FIFTH EDITION

Jane Tyerman
Shelley L. Cobbett

LEWIS'S

Medical-Surgical Nursing in Canada

Assessment and Management of Clinical Problems

ELSEVIER

Evolve®
Student Resources on Evolve
Access Code Inside

CONTENTS

SECTION 8
Conditions of Ingestion, Digestion, Absorption, and Elimination

SECTION 9
Conditions of Urinary Function

SECTION 10
Conditions Related to Regulatory and Reproductive Mechanisms

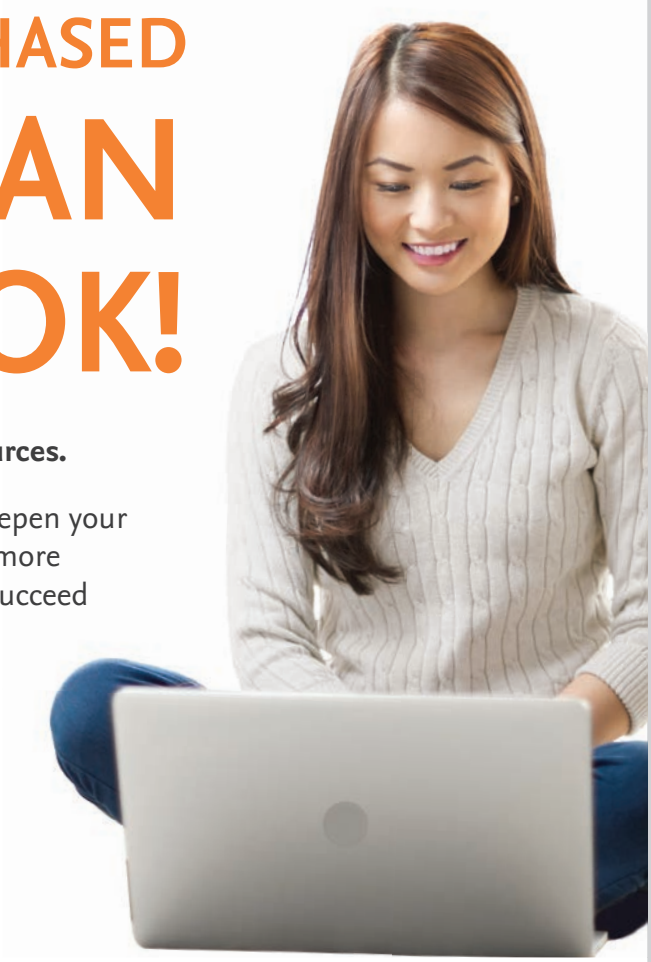
SECTION 11
Conditions Related to Movement and Coordination

SECTION 12
Nursing Care in Specialized Settings

Appendix

Evolve®

YOU'VE JUST PURCHASED MORE THAN A TEXTBOOK!



Enhance your learning with Evolve Student Resources.

These online study tools and exercises can help deepen your understanding of textbook content so you can be more prepared for class, perform better on exams, and succeed in your course.

Activate the complete learning experience that comes with each NEW textbook purchase by registering with your scratch-off access code at

http://evolve.elsevier.com/Canada/Lewis/medsurg/

If your school uses its own Learning Management System, your resources may be delivered on that platform. Consult with your instructor.

If you rented or purchased a used book and the scratch-off code at right has already been revealed, the code may have been used and cannot be re-used for registration. To purchase a new code to access these valuable study resources, simply follow the link above.

Place Sticker Here

REGISTER TODAY!

ELSEVIER

You can now purchase Elsevier products on Evolve!
Go to evolve.elsevier.com/shop to search and browse for products.

2019v1.0

LEWIS'S

Medical-Surgical Nursing in Canada

Assessment and Management of Clinical Problems

A tailored education experience — *Sherpath book-organized collections*

Sherpath is the digital teaching and learning technology designed specifically for healthcare education.

ELSEVIER

Sherpath book-organized collections offer:

Objective-based, digital lessons, mapped chapter-by-chapter to the textbook, that make it easy to find applicable digital assignment content.

Adaptive quizzing with personalized questions that correlate directly to textbook content.

Teaching materials that align to the text and are organized by chapter for quick and easy access to invaluable class activities and resources.

Elsevier ebooks that provide convenient access to textbook content, even offline.

VISIT
myevolve.us/sherpath
today to learn more!

21-CS-0280 TM/AF 6/21

FIFTH EDITION

LEWIS'S Medical-Surgical Nursing in Canada

Assessment and Management of Clinical Problems

Jane Tyerman
RN, BA, BScN, MScN, PhD, CCSNE
Assistant Professor
School of Nursing
Faculty of Health Sciences
University of Ottawa
Ottawa, Ontario
Professeure Adjointe
École des sciences infirmières
Faculté des sciences de la santé
Université d'Ottawa
Ottawa, Ontario

Shelley L. Cobbett
RN, BN, GnT, MN, EdD
Assistant Professor, Nursing and BScN Site Administrator
School of Nursing – Yarmouth Campus
Dalhousie University
Yarmouth, Nova Scotia

US Author

Mariann M. Harding, **RN, PhD, FAADN, CNE**
Professor of Nursing
Kent State University at Tuscarawas
New Philadelphia, Ohio

Section Editors for the US 11th Edition

Jeffrey Kwong, **RN, DNP, MPH, ANP-BC, FAAN, FAANP**
Professor
Division of Advanced Nursing Practice
School of Nursing
Rutgers University
Newark, New Jersey

Dottie Roberts, **RN, EdD, MSN, MACI, OCNS-C, CMSRN, CNE**
Executive Director
Orthopaedic Nurses Certification Board
Chicago, Illinois

Debra Hagler, **RN, PhD, ACNS-BC, CNE, CHSE, ANEF, FAAN**
Clinical Professor
Edson College of Nursing and Health Innovation
Arizona State University
Phoenix, Arizona

Courtney Reinisch, **RN, DNP, FNP-BC**
Undergraduate Program Director
Associate Professor
School of Nursing
Montclair State University
Montclair, New Jersey

ELSEVIER

LEWIS'S MEDICAL-SURGICAL NURSING IN CANADA:
ASSESSMENT AND MANAGEMENT OF CLINICAL PROBLEMS, FIFTH EDITION
ISBN: 978-0-323-79156-4
Copyright © 2023 by Elsevier, Inc. All rights reserved.

Previous editions copyrighted 2019, 2014, 2009, and 2006 by Elsevier Canada, a Division of Reed Elsevier Canada, Ltd.

Adapted from *Medical-Surgical Nursing: Assessment and Management of Clinical Problems,* 11th Edition, by Mariann M. Harding, Jeffrey Kwong, Dottie Roberts, Debra Hagler, and Courtney Reinisch. Copyright © 2020, Elsevier Inc., ISBN: 9780323551496 (hardcover). All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher. Reproducing passages from this book without such written permission is an infringement of copyright law.

Requests for permission to make copies of any part of the work should be mailed to: College Licensing Officer, access ©, 1 Yonge Street, Suite 1900, Toronto, ON M5E 1E5. Fax: (416) 868-1621. All other inquiries should be directed to the publisher, www.elsevier.com/permissions.

Every reasonable effort has been made to acquire permission for copyrighted material used in this text and to acknowledge all such indebtedness accurately. Any errors and omissions called to the publisher's attention will be corrected in future printings.

Notice

Practitioners and researchers must always rely on their own experience and knowledge in evaluating and using any information, methods, compounds or experiments described herein. Because of rapid advances in the medical sciences, in particular, independent verification of diagnoses and drug dosages should be made. To the fullest extent of the law, no responsibility is assumed by Elsevier, authors, editors, or contributors for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions, or ideas contained in the material herein.

Managing Director, Global Content Partners: Kevonne Holloway
Senior Content Strategist (Acquisitions, Canada): Roberta A. Spinosa-Millman
Content Development Specialists: Tammy Scherer, Suzanne Simpson
Publishing Services Manager: Catherine Jackson
Health Content Management Specialist: Kristine Feeherty
Design Direction: Amy Buxton

Printed in Canada

Last digit is the print number: 9 8 7 6 5 4 3 2 1

ELSEVIER Book Aid International
Working together to grow libraries in developing countries
www.elsevier.com • www.bookaid.org

CONTENTS

SECTION 1
Concepts in Nursing Practice

SECTION 2 Pathophysiological Mechanisms of Disease

SECTION 3 Perioperative Care

SECTION 4 Conditions Related to Altered Sensory Input

SECTION 5 Conditions of Oxygenation: Ventilation

SECTION 6 Conditions of Oxygenation: Transport

SECTION 7 Conditions of Oxygenation: Perfusion

SECTION 8 Conditions of Ingestion, Digestion, Absorption, and Elimination

SECTION 9 Conditions of Urinary Function

SECTION 10 Conditions Related to Regulatory and Reproductive Mechanisms

SECTION 11 Conditions Related to Movement and Coordination

SECTION 12 Nursing Care in Specialized Settings

Appendix

ABOUT THE AUTHORS

JANE TYERMAN, RN, BA, BScN, MScN, PhD, CCSNE

Jane Tyerman is an Assistant Professor at the University of Ottawa's School of Nursing in Ottawa, Ontario. She holds a diploma in nursing from St. Lawrence College in Ottawa, Ontario; a Bachelor of Arts degree from the University of Ottawa; a Bachelor of Science in nursing from Athabasca University in Alberta; and a Master of Science in nursing and a PhD in nursing from Queen's University in Kingston, Ontario. She has over 25 years of experience in acute care clinical practice and more than 15 years of academic teaching experience at the graduate and undergraduate levels. She is an Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS) instructor with the Canadian Heart and Stroke Foundation. Dr. Tyerman has contributed to multiple NCLEX textbooks published by Elsevier and has been an HESI Live Review faculty member, delivering in-person and online workshops to graduating students across Canada. She is also an editor for *Edelman and Kudzma's Canadian Health Promotion Throughout the Lifespan*. She has made significant contributions to nursing education by advancing the pedagogy that underpins the effective use of clinical simulation and through her innovative use of technology to expand equity and access to high-quality teaching and learning resources. She is dedicated to developing and researching bilingual virtual simulation games through her role as Co-President of the Canadian Alliance of Nurse Educators Using Simulation (CAN-Sim). Collaborating with nurse educators across Canada and internationally, she has authored multiple publications related to simulation and virtual simulation games.

