. However, that’s not the end of the journey as many of us know. It is the specialist knowledge of the nurse, the physiotherapist, the occupational therapist and the rest of the specialist team that cares, advises and encourages the patient in the pre/post-surgery phases, or following injury. Here much of the restorative accountability lies with the orthopaedic practitioner.

We have come a long way since Jean-Andre Venel who established the first orthopaedic institute in 1780 and Dame Agnes Hunt, whose meeting with orthopaedic surgeon Robert Jones in 1903 was to see her embark on journey that would develop into the origins of orthopaedic nursing in the UK. Nursing practice has seen many changes since the turn of the 20th century. Long gone are the ‘Nightingale’ wards with rows of patients, legs aloft in traction. Gone are the days where patients would be pushed out on their beds to specially constructed verandas for fresh air. Now efforts are squarely focused on early rehabilitation, mobilisation, complication prevention, education and safe discharge. Of course, evidence-based practice and the unique contribution of the orthopaedic practitioner ensures all this is possible.

I have had the privilege of working with many of the contributors to this book through being the co-editor of the International Journal of Orthopaedic and Trauma Nursing. I can vouch for their energy and enthusiasm around the subject area and know that the co-editors of this book would have had ‘all on’ reign in the team to get this book complete. However, you occasionally hit on a winning formula, a group of people that just work, people who share a vision and passion that drive a project forward. This is one such case. Here is the culmination of all that energy which has produced an inspired book to aid those who want to learn more about the nature of orthopaedic care.

If you have looked on the shelves for a new orthopaedic nursing book you will know that they are few and far between. The evolution of this book is an important step in taking orthopaedic care forward. No matter where in the world you care for your patients you will find this book essential for current evidenced-based orthopaedic care. It captures so many of the changes that now drive orthopaedic care around the globe by drawing on expertise and clinical innovations that often form the basis of articles found in the International Journal of Orthopaedic and Trauma Nursing. Drawing on experience from both practice and education the editors have bound together so many topic areas, making them relevant to current practice. Chapters range from pure anatomy and physiology to the place of research in orthopaedic care and from musculoskeletal injuries to the needs of the child with specific orthopaedic issues; all capturing relevant and up to date orthopaedic astuteness. There is something for everyone and little is missing.

My vision for this book is that it will not sit on a shelf in a library somewhere, occasionally used as reference material, but will find its way onto wards and departments where it can be used and applied by practitioners delivering care. If you are looking to improve your patients’ experience of orthopaedic care, no matter what continent of the world you work in, this book can be the catalyst for that change.

I’m sure this will become a key text for many orthopaedic practitioners whilst finding its way onto the reading lists of orthopaedic courses globally. If you are looking for an orthopaedic book linking theory to practice whilst focusing on evidence-based care of the orthopaedic patient this is a must-have read – for your team or to add to your own collection.

Bryan Smith
University of Nottingham, UK and former Co-Editor International Journal of Orthopaedic and Trauma Nursing
Preface

Orthopaedic and trauma care are highly specialised aspects of health care focused on the person with musculoskeletal problems, injury and following orthopaedic surgery. Such care is delivered across the lifespan from birth to death and in a wide range of community and hospital settings. The skills required for effective, evidence-based practice must be developed through a regard for the knowledge and evidence base for practice coupled with development of competence and expertise. This branch of care shares generic skills but encompasses specialist skills like no other. The aim of this book is to provide practitioners working in orthopaedic and musculoskeletal trauma settings with the evidence, guidance and knowledge required to develop their skills and underpin effective practice.

The title of this book reflects the focus on the practice of musculoskeletal care as well as signifies a specific focus on the evidence base for that practice. The editors and contributors have not tried to achieve the impossible in providing information about all of the available knowledge on a given topic, but offer building blocks for extending knowledge and understanding the issues that drive safe, effective practice. The book provides relevant information about key theory and summaries of the evidence base underpinning all the main aspects of orthopaedic and trauma practice. This approach will enable the practitioner to easily gain an understanding of the existing evidence base for their practice. This will ensure that the book is relevant for those studying for a degree as well as for those clinicians practicing in developing and advanced orthopaedic and trauma practitioner roles. Evidence is rarely out of date, but sometimes superseded. One danger with this approach in this book, therefore, is that the evidence base is likely to move on as time progresses, so it is important that the practitioner is also encouraged to seek more up to date evidence through knowledge of how to access and appraise it.

Because the focus of this text is on evidence based practice, each chapter is supported by summaries, or digests, of the available evidence as well as reference to relevant and seminal research. Guidance for this practice is based on this evidence. This will enable the practitioner to focus on the evidence essential for modern practice. Whilst much of the focus of the book is on the care of the adult it also includes sections focusing specifically on children and young people and on older people with orthopaedic conditions, following surgical intervention and after injury.