SHELLEY L. COBBETT, RN, BN, GnT, MN, EdD

Shelley Cobbett began her nursing career at the Yarmouth Regional Hospital School of Nursing diploma program. She received her Post-RN, BN and her MN degrees from Dalhousie University and her EdD from Charles Sturt University. Her clinical practice background is maternal-child nursing, and she has been a nurse educator for over 33 years. Her main research area during the past 15 years has focused on the scholarship of learning and teaching, with over 50 peer-reviewed publications, invited speaker engagements, and oral conference presentations. Dr. Cobbett is President for the Atlantic Region Canadian Association of Schools of Nursing, and she is part of the Education Advisory Committee for the Nova Scotia College of Nursing. She has been recognized for her commitment to the implementation and evaluation of best pedagogical practices within nursing education as recipient of a Dalhousie University Teaching Award and the Canadian Association of Schools of Nursing Excellence in Teaching Award. She is currently an Assistant Professor at Dalhousie University School of Nursing, Site Administrator of the BScN Program at the Yarmouth Campus, and Curriculum Implementation and Evaluation Lead for a new, innovative BScN degree that was initiated in 2016.

11TH US EDITION AUTHOR

Mariann M. Harding, RN, PhD, FAADN, CNE

Mariann Harding is a Professor of Nursing at Kent State University Tuscarawas, New Philadelphia, Ohio, where she has been on the faculty since 2005. She received her diploma in nursing from Mt. Carmel School of Nursing in Columbus, Ohio; her Bachelor of Science in nursing from Ohio University in Athens, Ohio; her Master of Science in nursing as an adult nurse practitioner from the Catholic University of America in Washington, DC; and her doctorate in nursing from West Virginia University in Morgantown, West Virginia. Her 29 years of nursing experience have primarily been in critical care nursing and teaching in licensed practical, associate, and baccalaureate nursing programs. She currently teaches medical-surgical nursing, health care policy, and evidence-based practice. Her research has focused on promoting student success and health promotion among individuals with gout and facing cancer.

SECTION EDITORS FOR THE US 11TH EDITION

Jeffrey Kwong, RN, DNP, MPH, ANP-BC, FAAN, FAANP

Jeffrey Kwong is a Professor at the School of Nursing at Rutgers, the State University of New Jersey. He has worked for over 20 years in the area of adult primary care with a special focus on HIV. He received his undergraduate degree from the University of California–Berkeley, his nurse practitioner degree from the University of California–San Francisco, and his doctoral training at the University of Colorado–Denver. He also has a Master of Science degree in public health with a focus on health education and behavioural sciences from the University of California–Los Angeles, and he was appointed a Hartford Geriatric Interprofessional Scholar while completing his gerontology education at New York University. In addition to teaching, Dr. Kwong maintains a clinical practice at Gotham Medical Group in New York City. He is a Fellow in the American Association of Nurse Practitioners.

Dottie Roberts, RN, EdD, MSN, MACI, OCNS-C, CMSRN, CNE

Dottie Roberts received her Bachelor of Science in nursing from Beth-El College of Nursing, Colorado Springs, Colorado; her Master of Science in adult health nursing from Beth-El College of Nursing and Health Sciences; her Master of Arts in curriculum and instruction from Colorado Christian University, Colorado Springs, Colorado; and her EdD in health care education from Nova Southeastern University, Ft. Lauderdale, Florida. She has over 25 years of experience in medical-surgical and orthopedic nursing and holds certifications in both specialties. She has also taught in two baccalaureate programs in the southeast and is certified as a nurse educator.

She currently serves as contributing faculty for the RN-BSN program at Walden University. For her dissertation, Dottie completed a phenomenological study on facilitation of critical-thinking skills by clinical faculty in a baccalaureate nursing program. She has been Executive Director of the Orthopaedic Nurses Certification Board since 2005 and editor of *MEDSURG Nursing*, official journal of the Academy of Medical-Surgical Nurses, since 2003. Her free time is spent travelling, reading, and cross-stitching.

Debra Hagler, RN, PhD, ACNS-BC, CNE, CHSE, ANEF, FAAN

Debbie Hagler is a Clinical Professor in the Edson College of Nursing and Health Innovation at Arizona State University in Phoenix. She is Deputy Editor of *The Journal of Continuing Education in Nursing*. She received her Practical Certificate in nursing, Associate degree in nursing, and Bachelor of Science in nursing from New Mexico State University. She earned a Master of Science degree from the University of Arizona and a doctorate in learning and instructional technology from Arizona State University. Her clinical background is in adult health and critical care nursing. Her current role focuses on supporting students through the Barrett Honors program and helping faculty members develop their scholarly writing for publication.

Courtney Reinisch, RN, DNP, FNP-BC

Courtney Reinisch is the Undergraduate Program Director and Associate Professor for the School of Nursing at Montclair State University in New Jersey. She earned her Bachelor of Arts in biology and psychology from Immaculata University. She received her Bachelor of Science in nursing and Master of Science in family practice nurse practitioner degree from the University of Delaware. She completed her Doctor of Nursing Practice degree at Columbia University School of Nursing. Courtney's nursing career has focused on providing care for underserved populations in primary care and emergency settings. She has taught in undergraduate and graduate nursing programs in New York and New Jersey. Courtney enjoys playing tennis, snowboarding, reading, and spending time with her family and dogs. She is the biggest fan for her nieces and nephews at their soccer games, cross-country events, and track meets. She is an active volunteer in the Parents Association of her son's school and advocates for the needs of students with learning differences and for the LGBTQ community.

CONTRIBUTORS

CANADIAN CONTRIBUTORS

Veronique M. Boscart, RN, MScN, MEd, PhD
CIHR/Schlegel Industrial Research Chair for Colleges in Seniors Care
Executive Director, Canadian Institute for Seniors Care
Executive Dean, School of Health & Life Sciences
Conestoga College Institute of Technology and Advanced Learning
Kitchener, Ontario

Wendy Bowles, NP F Vascular Surgery
Royal Columbian Hospital, Fraser Health
New Westminster, British Columbia;
Regional Department Head, Department of Nurse Practitioners
Vice-Chair, Medical Advisory Committee
Adjunct Professor
University of Victoria
Victoria, British Columbia

Myriam Breau, RN, MSN, PhD(C)
Professor
École de science infirmière/Nursing School
Université de Moncton
Moncton, New Brunswick

Danielle Byrne, RN, MN, CCSNE
Adjunct Lecturer, Clinical Instructor, Simulation Specialist
School of Nursing
Dalhousie University
Yarmouth, Nova Scotia

Erica Cambly, RN, MN, CCNE
Associate Professor, Teaching Stream
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Rosemary Cashman, MA, MSc(A), ACNP, NP(A)
Nurse Practitioner
BC Cancer–Vancouver Centre
Vancouver, British Columbia

Ann Mary Celestini, RN, BA, BScN, MHST
Lecturer, Teaching Intensive
Trent/Fleming School of Nursing
Trent University
Peterborough, Ontario

Susan Chernenko, RN(EC), MN
Nurse Practitioner
Toronto Lung Transplant Program
Toronto General Hospital, University Health Network
Toronto, Ontario;
Associate Graduate Lecturer
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Shelley Clarke, RN, MScN, CCSNE
Professor, Nursing Program
Health & Community Studies
Algonquin College
Ottawa, Ontario

Shelley L. Cobbett, RN, BN, GnT, MN, EdD
Assistant Professor, Nursing and BScN Site Administrator
School of Nursing – Yarmouth Campus
Dalhousie University
Yarmouth, Nova Scotia

Sarah Crowe, MN, PMD-NP(F), CNCC(C)
Nurse Practitioner, Critical Care
Surrey Memorial Hospital
Surrey, British Columbia;
Adjunct Professor
School of Nursing
University of British Columbia
Langley, British Columbia

Denise Delorey, BScN, RN, MAdEd
Assistant Professor
Rankin School of Nursing
St. Francis Xavier University
Antigonish, Nova Scotia

Serena Eagland, RN (C), BSN
Clinical Educator
Vancouver Community Primary Care
Vancouver Coastal Health
Vancouver, British Columbia

Laura Fairley, RN, MN, CHPCN(C), CCHN(C)
Assistant Professor, Teaching Stream, Undergraduate Program
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Mary Ann Fegan, RN, MN
Associate Professor, Teaching Stream
Undergraduate Clinical Resource Faculty
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Julie Fraser, RN, MN
Interim Executive Director
Patient Experience Professional Practice
Fraser Health
Surrey, British Columbia

Natasha Fulford, BN, RN, MN
Associate Director, Non-Degree Programs
Centre for Nursing Studies
Memorial University of Newfoundland
St. John's, Newfoundland

Mary Kate Garrity, RN, BScN, EdD
Director of Care
Sienna Senior Living
Toronto, Ontario

Emma Garrod, RN, BScN, MSN
Clinical Nurse Educator–Substance Use
Director
British Columbia Centre on Substance Use
Addiction Nursing Fellowship
Adjunct Professor
University of British Columbia School of Nursing
Vancouver, British Columbia

Renée Gordon, CD, RN, MSc, CMSN(C), CCNE, CCCI, CCSNE
Associate Teaching Professor
Faculty of Nursing
University of New Brunswick
Moncton, New Brunswick

Leslie Graham, RN, MN, PhD(C), CNCC, CHSE, CCSNE
Coordinator, RPN to BScN Nursing Program
Professor, Nursing
Durham College
Oshawa, Ontario;
Adjunct Professor
Ontario Tech University
Oshawa, Ontario

Krista Gushue, BN, RN, MN, CCCI
Nurse Educator
Centre for Nursing Studies
St. John's, Newfoundland

Peggy D. Hancock, RN, MN
Nurse Educator
Western Regional School of Nursing
Corner Brook, Newfoundland

Jackie Hartigan-Rogers, RN, MN
Assistant Professor, Nursing
School of Nursing
Dalhousie University
Yarmouth, Nova Scotia

Kimberly Hellmer, RN, BN, MN
Unit Manager, Medicine
Foothills Medical Centre
Alberta Health Services
Calgary, Alberta

Heather Helpard, RN, BScN, MN, PhD
Assistant Professor
Rankin School of Nursing
Saint Francis Xavier University
Antigonish, Nova Scotia

Sarah Ibrahim, RN, MN, PhD, CHSE
Adjunct Lecturer
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Lynn Jansen, RN, PhD
Assistant Dean and Associate Professor
University of Saskatchewan Prince Albert and North Campus College of Nursing
Prince Albert, Saskatchewan

Sarah Johnston, RN, MN
Assistant Professor, Teaching Stream
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Evan Keys, RN, MNSc, ENC(C)
Registered Nurse
Schwartz/Reisman Emergency Centre
Mount Sinai Hospital, Sinai Health
Toronto, Ontario;
Clinical Research Coordinator
Clinical Cardiovascular Physiology Laboratory
Toronto General Hospital Research Institute, University Health Network
Toronto, Ontario

Carol A. Kuzio, RN, BScN, CBN
Clinical Practice Lead
Diabetes, Obesity and Nutrition Strategic Clinical Network
Alberta Health Services
Edmonton, Alberta

Elizabeth Lee, NP, MN, CGN(C)
Adjunct Lecturer
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario;
Nurse Practitioner, Hepatology
Toronto General Hospital, University Health Network
Toronto, Ontario

Jana Lok, RN, PhD, ENC(C), CHSE
Assistant Professor, Teaching Stream
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Bridgette Lord, RN, MN, NP-Adult
Acute Care Nurse Practitioner
Peter Gilgan Centre for Women's Cancers
Women's College Hospital
Toronto, Ontario

Jean Jacque E. Lovely, BA, BScN, MN, MBA
Director
Core Business Operations–Digital Health
Deloitte Canada
Edmonton, Alberta

Marian Luctkar-Flude, RN, BScN, MScN, PhD, CCSNE
Associate Professor
School of Nursing
Queen's University
Kingston, Ontario

Janet MacIntyre, RN, PhD
Assistant Professor
Faculty of Nursing
University of Prince Edward Island
Charlottetown, Prince Edward Island

Lesley MacMaster, RN, MScN
Nursing Professor
Georgian College
Barrie, Ontario

Lynn McCleary, RN, PhD
Professor
Department of Nursing, Faculty of Applied Health Sciences
Brock University
St. Catharines, Ontario

Susannah R. McGeachy, RN(EC), NP-PHC, MN
Nurse Practitioner
University Health Network
Toronto, Ontario

Andrea Miller, MHSc, RD, FDC
Registered Dietitian
Private Practice
Whitby, Ontario

Tess Montada-Atin, RN(EC), MN, CDE, CNeph (C)
Adjunct Lecturer
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Joanne Newell, RN, MN
Adjunct Assistant Professor
School of Nursing
Dalhousie University
Yarmouth, Nova Scotia

Kathryn F. Nichol, RN, MScN, BA, CON(C), CHPCN(C)
Palliative Care Nurse Specialist
Supportive and Palliative Care Team
The Ottawa Hospital
Ottawa, Ontario

Sara Olivier, RN, BScN, MN
Advanced Practice Nurse
Supportive & Palliative Care and Substance Use Programs
The Ottawa Hospital
Ottawa, Ontario

Denise K.M. Ouellette, MSN, RN, CNN(C)
Clinical Nurse Specialist, Neurosurgical Outreach Activities
St Michael's Hospital, Unity Health Toronto
Toronto, Ontario;
Adjunct Lecturer
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario

Efrosini Papaconstantinou, RN, PhD
Associate Professor
Faculty of Health Sciences
Ontario Tech University
Oshawa, Ontario

Marie-Noëlle Paulin, RN, BScN, MScN
Clinical Nurse Instructor
School of Nursing
Moncton University
Bathurst, New Brunswick

April Pike, PhD
Associate Professor
Faculty of Nursing
Memorial University of Newfoundland
St. John's, Newfoundland

Dawn Pittman, RN, MScN, PhD(C)
Nurse Educator
Western Regional School of Nursing
Memorial University of Newfoundland and Labrador
Corner Brook, Newfoundland

Debbie Rickeard, RN, DNP, MSN, BScN, CCRN, CNE
Experiential Learning Specialist
Faculty of Nursing
University of Windsor
Windsor, Ontario

Sheila Rizza, RN(EC), MN NP-Adult, CNCC(C), CCN(C)
Nurse Practitioner
Heart Function Clinic
Trillium Health Partners
Mississauga, Ontario

Anita Robertson, RN
Nursing Instructor
Health and Wellness Programs
Nunavut Arctic College
Iqaluit, Nunavut

Susan E. Robinson, RN, BScN, MN, CON(C)
Coroner Investigator
Office of the Chief Coroner of Ontario
Toronto, Ontario;
Staff Nurse, Emergency Department
Michael Garron Hospital
Toronto, Ontario

Kathy Rodger, MN, BSN, RN, CMSN(C)
Associate Professor
College of Nursing
University of Saskatchewan
Regina, Saskatchewan

Kara Sealock, RN, BN, MEd EdD, CNCC(C), CCNE
Senior Instructor
Faculty of Nursing
University of Calgary
Calgary, Alberta

Cydnee Seneviratne, RN, BScN, MN, PhD
Senior Instructor
Faculty of Nursing
University of Calgary
Calgary, Alberta

Catherine Sheffer, RN PhD, PNC(C)
Senior Instructor
School of Nursing
Dalhousie University
Halifax, Nova Scotia

Sarah J. Siebert, RN, MSN, GNC(C)
Director, Primary Care
Fraser Health
Surrey, British Columbia

Catharine R. Simpson, RN, MN
Senior Instructor
Department of Nursing & Health Sciences
University of New Brunswick
Saint John, New Brunswick

Rani H. Srivastava, RN, PhD
Dean, School of Nursing
Thompson Rivers University
Kamloops, British Columbia;
Adjunct Professor
Faculty of Health
York University
Toronto, Ontario;
Adjunct Professor
School of Nursing
Dalhousie University
Halifax, Nova Scotia

Jane Tyerman, RN, BA, BScN, MScN, PhD, CCSNE
Assistant Professor
School of Nursing
Faculty of Health Sciences
University of Ottawa
Ottawa, Ontario
Professeure Adjointe
École des sciences infirmières
Faculté des sciences de la santé
Université d'Ottawa
Ottawa, Ontario

Christina Vaillancourt, RD, CDE, MHSc
Associate Graduate Faculty, Master of Health Sciences, and Adjunct Professor
Faculty of Health Sciences
Ontario Tech University
Oshawa, Ontario

Brandi Vanderspank-Wright, RN, PhD, CNCC(C)
Associate Professor
School of Nursing, Faculty of Health Sciences
University of Ottawa
Ottawa, Ontario

Ellen Vogel, RD, FDC, PhD
Associate Professor
Faculty of Health Sciences
Ontario Tech University
Oshawa, Ontario

Laura Wilding, BScN, RN, MHS, ENC(C)
Advanced Practice Nurse, Regional Program Manager
Champlain Regional Medical Assistance in Dying (MAiD) Network
The Ottawa Hospital
Ottawa, Ontario

Barbara Wilson-Keates, RN, PhD, CCSNE
Academic Coordinator
Faculty of Health Disciplines
Athabasca University
Athabasca, Alberta

Kevin Woo, RN, PhD, NSWOC, WOCC(C)
Professor
School of Nursing
Queen's University
Kingston, Ontario

Colina Yim, NP, MN, AF-AASLD
Adjunct Lecturer
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Toronto, Ontario;
Nurse Practitioner, Hepatology
Toronto General Hospital, University Health Network
Toronto, Ontario

CONTRIBUTORS TO THE US 11TH EDITION

Vera Barton-Maxwell, PhD, APRN, FNP-BC, CHFN
Assistant Professor, Advanced Nursing Practice
Family Nurse Practitioner Program
Georgetown University
Washington, District of Columbia;
Nurse Practitioner
Center for Advanced Heart Failure
West Virginia University Heart and Vascular Institute
Morgantown, West Virginia

Cecilia Bidigare, MSN, RN
Professor
Nursing Department
Sinclair Community College
Dayton, Ohio

Megan Ann Brissie, DNP, RN, ACNP-BC, CEN
Acute Care Nurse Practitioner, Neurosurgery
Duke Health
Durham, North Carolina;
Adjunct Instructor
College of Nursing
University of Cincinnati
Cincinnati, Ohio

Diana Taibi Buchanan, PhD, RN
Associate Professor
Biobehavioral Nursing and Health Systems
University of Washington
Seattle, Washington

Michelle Bussard, PhD, RN
RN to BSN Online eCampus Program Director
College of Health and Human Services
Bowling Green State University
Bowling Green, Ohio

Kim K. Choma, DNP, APRN, WHNP-BC
Women's Health Nurse Practitioner
Independent Consultant and Clinical Trainer, Kim Choma, DNP, LLC
Scotch Plains, New Jersey

Marisa Cortese, PhD, RN, FNP-BC
Research Nurse Practitioner, Hematology/Oncology
White Plains Hospital
White Plains, New York

Ann Crawford, RN, PhD, CNS, CEN
Professor
Department of Nursing
University of Mary Hardin-Baylor
Belton, Texas

Deena Damsky Dell, MSN, RN, APRN, AOCN(R), LNC
Oncology Advanced Practice Registered Nurse
Sarasota Memorial Hospital
Sarasota, Florida