Although the title of the book reflects a focus on nursing care of the orthopaedic and trauma patient, it also aims to provide a wealth of useful and thought provoking information for other practitioners working in the orthopaedic and trauma setting. Equally, the book is aimed at practitioners beyond the shores of the United Kingdom where the editors are based.

Part one of the book provides an overview of the key issues that relate to orthopaedic and trauma nursing practice. It considers the theory underpinning orthopaedic care and places it in context with the history and development of practice in the musculoskeletal care environment. An important aspect of this is a discussion of how the evidence base for orthopaedic and trauma practice has developed and how the reader might develop skills in seeking out and evaluating evidence. There is also an overview of how professional and practice development, based on theoretical knowledge and evidence, can lead to ensuring and developing competence and effective practice. Integral to this introductory section is an overview of the musculoskeletal system that will enable the practitioner to underpin a knowledge of relevant anatomy and physiology to the other sections of the book. Rehabilitation begins at the patient's very first contact with health care services and the central concepts within, and practice of, rehabilitative care are also considered.

Part two of the book focuses on six specific aspects of practice which, although generic, take on a specific specialist focus in the musculoskeletal care setting. Consideration of general and specialist assessment of the patient, casting, traction and external fixation, prevention and management of complications and patient safety, nutrition and hydration, pain assessment and management and wound management and tissue viability are considered specifically within the context of
orthopaedic and trauma care. These aspects of care, along with the key principles discussed in the previous section, need to be applied to the practice advice provided in the remainder of the book.

Part three of the book considers the care of the patient with musculoskeletal conditions not attributed to trauma, but to degeneration of the bones, joints and soft tissue with a specific focus on arthropathies such as osteoarthritis. The section considers the management of these conditions with a specific focus on elective surgery which constitutes much of the need for orthopaedic care in the non-emergency setting.

Part four of the book provides an overview of the principles and practice of care of the patient following musculoskeletal trauma and injury. It begins with a discussion of the principles of trauma care, providing the practitioner with important knowledge to underpin safe and effective trauma care practice both in the emergency situation and subsequently. This is followed by specific consideration of the principles of fracture management and care and then by specific consideration of fractures in the older person with a focus on fragility fracture. This is followed by an overview of the care of the person with spinal cord injury aimed specifically at practitioners who provide that care in the general hospital setting. Finally there is a brief overview of the knowledge required to care for the patient with soft tissue and nerve injury including brachial plexus injuries.

Part five of the book provides an overview of key concepts and fundamental issues that relate to the neonate, infant, child and young person. The material is specific to this client group and values the expertise of children’s nursing relating to skeletal growth and development, family-centred care, safeguarding/non-accidental injury and pain management. This is followed by key information relating to the assessment and management of common children’s musculoskeletal conditions that the practitioner may come across in everyday practice. A review of fracture healing, diagnosis and classification then follows before the complexities of diagnosing and treating children’s fractures considering the immature and developing skeleton are then discussed along with the principles of conservative and surgical treatment.

We hope that the readers of this book will use the text as a general reference source for maintaining and developing their knowledge, but that they will also extend that knowledge by accessing the further reading and seeking new material that is relevant to their own learning needs through online and traditional sources of information. We hope that this will help to ensure that orthopaedic and trauma practice will become increasingly safe, effective and evidence-based.

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PART I

Key issues in orthopaedic and musculoskeletal trauma nursing
Introduction

The aim of this chapter is to provide an introduction to orthopaedic and trauma nursing and the care of the orthopaedic and musculoskeletal trauma patient. The focus is on the diversity of the individuals in need of that care and the culture, settings, theory and contexts in which that care takes place. Orthopaedic and trauma nursing is a discrete but diverse specialty focused on the care of the patient with musculoskeletal problems. These problems are related to either disease or injury of the bones, joints, muscle and soft tissues which are central to human movement. Orthopaedic and trauma practitioners must develop knowledge and skills in order to provide expert specialist care based on diverse, highly specific and specialised patient needs. One of the defining features of orthopaedic care is that it is provided across the life span from birth through to death and in every care setting.