Kimberly Day, DNP, RN
Clinical Assistant Professor
Edson College of Nursing and Health Innovation
Arizona State University
Phoenix, Arizona

Hazel Dennison, DNP, RN, APNc, CPHQ, CNE
Director of Continuing Nursing Education
College of Health Sciences, School of Nursing
Walden University
Minneapolis, Minnesota;
Nurse Practitioner, Urgent Care
Virtua Health System
Medford, New Jersey

Jane K. Dickinson, PhD, RN, CDE
Program Director/Lecturer
Diabetes Education and Management
Teachers College, Columbia University
New York, New York

Cathy Edson, MSN, RN
Nurse Practitioner, Emergency Department
Team Health—Virtua Memorial
Mt. Holly, New Jersey

Jonel L. Gomez, DNP, ARNP, CPCO, COE
Nurse Practitioner
Ophthalmic Facial Plastic Surgery, Specialists, Stephen Laquis, MD
Fort Myers, Florida

Sherry A. Greenberg, PhD, RN, GNP-BC, FGSA
Courtesy-Appointed Associate Professor, Nursing
Rory Meyers College of Nursing
New York University
New York, New York

Diana Rabbani Hagler, MSN-Ed, RN, CCRN
Staff Nurse, Intensive Care Unit
Banner Health
Gilbert, Arizona

Julia A. Hitch, MS, APRN, FNPCDE
Nurse Practitioner, Internal Medicine—Endocrinology
Ohio State University Physicians
Columbus, Ohio

Haley Hoy, PhD, APRN
Associate Professor
College of Nursing
University of Alabama in Huntsville
Huntsville, Alabama;
Nurse Practitioner
Vanderbilt Lung Transplantation, Vanderbilt Medical Center
Nashville, Tennessee

Melissa Hutchinson, MN, BA, RN
Clinical Nurse Specialist, MICU/CCU
VA Puget Sound Health Care System
Seattle, Washington

Mark Karasin, DNP, APRN, AGACNP-BC, CNOR
Advanced Practice Nurse, Cardiothoracic Surgery
Robert Wood Johnson University Hospital
New Brunswick, New Jersey;
Adjunct Faculty
Center for Professional Development, School of Nursing
Rutgers University
Newark, New Jersey

Patricia Keegan, DNP, NP-C, AACC
Director
Strategic and Programmatic Initiatives, Heart and Vascular Center
Emory University
Atlanta, Georgia

Kristen Keller, DNP, ACNP-BC, PMHNP-BC
Nurse Practitioner, Trauma and Acute Care Surgery
Banner Thunderbird Medical Center
Glendale, Arizona

Anthony Lutz, MSN, NP-C, CUNP
Nurse Practitioner
Department of Urology
Columbia University Irving Medical Center
New York, New York

Denise M. McEnroe-Petitte, PhD, RN
Associate Professor
Nursing Department
Kent State University Tuscarawas
New Philadelphia, Ohio

Amy Meredith, MSN, RN, EM Cert/Residency
APN-C Lead and APN
Emergency Department
Southern Ocean Medical Center
Manahawkin, New Jersey

Helen Miley, RN, PhD, AG-ACNP
Specialty Director of Adult Gerontology, Acute Care Nurse Practitioner Program
School of Nursing
Rutgers University
Newark, New Jersey

Debra Miller-Saultz, DNP, FNP-BC
Assistant Professor of Nursing
School of Nursing
Columbia University
New York, New York

Eugene Mondor, MN, RN, CNCC(C)
Clinical Nurse Educator, Adult Critical Care
Royal Alexandra Hospital
Edmonton, Alberta

Brenda C. Morris, EdD, RN, CNE
Clinical Professor
Edson College of Nursing and Health Innovation
Arizona State University
Phoenix, Arizona

Janice A. Neil, PhD, RN, CNE
Associate Professor
College of Nursing, Department of Baccalaureate Education
East Carolina University
Greenville, North Carolina

Yeow Chye Ng, PhD, CRNP, CPC, AAHIVE
Associate Professor
College of Nursing
University of Alabama in Huntsville
Huntsville, Alabama

Mary C. Olson, DNP, APRN
Nurse Practitioner, Medicine
Division of Gastroenterology and Hepatology
New York University Langone Health
New York, New York

Madona D. Plueger, MSN, RN, ACNS-BC CNRN
Adult Health Clinical Nurse Specialist
Barrow Neurological Institute
Dignity Health, St. Joseph's Hospital and Medical Center
Phoenix, Arizona

Matthew C. Price, MS, CNP, ONP-C, RNFA
Orthopedic Nurse Practitioner
Orthopedic One
Columbus, Ohio;
Director, Orthopedic Nurses Certification Board
Chicago, Illinois

Margaret R. Rateau, PhD, RN, CNE
Assistant Professor
School of Nursing, Education, and Human Studies
Robert Morris University
Moon Township, Pennsylvania

Catherine R. Ratliff, RN, PhD
Clinical Associate Professor and Nurse Practitioner
School of Nursing/Vascular Surgery
University of Virginia Health System
Charlottesville, Virginia

Sandra Irene Rome, MN, RN, AOCN
Clinical Nurse Specialist
Blood and Marrow Transplant Program
Cedars–Sinai Medical Center
Los Angeles, California;
Assistant Clinical Professor
University of California Los Angeles School of Nursing
Los Angeles, California

Diane M. Rudolphi, MSN, RN
Senior Instructor of Nursing
College of Health Sciences
University of Delaware, Newark
Newark, Delaware

Diane Ryzner, MSN, APRN, CNS-BC, OCNS-C
Clinical Nursing Transformation Leader, Orthopedics
Northwest Community Healthcare
Arlington Heights, Illinois

Andrew Scanlon, DNP, RN
Associate Professor
School of Nursing
Montclair State University
Montclair, New Jersey

Rose Shaffer, MSN, RN, ACNP-BC, CCRN
Cardiology Nurse Practitioner
Thomas Jefferson University Hospital
Philadelphia, Pennsylvania

Tara Shaw, MSN, RN
Assistant Professor
Goldfarb School of Nursing
Barnes-Jewish College
St. Louis, Missouri

Cynthia Ann Smith, DNP, APRN, CNN-NP, FNP-BC
Nurse Practitioner
Renal Consultants, PLLC
South Charleston, West Virginia

Janice Smolowitz, PhD, DNP, EdD
Dean and Professor
School of Nursing
Montclair State University
Montclair, New Jersey

Cindy Sullivan, MN, ANP-C, CNRN
Nurse Practitioner
Department of Neurosurgery
Barrow Neurological Institute
Phoenix, Arizona

Teresa Turnbull, DNP, RN
Assistant Professor
School of Nursing
Oregon Health and Science University
Portland, Oregon

Kara Ann Ventura, DNP, PNP, FNP
Director, Liver Transplant Program
Yale University School of Medicine
New Haven, Connecticut

Colleen Walsh, DNP, RN, ONC, ONP-C, CNS, ACNP-BC
Contract Assistant Professor of Nursing
College of Nursing and Health Professions
University of Southern Indiana
Evansville, Indiana

Pamela Wilkerson, MN, RN
Nurse Manager, Primary Care and Urgent Care
Department of Veterans Affairs
Veterans Administration, Puget Sound
Tacoma, Washington

Daniel P. Worrall, MSN, ANP-BC
Nurse Practitioner, Sexual Health Clinic
Nurse Practitioner, General and Gastrointestinal Surgery
Massachusetts General Hospital
Boston, Massachusetts;
Clinical Operations Manager
The Ragon Institute of MGH, MIT, and Harvard
Cambridge, Massachusetts

REVIEWERS

'Lara Alalade, RN, BN, MClSc-WH
Nursing Instructor
Faculty of Health and Community Studies
NorQuest College
Edmonton, Alberta

Jasmina Archambault, RN, BScN, MN
Nursing Instructor
Cégep Héritage
Gatineau, Quebec

Monique Bacher, RN, BScN, MSN/Ed
Semester 3 PN Coordinator and Professor, Practical Nursing Program
Sally Horsfall Eaton School of Nursing
George Brown College
Toronto, Ontario

Renee Berquist, RN, BScN, MN, PhD
Professor
School of Baccalaureate Nursing
St. Lawrence College
Brockville, Ontario

Diane Browman, RN, BScN
Nursing Instructor
Faculty of Nursing
John Abbott College
Sainte-Anne-de-Bellevue, Quebec

Lori Carre, RN, MN
Professor
School of Nursing Faculty of Applied Arts & Health Sciences
Seneca College
Toronto, Ontario

Sharon R. Cassar, RN, MSN, NP–Primary Health Care
Professor
School of Nursing Faculty of Applied Arts & Health Sciences
Seneca College
Toronto, Ontario

Annie Chevrier, N, MScA, CMSN(C)
Bachelor of Nursing (Integrated) (BNI)
Program Director, Online Education Initiatives and Continuing Nursing Education
Assistant Professor
Ingram School of Nursing
McGill University
Montreal, Quebec

Sue Coffey, RN, PhD
Associate Professor, Nursing Program
Ontario Tech University
Oshawa, Ontario

Brenda Dafoe-Enns, BA, MN, RN
Nursing Instructor, Baccalaureate Nursing Program
School of Health Sciences & Community Services
Red River College Polytech
Winnipeg, Manitoba

Laurie Doxtator, RN, BNSc, MSc
Professor, Practical Nursing
Health Sciences
St. Lawrence College
Kingston, Ontario

Donna Dunnet, LPN
Licensed Practical Nurse Instructor Certificate
School of Health Sciences / Practical Nursing
Lethbridge College
Lethbridge, Alberta

Tammy Dwyer, RN, BScN, MEd
Professor, Practical Nursing Program
Faculty of Environmental Studies and Health Science
Canadore College
North Bay, Ontario

Arnold Esguerra, RN (NP), BScN, MN
Faculty, Orientation to Nursing in Canada for Internationally Educated Nurses
School of Nursing
Saskatchewan Polytechnic – Regina Campus
Regina, Saskatchewan

Natasha Fontaine, RN, BN, PIDP
Professor
Department of Nursing
College of the Rockies
Cranbrook, British Columbia

Caroline Foster-Boucher, RN, MN
Assistant Professor
Department of Nursing Science
MacEwan University
Edmonton, Alberta

Sandra Fritz, RN, BN, MN, CCNE, CCSNE(C)
Nursing Instructor
Division of Science and Health
University of Calgary—Medicine Hat
Medicine Hat, Alberta

Monica Gola, RN, MN, CPMHN(C)
Sessional Lecturer
School of Nursing
York University
Toronto, Ontario

Renée Gordon, CD, RN, MSc, CMSN(C), CCNE, CCCI, CCSNE
Associate Teaching Professor
Faculty of Nursing
University of New Brunswick
Moncton, New Brunswick

Leslie Graham, RN, MN, PhD(c), CNCC, CHSE, CCSNE
Coordinator, RPN to BScN Nursing Program
Professor, Nursing
Durham College
Oshawa, Ontario;
Adjunct Professor
Ontario Tech University
Oshawa, Ontario

Tanya Heuver, BScN, RN, MN
Assistant Professor
Department of Nursing Science, Faculty of Nursing
MacEwan University
Edmonton, Alberta

Kerry-Anne Hogan, RN, PhD
Part-Time Professor
Faculty of Health Sciences
University of Ottawa
Ottawa, Ontario;
Registered Nurse, Emergency Department
Queensway Carleton Hospital
Ottawa, Ontario

Tania N. Killian, RN, BScN, BEd, MEd, CCN
Professor
School of Nursing Faculty of Applied Arts and Health Sciences
Seneca College
King City, Ontario;
Registered Nurse, Emergency Department
Royal Victoria Regional Health Centre
Barrie, Ontario

Natalie McMullin, RN, MN
Nursing Instructor
Faculty of Nursing
Keyano College
Fort McMurray, Alberta

Andrea Miller, RN, BScN, MA
Professor
Faculty of Nursing
McMaster-Mohawk-Conestoga Collaborative BScN Program
Conestoga College
Kitchener, Ontario

Kathryn Morrison, RN, BScN, MScN
Nursing Professor and Coordinator, Part-Time Practical Nursing and Specialty Nursing Programs
Health, Wellness and Sciences
Georgian College
Barrie, Ontario

Melanie Neumeier, RN, BScN, MN
Assistant Professor
Faculty of Nursing
MacEwan University
Edmonton, Alberta

Cindy Pallister, RN, BScN, MScN
Nursing Professor
St. Clair College
Windsor, Ontario

Trina Propp, RN, BSN
Nursing Instructor
Practical Nursing Department
Vancouver Community College
Vancouver, British Columbia

Gabriella Rispoli, RN, BEd, BScN
Nursing Faculty
Heritage College
Gatineau, Quebec

Margot Ellen Rykhoff, RN, BScN, MA(Ed)
Faculty
School of Health Sciences
University of New Brunswick/Humber College Collaborative Nursing Degree Program
Humber College
Toronto, Ontario

Ali Salman, MD, PhD, DNP, MN, RN
Professor
Faculty of Health Studies
Brandon University
Brandon, Manitoba

Heather Schoenthal, RN, BScN
Year 2 Clinical Instructor
University of Saskatchewan College of Nursing
Regina, Saskatchewan

Catherine Schwichtenber, Dip. Nursing, BScN, MSN
GNIE Instructor and Graduate Nurse
Kwantlen Polytechnic University
Surrey, British Columbia

Jennifer Siemens, RN, BSN, MSN
Nurse Educator
Department of Nursing
College of the Rockies
Cranbrook, British Columbia

Richard Snow, RN, BScN, MN
Instructor
School of Nursing
Dalhousie University
Yarmouth, Nova Scotia

Laralea Stalkie, RN, BNSc, MSN
Program Coordinator
Faculty of Nursing
St. Lawrence College/Laurentian University Collaborative
St. Lawrence College
Kingston, Ontario

Karen Ursel, RN, BN, MHSA, PhD(C)
Senior Teaching Associate
Faculty of Nursing
University of New Brunswick
Moncton, New Brunswick

Brandi Vanderspank-Wright, RN, PhD, CNCC(C)
Associate Professor
School of Nursing
Faculty of Health Sciences
University of Ottawa
Ottawa, Ontario

Ashley Veilleux, RN, BScN, MN
Professor
Bachelor of Science in Nursing Program
St. Lawrence College
Cornwall, Ontario

Yvonne Mayne Wilkin, RN, BScN, MSc, CEFP, EdD
Year 3 Nursing Faculty Coordinator
Department of Nursing
Champlain College – Lennoxville
Sherbrooke, Quebec

Jim Wohlgemuth, RN, MN, CTN-B
Instructor
Nursing Education & Health Studies
Grande Prairie Regional College
Grande Prairie, Alberta

PHARMD REVIEWER

Tom McFarlane, BScPhm, PharmD, RPh
Clinical Lecturer
School of Pharmacy
University of Waterloo
Kitchener, Ontario;
Clinical Oncology Pharmacist
Odette Cancer Centre, Sunnybrook Health Sciences,
and Baruch/Weisz Cancer Centre, North York General Hospital
Toronto, Ontario

To the Profession of Nursing and to the Important People in Our Lives

Jane
My husband Glenn, our children Kaitlyn, Kelsey, and Aiden, my grandson Benjamin, and my mother, Jessica Campney. You are my reason for everything.

Shelley
My husband Michael, our children and their partners, our grandsons Jace and Quinn, my mother Bev, and my amazing nursing colleagues at Dalhousie University's Yarmouth Campus.

Mariann
My husband Jeff, our daughters Kate and Sarah, and my parents, Mick and Mary.

Jeff
My parents, Raymond and Virginia, thank you for believing in me and providing me the opportunity to become a nurse.

Dottie
My husband Steve and my children Megan, E. J., Jessica, and Matthew, who have supported me through four college degrees and countless writing projects; and to my son-in-law Al, our grandsons Oscar and Stephen, and my new daughter-in-law, Melissa.

Debbie
My husband James, our children Matthew, Andrew, Amanda, and Diana, and our granddaughter Emma.

Courtney
To future nurses and the advancement of health care globally.

PREFACE

The Fifth Edition of *Lewis's Medical-Surgical Nursing in Canada: Assessment and Management of Clinical Problems* has been thoroughly revised for the Canadian student and incorporates the most current medical-surgical nursing information presented in an easy-to-use format. More than just a textbook, this is a comprehensive resource set in the Canadian context, containing essential information that nursing students need to prepare for lectures, classroom activities, examinations, clinical assignments, and the safe, comprehensive care of patients. In addition to the readable writing style and full-colour illustrations, the text and accompanying resources include many special features to help students learn key medical-surgical nursing content, such as sections that highlight the determinants of health, patient and caregiver teaching, age-related considerations, nursing and interprofessional management, interprofessional care, cultural considerations, nutrition, home care, evidence-informed practice, patient safety, and much more.

The comprehensive content, special features, attractive layout, and student-friendly writing style combine to make this the number one medical-surgical nursing textbook, used in more nursing schools in Canada than any other medical-surgical nursing textbook.

The latest edition of *Lewis's Medical-Surgical Nursing in Canada* retains the strengths of the first four editions, including the use of the nursing process as an organizational theme for nursing management. New features have been added to address some of the rapid changes in practice, and many diagrams and photos are new or improved. The content has been updated using the most recent important research and newest practice guidelines by Canadian contributors selected for their acknowledged excellence in specific content areas, ensuring a continuous thread of evidence-informed practice throughout the text. Specialists in the subject area have reviewed each chapter to ensure accuracy, and the editors have undertaken final rewriting and editing to achieve internal consistency. In other words, all efforts have been made to build on the recognized strengths of the previous Canadian editions.

ORGANIZATION

The content of this book is organized in two major divisions. The first division, Section 1 (Chapters 1 through 13), discusses concepts related to adult patients. The second division, Sections 2 through 12 (Chapters 14 through 72), presents nursing assessment and nursing management of medical-surgical conditions.

The various body systems are grouped in such a way as to reflect their interrelated functions. Each section is organized around two central themes: assessment and management. Each chapter that deals with the assessment of a body system includes a discussion of the following:

1. A brief review of anatomy and physiology, focusing on information that will promote understanding of nursing care
2. Health history and noninvasive physical assessment skills to expand the knowledge base on which decisions are made
3. Common diagnostic studies, expected results, and related nursing responsibilities to provide easily accessible information

Management chapters focus on the pathophysiology, clinical manifestations, laboratory and diagnostic study results in interprofessional care, and nursing management of various diseases and disorders. Nursing management sections are organized into assessment, nursing diagnoses, planning, implementation, and evaluation sections, following the steps of the nursing process. To emphasize the importance of patient care in various clinical settings, nursing implementation of all major health conditions is organized by the following levels of care:

1. Health promotion
2. Acute intervention
3. Ambulatory and home care

CLASSIC FEATURES

- **Canadian context.** Once again, we are pleased to offer the reader a book that reflects the wide range of expertise of nurses from across Canada. In an effort to better reflect the nursing environments across the country, all chapters have been revised with enhanced Canadian research and statistics. SI units and metric measurements are used throughout the text, and the updated APA format, including digital object identifiers (DOIs), is used for the references.
- **Most recent research and clinical guidelines.** Every effort has been made to use the most recent research, statistics, and clinical guidelines available. References older than 5 years at the time of writing are included because they are seminal studies or remain the most recent, authoritative source. Those references are marked "Seminal" in the References list.
- **Nursing management** is presented in a consistent and comprehensive format, with headings for Health Promotion, Acute Intervention, and Ambulatory and Home Care. In addition, over 60 customizable **Nursing Care Plans** on the Evolve website and in the text help students to understand possible nursing diagnoses, goals, and nursing interventions for each condition.
- **Interprofessional care** is highlighted in special Interprofessional Care sections in each of the management chapters and in **Interprofessional Care tables** throughout the text.
- **Patient and caregiver teaching** is an ongoing theme throughout the text. Chapter 4, *Patient and Caregiver Teaching*, and numerous **Patient & Caregiver Teaching Guides** throughout the text emphasize the increasing importance and prevalence of patient management of chronic illnesses and conditions and the role of the caregiver in patient care.
- **Culturally competent care** is covered in Chapter 2, *Cultural Competence and Health Equity in Nursing Care,* which discusses the necessity for culturally competent nursing care; culture as a determinant of health, with particular reference to Indigenous populations; health equity and health equality issues as they relate to marginalized groups in Canada; and practical suggestions for developing cultural competence in nursing care.
- **Coverage of prioritization** includes:
  - Prioritization questions in Case Studies and Review Questions
  - Nursing diagnoses and interventions throughout the text listed in order of priority