Historical perspectives

In an early textbook, Mary Powell (1951) wrote of the general principles of orthopaedic nursing, which embodied the principles of rest balanced with movement and exercise, treatment of the patient as a whole, optimum positioning for joints using splinting and traction, relief of pain and the provision of the best conditions for recovery and healing. This encompassed pre-operative and post-surgical care, trauma care and rehabilitation. With a focus on the nurse–patient relationship and team work, many parallels can be drawn with orthopaedic and trauma nursing today. The book was based on her many experiences up to that time of inter- and post-war orthopaedic care and what she had learnt from the teachings of Dame Agnes Hunt. Although care must have been provided to patients with musculoskeletal conditions and injuries in earlier times, it is often said that orthopaedic nursing’s history – particularly in the UK – began with Dame Agnes Hunt in Shropshire, England in the early decades of the 20th century. Widely associated with the early development of orthopaedic nursing, Agnes Hunt took an approach to the care of individuals with musculoskeletal problems and disability that focused on the importance of rest, fresh air and good nutrition in ensuring the proper development and recovery of diseased, injured and deformed bone, joints and soft tissue. Many common musculoskeletal diseases of that time such as tuberculosis and poliomyelitis were largely eradicated in developed countries during the twentieth century and this has resulted in important and far reaching change in the priorities for orthopaedic and trauma care since that time. Even so, this history remains pertinent to the way in which care is provided today.

The early literature relating to musculoskeletal care focused on the practice of many weeks and months of enforced rest, while the current focus is on early mobilisation and avoiding inactivity. Although much is very different in the second decade of the 21st century, there are some principles of early 20th century care that remain relevant – in particular the need for what Mary Powell (1951) would have called an ‘orthopaedic conscience’ (which she later renamed the ‘orthopaedic conscience’).
eye’) – a special ‘sense’ or consciousness of how movement, position, posture and comfort is central to both the assessment and care of the orthopaedic patient in modern health care. This is largely based on the practitioner’s experience of working with patients. This is reflected in the way in which skilled and experienced orthopaedic and trauma practitioners are able, for example, to recognise nursing needs by instinctively observing the way in which people move or hold themselves. Skilled orthopaedic practitioners, for example, understand how gentle and minimal repositioning of a limb or supporting it with a pillow can improve comfort and support healing and recovery. Such observation and subsequent intervention still demonstrate how nurses make judgments about the needs of patients and formulate decisions about care based on clinical information derived from a variety of sources including, but not exclusively, evidence (Thompson and Dowding 2002).

As a specific entity, orthopaedic nursing has parallels with the development of orthopaedic and trauma surgery and famous surgeons such as Hugh Owen Thomas and Robert Jones. Their efforts led to the inception of orthopaedic surgery in the 1940s as part of the development of the National Health Service (NHS) in the United Kingdom as well as the development of orthopaedic and trauma services around the world. Even so, orthopaedic care has been provided for as long as the musculoskeletal system has been prone to disease and injury, although this previously took place under the auspices of bone setters, barber surgeons and other ‘informal’ carers. Trauma nursing is most often evident in nursing stories from war such as those surrounding the Crimean War and the role played by both Florence Nightingale and Mary Seacole. The care of patients sustaining musculoskeletal trauma has often made strides forward during times of conflict, war, great societal change and disaster whilst the development of elective surgery has been driven by a desire to improve lives by, for example, ameliorating the pain and disability of osteoarthritis and other chronic conditions.

At the beginning of the 20th century a number of specialist orthopaedic hospitals sprang up in the UK. This led to the rapid creation of a network of centres, often in rural or suburban locations, focused on the specialist care of patients and the education of practitioners in the principles and specifics of musculoskeletal care. These organisations also became early developers of the evidence base for orthopaedic care. As services have become more centralised, a number of these hospitals have closed and been integrated into acute urban hospital centres. Those remaining specialist hospitals continue to develop the specialist knowledge for musculoskeletal care alongside emergency departments and acute, outpatient and community units.

As the 20th century progressed musculoskeletal care began to evolve into two related entities – those of elective care and of musculoskeletal trauma care. Elective orthopaedic surgery involves procedures that are planned in advance and are designed to treat or manage known conditions which are causing pain and/or disability. This often includes surgery for arthropathies such as osteo- and rheumatoid arthritis and might also involve surgery to further manage the effects of trauma once initial recovery and healing has taken place. This might include surgery to correct deformity or the removal of ‘metal work.’ Patients with arthropathies such as rheumatoid arthritis are often cared for in specialist centres where the focus is on medical management and rehabilitation rather than on surgery. These patients might, however, be referred for elective surgery when this is thought to be of potential benefit.

Trauma care, on the other hand, is unplanned and involves the management, care and rehabilitation of patients who have suffered injury following a specific event such as a fall, road traffic accident, sporting injury or other mechanism of injury. All structures in the human body are prone to injury and trauma care, therefore, takes place in a variety of settings including the emergency department, intensive care unit and neurosurgical setting as well as the orthopaedic trauma unit. Orthopaedic trauma care is focused specifically on trauma to the musculoskeletal system whilst taking into account the need to include other aspects of trauma management as necessary. The focus in this book is specifically, therefore, on those aspects of trauma care which involve the musculoskeletal system. Often orthopaedic nurses are specialists in one or the other of elective or trauma orthopaedics but many have skills in both areas.