- **Focused Assessment boxes** in all assessment chapters provide brief checklists that help students do a more practical "assessment on the run" or bedside approach to assessment.
- **Safety Alerts** highlight important safety issues in relation to patient care as they arise.
- **Pathophysiology Maps** outline complex concepts related to diseases in flowchart format, making them easier to understand.
- **Community-based nursing and home care** are also emphasized in this Fifth Edition. Chapter 6 contains a comprehensive discussion, which is continued throughout the text.
- **Determinants of Health boxes** focus on the determinants of health as outlined by Health Canada and the Public Health Agency of Canada, as they affect a particular disorder. The determinants are introduced and discussed in detail in Chapter 1, and then returned to throughout the text by way of Determinants of Health boxes, which have been extensively updated and revised for the new edition. Each box identifies a health issue specific to the chapter; lists the relevant determinants affecting the issue, supported by the most recent research; and includes references for further investigation.
- **Extensive medication therapy content** includes **Medication Therapy tables** and concise **Medication Alerts** highlighting important safety considerations for key medications.
- **Chronic illness,** which has become Canada's most pressing health care challenge, is discussed in depth in Chapter 5. Nurses are increasingly called on to be active and engaged partners in assisting patients with chronic conditions to live well; this chapter places chronic illness within the larger context of Canadian society.
- **Older persons** are covered in detail in Chapter 7, and issues particularly relevant to this population are discussed throughout the text under the headings "Age-Related Considerations" and also in **Age-Related Differences in Assessment tables**.
- **Nutrition** is highlighted throughout the book, particularly in Chapter 42, *Nutritional Conditions*, and in **Nutritional Therapy tables** throughout that summarize nutritional interventions and promote healthy lifestyles for patients with various health conditions. Chapter 43, *Obesity*, looks in depth at this major factor contributing to so many other pathologies.
- **Complementary and alternative therapies** are discussed in Chapter 12, which addresses timely issues in today's health care settings related to these therapies, and in **Complementary & Alternative Therapies boxes,** where relevant, throughout the rest of the book that summarize what nurses need to know about therapies such as herbal remedies, acupuncture, and biofeedback.
- **Sleep and sleep disorders** are explored in Chapter 9; they are key topics that affect multiple disorders and body systems, as well as nearly every aspect of daily functioning.
- **Genetics in Clinical Practice boxes** build on the foundation of Chapter 15 and highlight genetic screening and testing, as well as the clinical implications of key genetic disorders that affect adults, as rapid advances in the field of genetics continue to change the way nurses practise.
- **Ethical Dilemmas boxes** promote critical thinking with regard to timely and sensitive issues that nursing students contend with in clinical practice, such as informed consent, treatment decision making, advance directives, and confidentiality.
- **Emergency Management tables** outline the emergency treatment of health conditions that are most likely to require rapid intervention.
- **Assessment Abnormalities tables** in the assessment chapters alert the nursing student to abnormalities frequently encountered in practice, as well as their possible etiologies.
- **Nursing Assessment tables** summarize important subjective and objective data related to common diseases, with a sharper focus on issues most relevant to the body system under review. This focus provides for more rapid identification of salient assessment parameters and more effective use of student time.
- **Health History tables** in assessment chapters present relevant questions related to a specific disease or disorder that will be asked in patient interviews.
- **Informatics boxes** throughout the text reflect the current use and importance of technology and touch on everything from the proper handling of social media in the context of patient privacy, to teaching patients to manage self-care using smartphone apps, to using smart infusion pumps.
- **Unfolding assessment case studies** in every assessment chapter are an engaging tool to help students apply nursing concepts in real-life patient care. Appearing in three or four parts throughout the chapter, they introduce a patient, follow that patient through subjective and objective assessment to diagnostic studies and results, and include additional discussion questions to facilitate critical thinking.
- **Student-friendly pedagogy:**
  - **Learning Objectives** at the beginning of each chapter help students identify the key content for a specific body system or disorder.
  - **Key Terms** lists provide a list of the chapter's most important terms and where they are discussed in the chapter. A comprehensive key terms **Glossary** with definitions may be found at the end of the book.
  - **Electronic resources** lists at the start of each chapter draw students' attention to the wealth of supplemental content and exercises provided on the Evolve website, making it easier than ever for them to integrate the textbook content with media supplements such as animations, video and audio clips, interactive case studies, and much more.
  - **Case Studies** bring patients to life. Management chapters have case studies at the end of the chapters that help students learn how to prioritize care and manage patients in the clinical setting. Unfolding case studies are included in each assessment chapter. Discussion questions that focus on prioritization and evidence-informed practice are included in most case studies. Answer guidelines are provided on the Evolve website.
  - **Review Questions** at the end of the chapter correspond to the Learning Objectives at the beginning and thus help reinforce the important points in the chapter. Answers are provided on the same page, making the Review Questions a convenient self-study tool.
  - **Resources** at the end of each chapter contain links to nursing and health care organizations and tools that provide patient teaching and information on diseases and disorders.

EXPANDED AND ENHANCED FEATURES

In addition to the continued classic strengths of this text, we are pleased to include several updated features:

- **Evidence-informed practice content** challenges students to develop critical thinking skills and apply the best available evidence to patient care scenarios in *Evidence-Informed Practice* boxes and questions at the end of many case studies.
- **Medication Alerts** concisely highlight important safety considerations for key medications.
- **Safety Alerts** have been expanded throughout the book to cover surveillance for high-risk situations.
- **New art** enhances the book's visual appeal and lends a more contemporary look throughout.
- Content related to the **COVID-19 pandemic** and the **SARS-CoV-2 virus** is incorporated throughout, focusing on its impacts on nurses and patients alike.
- **Revised Chapter 1: *Introduction to Medical-Surgical Nursing Practice in Canada*** situates nursing practice within the unique societal contexts that continue to shape the profession of nursing in Canada. Patient-centred care, interprofessional practice, and information-communication technologies are forces that have an impact on and are affected by nurses. This chapter includes a section on patient safety and quality improvement and expanded content on teamwork and interprofessional collaboration.

  Nursing education in Canada incorporates clinical decision-making models and guidelines that focus on critical thinking, clinical judgement, and clinical decision-making. These topics are defined along with a comparison between clinical judgement models (including the **NGN Clinical Judgement Measurement Model**) and the nursing process. As the nursing process best fits within Canadian nursing education, this Fifth Edition uses the nursing process as its guiding framework.
- **Revised Chapter 6: *Community-Based Nursing and Home Care*** includes additional content focusing on the impact of the COVID-19 pandemic and changes required in primary care settings, including home health monitoring (HHM) and the integration of virtual care.
- **Revised Chapter 11: *Substance Use*** now includes information about health care provider stigmatizing behaviours that negatively affect patient outcomes. The chapter also includes more detailed information about the impact of substance use experienced by Indigenous peoples of Canada and how health care providers can better meet the needs of this population. Expanded treatment options for opioid use disorder reflect current and innovative approaches to care now available in Canada.
- **Revised Chapter 31: *Nursing Management: Obstructive Pulmonary Diseases*** includes expanded content specific to asthma. Additional content provides a comprehensive overview of environmental and physiological triggers, diagnostic testing, and treatment options. New information includes modifications to infection-control practices and respiratory treatment protocols developed as a result of spread of the SARS-CoV-2 virus.
- **Revised Chapter 72: *Emergency Management and Disaster Planning*** has been expanded to include Canada's Strategic Emergency Management Plan and Emergency Response Plan and updated to include revisions to Canada's Emergency Management Framework and Canada's Incident Command System. Recent Canadian disasters have been included, and new information related to the COVID-19 pandemic has been incorporated. The World Health Organization's Emergency Response Plan has been added in detail, as well as the revised International Council of Nurses Framework of Disaster Nursing Competencies.

A WORD ON TERMINOLOGY

The authors and contributors of the text recognize and acknowledge the diverse histories of the First Peoples of the lands now referred to as Canada. It is recognized that individual communities identify themselves in various ways; within this text, the term *Indigenous* is used to refer to all First Nations, Inuit, and Métis people within Canada unless there are research findings that are presented uniquely to a population.

Knowledge and language concerning sex, gender, and identity are fluid and continually evolving. The language and terminology presented in this text endeavour to be inclusive of all people and reflect what is, to the best of our knowledge, current at the time of publication. Gender pronouns have been removed whenever possible, using the terms *they* and *them* as acceptable singular references to achieve gender neutrality (see https://en/oxforddictionaries.com/usage/he-or-she-versus-they). Patient profiles in Case Studies, Ethical Dilemmas boxes, and Evidence-Informed Practice: Translating Research into Practice boxes include preferred pronouns and employ initials in place of full names.

Throughout the textbook, when information is specific to the role of the RN, "Registered Nurse" or "RN" has been used; in all other instances, the term *nurse* is used to refer to an RN and/or RPN/LPN, depending on jurisdictional regulations.

"Interprofessional collaboration" is used to refer to any collaboration among health care team members and others (for example, spiritual caregivers).

"Health care provider" can include a physician, nurse practitioner, or an RN for whom the prescribing of medications or treatments is within their scope of practice.

A WORD ON LABORATORY VALUES

SI units are used for the laboratory values cited throughout the textbook. The ***Laboratory Values* appendix** lists SI units first, followed by US conventional units in parentheses in all relevant instances. It is important to note that reference ranges for laboratory values may vary among laboratories, depending on the testing techniques used. If discrepancies should exist between the body of the text and this appendix, the appendix should be considered the final authority.

LEARNING SUPPLEMENTS FOR THE STUDENT

- **Evolve Student Resources** are available online at http://evolve.elsevier.com/Canada/Lewis/medsurg and include the following valuable learning aids that are organized by chapter:
  - **NEW! PN Case Studies for Clinical Judgement**
  - **NEW! NGN-Style Case Studies**
  - Interactive **Student Case Studies** with state-of-the-art animations and a variety of learning activities that provide students with immediate feedback
  - Printable **Key Points** summaries for each chapter
  - **Review Questions**
  - **Answer guidelines** to the case studies in the textbook

- Customizable **Nursing Care Plans**
- **Conceptual Care Map Creator** and **Conceptual Care Maps** for selected case studies in the textbook
- **Managing Multiple Patients case studies for RNs** present scenarios with multiple patients requiring care simultaneously, to develop prioritization and delegation skills. Answer guidelines are also provided.
- Fluids and electrolytes **tutorial**
- **Audio glossary** of key terms, available as a comprehensive alphabetical glossary
- Supporting **animations** and **audio** for selected chapters

- More than just words on a screen, **Elsevier eBooks** come with a wealth of built-in study tools and interactive functionality to help students better connect with the course material and their instructors. Plus, with the ability to fit an entire library of books on one portable device, students can study when, where, and how they want.

TEACHING SUPPLEMENTS FOR INSTRUCTORS

- **Evolve Instructor Resources** (available online at http://evolve.elsevier.com/Canada/Lewis/medsurg) remain the most comprehensive set of instructors' materials available, containing the following:
  - ***TEACH for Nurses Lesson Plans*** focus on the most important content from each chapter and provide innovative strategies for student engagement and learning. These new lesson plans provide teaching strategies that integrate textbook content with activities for pre-class, in-class, online, group, clinical judgement, and interprofessional collaboration, all correlated with RN-NGN Clinical Judgement Model and PN Clinical Judgement Skills competencies.
  - Two test banks are provided: **Test Bank for RN** and **Test Bank for PN.** Each features examination-format test questions coded for nursing process and cognitive level. The Test Bank for PN is updated to reflect new 2019 PN national competencies, including those for Ontario and British Columbia. The robust ExamView® testing application, provided at no cost to faculty, allows instructors to create new tests; edit, add, and delete test questions; sort questions by category, cognitive level, and nursing process step; and administer and grade tests online, with automated scoring and gradebook functionality.
    - The **Image Collection** contains full-colour images from the text for use in lectures.
    - **PowerPoint® Lecture Slides** consist of customizable text slides for instructors to use in lectures.
- **NEW! Next-Generation NCLEX™ (NGN)**-style case studies for medical-surgical nursing
- **NEW! Concept-Based Curriculum Map**
- **Animations**

Simulation Learning System (SLS)

The Simulation Learning System (SLS) is an online toolkit that helps instructors and facilitators effectively incorporate medium- to high-fidelity simulation into their nursing curriculum. Detailed patient scenarios promote and enhance the clinical decision-making skills of students at all levels. The SLS provides detailed instructions for preparation and implementation of the simulation experience, debriefing questions that encourage critical thinking, and learning resources to reinforce student comprehension. Each scenario in the SLS complements the textbook content and helps bridge the gap between lecture and clinical experience. The SLS provides the perfect environment for students to practise what they are learning in the text for a true-to-life, hands-on learning experience.

Sherpath

Sherpath Book-Organized collections offer digital lessons, mapped chapter-by-chapter to the textbook, so the reader can conveniently find applicable digital assignment content. Sherpath features convenient teaching materials that are aligned with the textbook, and the lessons are organized by chapter for quick and easy access to invaluable class activities and resources.

Elsevier eBooks

This exciting program is available to faculty who adopt a number of Elsevier texts, including *Lewis's Medical-Surgical Nursing in Canada*. Elsevier eBooks is an integrated electronic study centre consisting of a collection of textbooks made available online. It is carefully designed to "extend" the textbook for an easier and more efficient teaching and learning experience. It includes study aids such as highlighting, e-note taking, and cut-and-paste capabilities. Even more importantly, it allows students and instructors to do a comprehensive search within the specific text or across a number of titles. Please check with your Elsevier Canada sales representative for more information.

Next Generation NCLEX™ (NGN)

The National Council for the State Boards of Nursing (NCSBN) is a not-for-profit organization whose members include nursing regulatory bodies. In empowering and supporting nursing regulators in their mandate to protect the public, the NCSBN is involved in the development of nursing licensure examinations, such as the NCLEX-RN®. In Canada, the NCLEX-RN® was introduced in 2015 and is, as of the writing of this text, the recognized licensure exam required for practising RNs in Canada.

As of 2023, the NCLEX-RN® will be changing to ensure that its item types adequately measure clinical judgement, critical thinking, and problem-solving skills on a consistent basis. The NCSBN will also be incorporating into the examination what they call the Clinical Judgement Measurement Model (CJMM), which is a framework the NCSBN has created to measure a novice nurse's ability to apply clinical judgement in practice.

These changes to the examination come as a result of findings indicating that novice nurses have a much higher than desirable error rate with patients (errors causing patient harm) and, upon NCSBN's investigation, that the overwhelming majority of these errors were caused by failures of clinical judgement.

Clinical judgement has been a foundation underlying nursing education for decades, based on the work of a number of nursing theorists. The theory of clinical judgement that most closely aligns with what NCSBN is basing their CJMM on is the work by Christine A. Tanner.

The new version of the NCLEX-RN® is identified loosely as the "Next-Generation NCLEX," or "NGN," and will feature the following:

- Six key skills in the CJMM: recognizing cues, analyzing cues, prioritizing hypotheses, generating solutions, taking actions, and evaluating outcomes.

- Approved item types as of March 2021: multiple response, extended drag and drop, cloze (drop-down), enhanced hotspot (highlighting), matrix/grid, bow tie, and trend. More question types may be added.
- All new item types are accompanied by mini–case studies with comprehensive patient information—some of it relevant to the question, and some of it not.
- Case information may present a single, unchanging moment in time (a "single episode" case study) or multiple moments in time as a patient's condition changes (an "unfolding" case study).
- Single-episode case studies may be accompanied by one to six questions; unfolding case studies are accompanied by six questions.

For more information (and detail) regarding the NCLEX-RN® and changes coming to the exam, visit the NCSBN's website: https://www.ncsbn.org/11447.htm and https://ncsbn.org/Building_a_Method_for_Writing_Clinical_Judgment_It.pdf.

For further NCLEX-RN® examination preparation resources, see *Elsevier's Canadian Comprehensive Review for the NCLEX-RN Examination*, Second Edition, ISBN 9780323709385.

Prior to preparing for any nursing licensure examination, please refer to your provincial or territorial nursing regulatory body to determine which licensure examination is required in order for you to practise in your chosen jurisdiction.

ACKNOWLEDGEMENTS

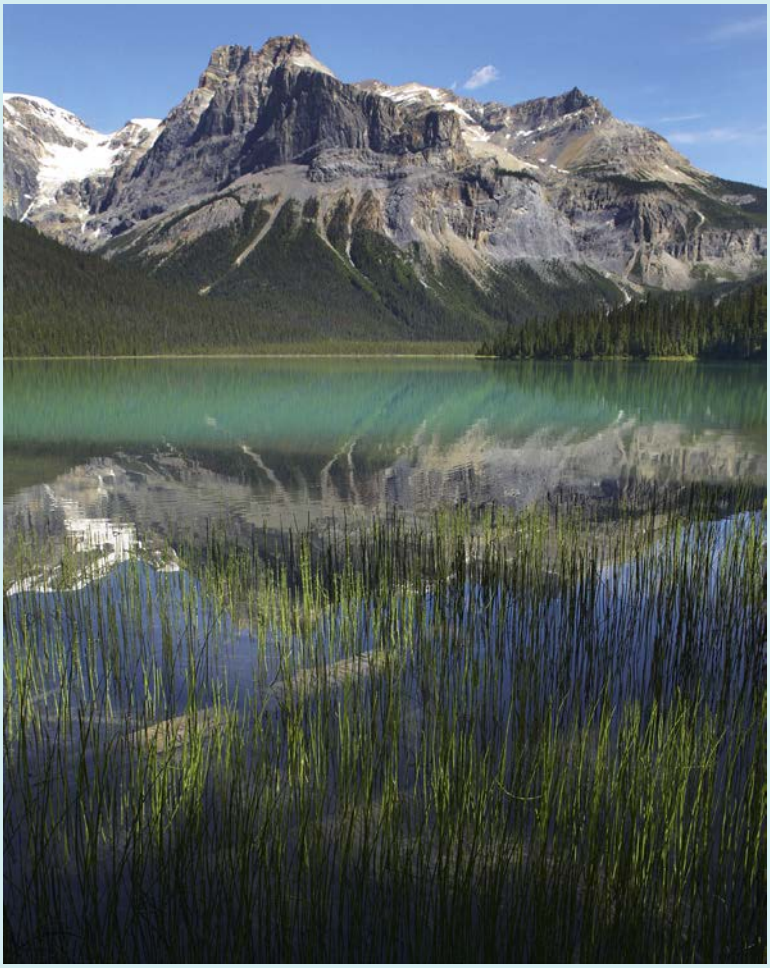
The editors are grateful to the entire editorial team at Elsevier for their leadership and dedication in the preparation of this very comprehensive, but much needed, Canadian medical-surgical textbook. In particular, we wish to thank Roberta A. Spinosa-Millman, Senior Content Strategist, for her invaluable assistance, and Tammy Scherer and Suzanne Simpson, Content Development Specialists, for their professionalism, sense of humour, patience, and graciousness despite pressing deadlines. We would also like to thank Sarah Ibrahim for her help with the Laboratory Values appendix.