The nature of orthopaedic and musculoskeletal trauma nursing

The orthopaedic practitioner has a unique role, with associated skills and knowledge. Nursing theory applied to orthopaedic and musculoskeletal trauma nursing
Mobility and function

The focus on the musculoskeletal system and its function in facilitating movement and mobility is an inherent aspect of orthopaedic care. Mobility, movement and function are concepts, therefore, which have long been argued to be central to orthopaedic nursing (Davis 1994, Love 1995, Balcombe et al., 1991). Even so, the concept of mobility itself has been difficult to define and work which considered this is described in more detail in an evidence summary in Box 1.2, in which Ouellet and Rush (1992, 1996, 1998) and Rush and Ouellet (1998) have begun to highlight the complex and essential nature of mobility and its link with immobility as well as the care needs these present. Davis (1994) also emphasised the centrality of mobility for patients with musculoskeletal problems within the physical, psychological and social domains of care. Key to this discussion is an acknowledgement that movement is an essential aspect of human health and wellbeing. It also acknowledges that both musculoskeletal problems and the resulting nursing interventions can lead to immobility and that such immobility or restricted mobility leads to consequences which include serious complications.

Box 1.1 Evidence Digest: The nature of orthopaedic nursing

An early study by Love (1995) attempted to clarify and discriminate between orthopaedic and general nursing using a questionnaire survey of orthopaedic nurses that asked which nursing activities were highly orthopaedic nursing functions and which were not. There were a range of activities deemed to be ‘unique’ to orthopaedic nursing including ‘elevation of limbs to prevent swelling’ and ‘removal of splintage if ischaemia is threatening safety of a limb’.

More recently a number of researchers (Santy 2001, Drozd et al., 2007) have used qualitative approaches to research such as grounded theory to explore the nature of orthopaedic and trauma nursing and examine the detail of what specific interventions practitioners undertake with orthopaedic patients. Work by Judd (2010) has undertaken similar inquiry into issues related to working with children with orthopaedic problems.

This work is a foundation on which theory, education and practice frameworks can be developed to ensure that musculoskeletal care can be increasingly effective in the future and enable practitioners to articulate their specialist role and value. The studies collectively demonstrate that there are many specialist interventions which focus on supporting mobility, managing and caring for the patient with orthopaedic devices such as splints, traction, casts and external fixators and caring for the patient following specific surgical procedures and injuries as well as preventing and recognising the complications of those interventions. The studies also highlight how specialist skills are developed and used alongside the generic interventions and actions considered to be fundamental aspects of nursing as a whole. The studies can be used as evidence to help ensure that the skills, knowledge and attitudes required for effective orthopaedic and trauma nursing practice are maintained. The findings, therefore, ensure that the specialty of orthopaedic care is protected from erosion and that patients are cared for by practitioners who are competent in providing that care in all its forms.

The centrality of mobility in orthopaedic and trauma nursing practice has led to one proposed model for orthopaedic nursing (Balcombe et al., 1991, Davis 1994) which holds mobility at its core. Even so, orthopaedic nursing has tended to continue to use generic nursing models applied to the care of the adult or child. Nursing models ideally aim to illustrate the theory of nursing practice to enable the practitioner to organise and prioritise effective and safe patient care. The ‘nursing process,’ developed by Orlando
Key issues in orthopaedic and musculoskeletal trauma nursing

(1961), provides a logical, structured approach that directs the practitioner’s critical thinking in a dynamic manner. It encourages the nurse to balance scientific evidence, personal interpretation and judgement when delivering patient/family-centred care. This is supported by models of nursing and philosophies of care that help to define the care role and guide practice (Corkin et al., 2012). The nursing process presents as a four stage procedure to: assess (often extended to ‘nursing diagnosis’), plan, implement and evaluate care. Nursing diagnosis involves a professional judgement based on holistic assessment. Figure 1.1 not only identifies the four components, but reinforces its cyclical nature. A variety of models and frameworks have been developed on the basis of the nursing process to plan care.

Influential work by Fawcett (1995) encouraged many nursing models to incorporate four key components:
- the person
- their environment
- health
- nursing.

Commonly adopted nursing models in orthopaedic and trauma care settings include the Roper, Logan and Tierney’s (2000) model of nursing care (particularly in use in the UK, originally published in 1980, and subsequently revised) based upon activities of living, Orem’s self-care model (2001) and Roy’s Adaptation model (1984). Such models of care have value for the orthopaedic and trauma patient as a way of ensuring that care is provided within a philosophy that ensures that specific individual needs are met. A joint approach is sometimes adopted, especially when planning care for children; for example by combining Casey’s partnership model (1988) and Roper, Logan and Tierney’s (2000) model of care. The first is the founding model of family-centred care and the latter encompasses the 12 activities of daily living and life continuum along with consideration of dependence/independence. In combination they produce a comprehensive approach to planning of care. Recently, nursing models have been overshadowed by a focus on evidence-based practice, but they continue to play an important part in providing a holistic theoretical foundation for nursing that has the potential to enhance
practice (McCrae 2012) within orthopaedic and trauma care. Even so, orthopaedic and trauma nursing perhaps has yet to embrace nursing models fully.

Public health and musculoskeletal conditions and injury

Public health focuses on the health and wellbeing of individuals from a societal perspective. It is synonymous with the prevention of disease and ill health through public action. The public health agenda applied to orthopaedic and trauma care is complex. It is mainly focused on skeletal health but this, in itself, is a multi-faceted issue and necessarily involves consideration of numerous factors which affect musculoskeletal health such as:

- bone development in the child and young adult
- bone health – including, specifically, vitamin D deficiency, osteoporosis, rickets and osteomalacia
- exercise and musculoskeletal fitness
- diet, nutrition and obesity
- life style factors and risk taking behaviours
- accidental injury and its prevention – e.g. road traffic, workplace and sports injuries
- ageing.

Musculoskeletal conditions and injuries can affect any member of society and there are few personal, social and cultural boundaries. Human anatomy evolves slowly, but injury can be a result of immediate changes in the weather and other natural conditions as well as societal variations such as diverse and migrating cultures amongst countries. This is apparent, for example, in the reported increase in tuberculosis in immigrant communities in part due to the migration of Asian families (WHO 2012) to other parts of the world. Other issues include changes in population dynamics with an increasingly ageing population leading to an upsurge in fragility fractures. For the adolescent and young adult there is a heightened rate of injury due to ‘risk taking’ behaviour. The epidemiology of orthopaedic-related conditions alters as the pathophysiology of disease processes and the treatment options continue to evolve as a result of emerging technology, research evidence and the ongoing drive for safe, cost-effective care.

Recent renewed concerns about vitamin D deficiency illustrate the changing nature of the public health agenda and musculoskeletal care. Deficiency is associated with rickets, fractures and musculoskeletal symptoms and studies suggest a worrying link with deformity and generalised bone and muscle pain (Judd 2013). Such deficiency is attributed to an increasingly multi-ethnic population, poor diet and lifestyle choices made by families. Previously a condition linked with poverty, the recent recurrence of rickets in the UK, for example, is linked to changes in the lifestyle of children which has resulted in them spending less time playing out of doors, reducing their exposure to the sunlight that is important for vitamin D and calcium synthesis.

The diverse orthopaedic patient

The vast age range of the orthopaedic trauma patient means that there are a number of conditions and injuries which are more common in different age groups. Age groups carry different risk factors for musculoskeletal problems; these are outlined in Table 1.1. Changes occur as the musculoskeletal system develops, grows and deteriorates and as humans age. Many orthopaedic conditions and fracture trauma injuries are related to changing musculoskeletal structure. Normal and abnormal changes occur in utero, at birth, childhood, adulthood and from old age to death. Intrinsic factors affecting this include abnormal musculoskeletal development such as developmental dysplasia of the hip (DDH), scoliosis and osteogenseis imperfecta with which there are considerable
Key issues in orthopaedic and musculoskeletal trauma nursing

variations in treatment and outcome. Other conditions are often age-related such as osteoporosis and osteoarthritis which are associated with intrinsic factors such as increasing age. Such variations can hopefully be reduced as a result of national guidance and globally relevant initiatives such as those published by the World Health Organization (WHO). Extrinsic factors include the risk-taking of the young person/adolescent leading road traffic trauma alongside accidental and non-accidental injury in vulnerable children and adults. In spite of political and economic development in most parts of the world, social status and environmental conditions continue to impact on musculoskeletal health problems due to issues such as low income and poor education leading to poor diet.

The care journey in different settings

In many of the chapters in this book we see that the care journey takes place against a background of changing health services and political priorities as well as individual needs. There is no reason to believe that the enormous change and development of health care services seen in the later decades of the 20th century and at the beginning of the 21st century are likely to slow down in developed and developing countries. The practitioner, therefore, needs to ensure they have a dynamic understanding of how this affects the care of the orthopaedic and trauma patient, especially in relation to the setting in which care takes place.

Ambulatory care is increasingly providing opportunities for patients to be offered treatment and care without a stay in hospital or, at most, a very short stay. This is driven by the need to reduce the costs of healthcare as well as an acknowledgement that an acute hospital is not always the best place for the patient to be. In the orthopaedic and trauma setting this is seen as feasible where the impact on the patient’s ability to carry out fundamental activities is minor. It is important to bear in mind, however, that non-admission to or early discharge from hospital can be both anxiety provoking and uncomfortable for patients and their families and there is a need to provide support that ensures that specialist orthopaedic advice and services are accessible remotely from the hospital. In particular, services need to ensure that patients recovering at a distance from an acute hospital setting in their own homes are afforded support and a care package which includes fundamental elements such as effective pain relief, good nutrition, support for rehabilitation, access to advice and support and all of those things the patient needs to reach both their recovery and rehabilitation potential as well as maintain their safety. Such services can be complex and difficult to coordinate. One of the difficulties in providing adequate support in the patient’s home can be funding and purchasing mismatches between the acute hospital and community services, which may be quite separate entities depending on the structure and funding of the health care system. Family support for care in the home is also becoming increasingly challenging as the role and employment of family members change.

For more than a quarter of a century there has been a strong focus on reducing lengths of stay and moving from hospital-based to community-based care. This focus is driven by the need to stretch limited resources while maintaining the quality of care. While this shift has long been an important aim for health care managers and policy makers, the reality has been more problematic and this change is taking place slowly.

### Table 1.1 Age groups in relation to orthopaedic problems

<table>
<thead>
<tr>
<th>Age group</th>
<th>Examples often specific to age group</th>
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<tbody>
<tr>
<td>Familial/hereditary</td>
<td>Paget’s</td>
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<tr>
<td></td>
<td>Osteogenesis imperfecta</td>
</tr>
<tr>
<td>Congenital</td>
<td>DDH</td>
</tr>
<tr>
<td></td>
<td>Talipes</td>
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<tr>
<td>Post natal and</td>
<td>Birth injuries</td>
</tr>
<tr>
<td>pre-walking</td>
<td></td>
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<tr>
<td>Early childhood</td>
<td>Rickets and osteomalacia</td>
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<tr>
<td></td>
<td>Non-accidental injury</td>
</tr>
<tr>
<td></td>
<td>Accidental injury</td>
</tr>
<tr>
<td>Mid to late childhood</td>
<td>Juvenile chronic arthritis</td>
</tr>
<tr>
<td></td>
<td>Perthes’ disease</td>
</tr>
<tr>
<td>Young person/</td>
<td>Slipped upper femoral epiphysis</td>
</tr>
<tr>
<td>adolescence</td>
<td>Osgood-Schlatter disease</td>
</tr>
<tr>
<td>Early adulthood</td>
<td>Injuries resulting from high energy trauma</td>
</tr>
<tr>
<td></td>
<td>Sports injuries</td>
</tr>
<tr>
<td></td>
<td>Rheumatoid arthritis</td>
</tr>
<tr>
<td></td>
<td>Ankylosing spondylitis</td>
</tr>
<tr>
<td>Middle and late</td>
<td>Work related injury</td>
</tr>
<tr>
<td>adulthood</td>
<td>Back pain</td>
</tr>
<tr>
<td>Later life/older age</td>
<td>Injuries resulting from low energy trauma</td>
</tr>
<tr>
<td></td>
<td>Fragility fractures</td>
</tr>
<tr>
<td></td>
<td>Osteoporosis</td>
</tr>
<tr>
<td></td>
<td>Degenerative joint conditions</td>
</tr>
</tbody>
</table>

In the orthopaedic and trauma setting this is seen as feasible where the impact on the patient’s ability to carry out fundamental activities is minor. It is important to bear in mind, however, that non-admission to or early discharge from hospital can be both anxiety provoking and uncomfortable for patients and their families and there is a need to provide support that ensures that specialist orthopaedic advice and services are accessible remotely from the hospital. In particular, services need to ensure that patients recovering at a distance from an acute hospital setting in their own homes are afforded support and a care package which includes fundamental elements such as effective pain relief, good nutrition, support for rehabilitation, access to advice and support and all of those things the patient needs to reach both their recovery and rehabilitation potential as well as maintain their safety. Such services can be complex and difficult to coordinate. One of the difficulties in providing adequate support in the patient’s home can be funding and purchasing mismatches between the acute hospital and community services, which may be quite separate entities depending on the structure and funding of the health care system. Family support for care in the home is also becoming increasingly challenging as the role and employment of family members change.

For more than a quarter of a century there has been a strong focus on reducing lengths of stay and moving from hospital-based to community-based care. This focus is driven by the need to stretch limited resources while maintaining the quality of care. While this shift has long been an important aim for health care managers and policy makers, the reality has been more problematic and this change is taking place slowly.
Musculoskeletal conditions, injuries and surgery are problems which take time to resolve and may leave the individual of any age with varying degrees of temporary or permanent disability which require careful support and rehabilitation. Within this drive is a danger that patients are being discharged from hospital with residual nursing needs and there is a consequent need to develop care practice at the boundaries of the care settings. The development of technology is offering new opportunities for monitoring and supporting patients in their homes, especially in rural and remote settings, but in many areas this has yet to be applied to the orthopaedic patient. Meanwhile orthopaedic and trauma practitioners need to develop skills in providing care and support from a distance and the use of communication technology is likely to increase as this aim becomes more relevant in the future.

**Ethical and legal aspects of orthopaedic and trauma care**

Practitioners are increasingly required to consider the complex nature of ethical issues which affect the orthopaedic and trauma patient. As with all other branches of nursing, there are both specialised and general issues that affect the specific patient group and the orthopaedic practitioner needs a deep working understanding of these.

Much of the discussion about ethical issues in all aspects of nursing is related to the nature and quality of care. Nursing care is often seen as being synonymous with holistic patient-centred approaches which are non-judgmental and include the demonstration of attitudes and behaviours that are sensitive to the needs of patients and carers and respect individuality and choice (McSherry et al., 2012). This is especially important when orthopaedic and trauma care takes place in highly pressurised environments in which it is possible to lose sight of patient-centred priorities. Effective education of orthopaedic practitioners, insightful and transformational leadership and the development of a strong patient priority-centred evidence base are central to this. Within this is the need to develop practitioners not only with the right knowledge, skills and attitudes but with a passion for working with patients with very specific and significant needs related to their musculoskeletal problem.

The provision of quality care within a framework which values and respects dignity is a constant source of discussion in all health care settings. This is particularly important in maintaining their own safety when the patient is a vulnerable child or older adult or other individual with impairment. As people with learning disabilities live longer they are more likely to require care in orthopaedic settings. Mental health problems such as debilitating depression frequently affect care and recovery. There remains a need for the practitioner to develop the skills to care for orthopaedic patients with a wide variety of needs which make them vulnerable. The ‘safeguarding’ from harm of both children and vulnerable adults is becoming an increasing priority and must be central to all care provided.

In any health care setting, informed consent to all procedures and activities is an important part of care along with consideration of the mental capacity of the patient. Orthopaedic interventions carry with them significant risks. Understanding how to assess the capacity of an individual to make decisions about their care is an important part of informed consent – as is the ability to ensure that patients, carers and families understand the risks of the decisions they are being asked to make. Practitioners must adhere to Acts of Parliament in their own country which provide a statutory framework to empower and protect people of all ages who may lack capacity to make their own decisions.

There is a danger that orthopaedic practitioners assume that ‘do not resuscitate’ orders and ‘living wills’ do not relate to the orthopaedic/trauma patient group except in the oncology setting. This can perhaps be traced to the specialty’s focus on ‘healing and recovery.’ However, as caring develops in the coming decades it is likely that there will be a greater focus on end of life issues and practitioners must be aware of national guidance and legislation that requires them to be aware of best practice in both decision making and communication. One example of this is in the discussion regarding the need to consider palliative care for frail older patients with major orthopaedic injuries. Research increasingly shows that some conditions are life-limiting. One example is hip fracture which often occurs in very frail elderly patients and may need to instigate a sensitive discussion about the need to implement end of life care (Murray et al., 2012). Decisions and discussions about such matters may not have been, but will need to be, part of the
orthopaedic practitioners’ skills set as the quality of end of life care reaches a more prominent place in all settings.

Summary

This chapter has examined the nature of orthopaedic and trauma nursing and the main issues which drive its development including public health, political, practical and legal and ethical agendas. It has highlighted the diverse needs of the orthopaedic patient along the entire age continuum and in the variety of settings in which care takes place. It acknowledges that modern health care is complicated and has many drivers and that this leads to numerous complex ethical issues with which the practitioner must engage. It is hoped that these principles can be successfully applied to the material contained within the remainder of this book.

Recommended further reading


References


CHAPTER 2
The knowledge and evidence base for practice

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Introduction

The aim of this chapter is to enable the orthopaedic practitioner to appraise evidence related to daily care decisions in a sound and unbiased manner and then apply the findings and evaluate the care outcomes. Hunt (1938) gives a very insightful view of her experience in developing orthopaedic nursing and the impact of social and political factors she had to face. Since this publication there have been many books written to help both student and qualified orthopaedic practitioners (Powell 1986, Footner 1987, Davis 1994, Maher et al., 2002, Kneale and Davis 2005) along with journals and individual papers. Over time, there has developed a rich and varied body of knowledge. Content has gradually moved away from descriptions of what should be done to patients to a more considered view of patient care based on current evidence and more of a focus on how to engage with the patient.

There have been a number of influences on the development of nursing knowledge. The Briggs report in 1972 (Committee on Nursing) suggested that nursing should become a research-based profession and there has been much written about how and why this is necessary, the impact it has on patient care and the view of nursing by other professions. Care up to this point had often been based upon what had traditionally been delivered under the authority of senior staff. Whilst this may have been based on years of experience there was no real assurance that the care delivered was the best possible or was even effective. Policies and education began to respond to this but, over subsequent decades, it had been noted that the uptake of research by nurses had been sporadic and sometimes limited. Hunt (1981) identified that research was still not really finding its way into practice a decade after the report was published. Another decade later Closs and Cheater (1994) felt that research had started to permeate the culture of nursing, although they did not think it was a clearly embedded concept. Nearly thirty years later Batson (1999) felt that many practices were still based on local circumstance rather than research.

There appears to have been a number of driving forces for the need to use research in practice over the years since 1972 and these have been propelled by both economic and educational factors. Clarke (1999) looks at this in terms of efficiency and effectiveness in clinical decision making and Gerrish and Clayton (1998) add the concern for quality improvement and cost consciousness. Particular attention was paid to effectiveness by the NHS executive (1998) as they began to ask that clinical decisions should be based on the best possible evidence of effectiveness. This often results in the generation and application of clinical guidelines. But effectiveness is not the only criteria by which to judge new knowledge and evidence: feasibility, appropriateness and meaningfulness, particularly for the patient, are also important.

Effectiveness and economics may not have been the only driving force. French (1998) noted that as data were collected regarding practice on computer databases, there were geographical variations in care and this may not have been what is most effective, but what individual practitioners had traditionally done or wanted to do. This, according to Hicks and Hennessey (1997), brings in the notion of accountability as care cannot be delivered based upon opinion and/or authority; it needs some form of justification. This has
also led to a number of organisations such as Cochrane, Joanna Briggs and NICE (National Institute for Clinical Excellence) developing a number of resources and databases for both practice and teaching purposes.

There was also the encouragement of research utilisation, and Horsely et al. (1978) examined the complex organisational functions that range from problem identification to the implementation of an innovation. Many research texts were then published looking at how to undertake and critique research including chapters on change management. However, research can be used in more than one way and may not just be about innovation and change in practice. Estabrooks (1998) identified that it can be used as action research when directly applied to practice with change and evaluation taking place as part of the research. However, it can also be used conceptually to enlighten understanding and persuasively to change the views of others. As Bircumshaw (1990) suggests, research can be used in other ways without the need to directly implement it.

**Evidence-based practice**

Until recently there has been little mention of evidence-based practice and more of a focus on research and its utilisation. This can be regarded as a problem as there is a tendency to use these terms interchangeably. Whilst evidence-based practice may encompass research utilisation, evidence is more than the findings of research and, as pointed out by McKenna and Cutcliffe (1999), the absence of research does not mean that evidence-based decisions cannot be made.

The most frequently cited definition of evidence-based practice is that of Sacket et al. (1996) and focusses on ensuring that current best evidence should be used in making decisions about medical care. They identify the best evidence as systematic research but note that individual clinical expertise needs to be integrated with this. This does not, however, help us to understand what would happen in the absence of research or consider the patient in the decision making process. Ryecroft-Malone et al. (2004) provide a more encompassing definition and incorporate the need to look at the impact of research, the effectiveness of expert knowledge and the need to integrate patients’ experiences into decision making. See Figure 2.1

![Figure 2.1 Elements of evidence-based healthcare](image)

Ingersoll et al.’s (2000) definition brings in the nursing context and notes that it is more about theory-derived research-based information, about care delivery to groups and individuals and, most importantly, is considerate of individual needs and preferences. This definition does not imply that primary research is the only form of evidence and it includes the patient in decisions reflecting the increased levels of health related knowledge of patients and the view that ‘medicine knows best’ is quickly being eroded by the ‘expert’ patient.

Nurses must embrace this issue from their own professional perspective as well as differentiate their professional roles and responsibilities. Whilst evidence-based care is becoming a priority in health care, Banning (2005) found that nurses were not able to differentiate very well between evidence-based medicine and evidence-based practice. Whilst nurses take on more advanced roles that often merge with the boundaries of other disciplines, the development of knowledge and understanding must continue to build on their professional knowledge.

More recent research into evidence-based practice tends to move away from how it is defined and considers how it works in practice. This is important in relation to the changing roles of the nurse in modern health care. Some may argue that, up to now, there is little indication that evidence-based practice works. Gerrish et al. (2011), for example, examined how nurses in advanced roles act as ‘knowledge brokers’ for clinical nurses, thus enabling them to use evidence effectively. Whilst nurses may be working in complex and advanced roles, they can develop and use knowledge and skills...