We would like to recognize the commitment and expertise of all the authors, representing diverse areas of practice and regions of Canada. It has been a genuine pleasure to work with both the first-time and returning authors on this project. We are also very grateful to the many reviewers for their valuable feedback on earlier versions of this textbook. It takes a large and coordinated team to create a textbook such as this, and we thank everyone for their individual contributions. We are proud to be able to provide a medical-surgical nursing textbook written from a Canadian perspective that provides current and accurate information to enrich the learning of our nursing students.

This page intentionally left blank

SECTION 1

Concepts in Nursing Practice



Source: © CanStock Photo / ABBPhoto

CHAPTER

1

Introduction to Medical-Surgical Nursing Practice in Canada

Jane Tyerman
Originating US chapter by Mariann M. Harding

evolve WEBSITE

http://evolve.elsevier.com/Canada/Lewis/medsurg

- Review Questions (Online Only)
- Key Points
- Conceptual Care Map Creator
- Audio Glossary
- Content Updates

LEARNING OBJECTIVES

1. Describe key challenges facing the current Canadian health care system.
2. Describe the practice of professional nursing in relation to the health care team.
3. Describe the key attributes of the practice of medical-surgical nursing.
4. Explain how teamwork and interprofessional collaboration contribute to high-quality patient outcomes.
5. Discuss the role of integrating patient-centred care and safety and quality improvement processes into nursing practice.
6. Evaluate the role of informatics and technology in nursing practice.
7. Apply concepts of evidence-informed practice to nursing practice.
8. Describe the role of critical thinking and clinical reasoning skills and use of the nursing process to provide patient-centred care.

KEY TERMS

advanced practice nursing (APN)
assessment
clinical (critical) pathway
collaborative problems
continuing competence
critical thinking
determinants of health
electronic health records (EHRs)
evaluation
evidence-informed nursing
expected patient outcomes
implementation
medical-surgical nursing
nursing diagnosis
nursing informatics
nursing intervention
nursing leadership
nursing process
patient-centred approach
patient safety
planning
regulated health care professions
SBAR (situation, background, assessment, and recommendation)
standard of practice
telehomecare
unregulated care providers (UCPs)

THE CANADIAN HEALTH CARE CONTEXT

Health care is a subject of keen interest to the public. In Canada, everyone has access to health care through a government-funded universal program, the costs of which are shared by the federal and the provincial/territorial governments. A multiyear health accord with a long-term funding agreement between the federal and provincial/territorial governments determines the way that health care is delivered in Canada. In addition, the level of health care funding from the federal government to the provinces and territories depends on the economic health of the country.

The *Canada Health Act* health care policy was established to promote, restore, and maintain the physical and mental health of all Canadians through equal access to health services (Government of Canada, 2020). These include most services provided in hospitals and by family health care providers. Because health services have evolved inconsistently across provinces, territories, and regions, however, Canada has a complex health care system. The Canadian health care system continues to struggle with major challenges, including concerns about patient safety, service delivery, fiscal constraints, age-related demographics, the emergence of new infectious diseases such as COVID-19, the prevalence of chronic diseases, and the high cost of new technology and medications. In response, during 2019–2020, Health Canada prioritized the following health initiatives (Health Canada, 2019):

1. Expand resources to address the national opioid crisis and create harm reduction strategies, such as supervised consumption sites and overdose prevention programs
2. Promote smoking cessation (tobacco and vaping) through product regulations that protect youth
3. Improve access to, the affordability of, and appropriate use of prescription medications to all Canadians
4. Increase access to home, community care, and mental health services

TABLE 1.1 PRINCIPLES TO GUIDE HEALTH CARE TRANSFORMATION IN CANADA

- *Patient-centred:* Patients must be at the centre of health care, with seamless access to the continuum of care on the basis of their needs.
- *Quality:* Canadians deserve quality services that are appropriate for patient needs, are respectful of individual choice, and are delivered in a manner that is timely, safe, effective, and according to the most currently available scientific knowledge.
- *Health promotion and illness prevention:* The health system must support Canadians in the prevention of illness and the enhancement of their well-being, with attention paid to broader social determinants of health.
- *Equitable:* The health care system has a duty to Canadians to provide and advocate for equitable access to quality care and commonly adopted policies to address the social determinants of health.
- *Sustainable:* Sustainable health care requires universal access to quality health services that are adequately resourced and delivered across the board in a timely and cost-effective manner.
- *Accountable:* The public, patients, families, providers, and funders all have a responsibility for ensuring that the system is effective and accountable.

Source: Canadian Nurses Association & Canadian Medical Association. (July, 2011). *Principles to guide health care transformation in Canada.* https://www.cna-aiic.ca/~/media/cna/files/en/guiding_principles_hc_e.pdf

5. Implement a multiyear Healthy Eating Strategy that builds on the revised *Canada's Food Guide* (Government of Canada, 2021)
6. Support the implementation of Indigenous Services Canada (ISC) programs available to Indigenous peoples

Together with the Canadian Medical Association (CMA), the Canadian Nurses Association (CNA) has defined a set of key principles designed to guide health care transformation in Canada. These principles, listed in Table 1.1, are important considerations for all nurses because they will shape the re-engineered health care system of the future.

Complex Health Care Environments

Nurses practice in virtually all health care settings and communities across the country. They are the frontline providers of health care (Figure 1.1). Rapidly changing technology and dramatically expanding knowledge are adding to the complexity of health care environments. Patient acuity is now more complicated because of polypharmacy, chronic health care conditions, and multiple comorbidities, which have paved the way for more research and robust technology to address these needs. Additional health care providers are required to work collaboratively to help restore, maintain, and promote health for all populations with complex health needs. Advanced communication technologies have created a more global environment that affects the delivery of health care worldwide. The number and complexity of advances in patient care technology are transforming how care is delivered. In addition, the Human Genome Project and advances in genetics are affecting the prevention, diagnosis, and treatment of health conditions. With advances in knowledge, ethical dilemmas and controversy arise with regard to the use of new scientific knowledge and the disparities that exist in patients' access to more technologically advanced health care. Throughout this book, expanding knowledge and technology's effects on nursing practice are highlighted in Genetics in Clinical Practice, Informatics in Practice, and Ethical Dilemmas boxes.

FIG. 1.1 Nurses are frontline professionals of health care. Source: iStock.com/monkeybusinessimages.

ETHICAL DILEMMAS

Social Networking: Confidentiality and Privacy Violation

Situation

A nursing student logs into a closed group on a social networking site and reads a posting from a fellow nursing student. The posting describes in detail the complex care that the fellow student provided to an older patient in a local hospital the previous day. The fellow student comments on how stressful the day was and asks for advice on how to deal with similar patients in the future.

Ethical/Legal Points for Consideration

- Protecting and maintaining patient privacy and confidentiality are basic obligations defined in the *Code of Ethics* (CNA, 2017), which nurses and nursing students should uphold.
- Each province and territory has their own legislation to protect a patient's private health information. Some examples include the *Personal Information Protection Act* (PIPA) in British Columbia and the *Access to Information and Protection of Privacy Act* (ATIPPA) in Newfoundland and Labrador. Private health information is any information about the patient's past, present, or future physical or mental health. This includes not only specific details, such as a patient's name or picture, but also information that gives enough details that someone else may be able to identify that patient.
- A nurse may unintentionally breach privacy or confidentiality by posting patient information (diagnosis, condition, or situation) on a social networking site. Using privacy settings or being in a closed group does not guarantee the secrecy of posted information. Other users can copy and share any post without the poster's knowledge.
- Potential consequences for improperly using social networking vary according to the situation. These may include dismissal from a nursing program, termination of employment, or civil and criminal actions.

Discussion Questions

- How would you address the situation involving a fellow nursing student?
- How would you handle a situation in which you observed a staff member violating the provincial/territorial legislation related to a patient's private health information?

Diverse Populations. Patient demographics are more diverse than ever. Canadians are living longer, in part because of advances in medical science, technology, and health care delivery. As the population ages, the number of patients with chronic conditions increases. Unlike those who receive acute, episodic care, patients with chronic conditions have many needs and see a variety of health care providers in various settings over an

TABLE 1.2 PUBLIC HEALTH AGENCY OF CANADA: KEY DETERMINANTS OF HEALTH

Determinant of Health	Underlying Premise
Income and social status	Health status improves at each step up the income and social hierarchy. High income determines living conditions such as safe housing and ability to buy sufficient good food. The healthiest populations are those societies that are prosperous and have an equitable distribution of wealth.
Social support networks	Support from families, friends, and communities is associated with better health. Such social support networks could be very important in helping people solve problems and deal with adversity, as well as in maintaining a sense of mastery and control over life circumstances. The caring and respect that occur in social relationships, and the resulting sense of satisfaction and well-being, seem to act as a buffer against health problems.
Education and literacy	Health status improves with level of education, which is, in turn, tied to socioeconomic status. Education contributes to health and prosperity by equipping people with knowledge and skills for problem solving and helps provide a sense of control and mastery over life circumstances. It increases opportunities for job and income security and job satisfaction. Education also improves people's ability to access and understand information to help keep them healthy.
Employment/working conditions	Unemployment, underemployment, and stressful or unsafe work are associated with poorer health. People who have more control over their work circumstances and fewer stress-related demands of the job are healthier and often live longer than those who have more stressful or riskier types of work and activities.
Social environments	The array of values and norms of a society influences in varying ways the health and well-being of individuals and populations. In addition, social stability, recognition of diversity, safety, good working relationships, and cohesive communities provide a supportive society that reduces or avoids many potential risks to good health. Social or community responses can add resources to an individual's repertoire of strategies to cope with changes and foster health.
Physical environments	The physical environment is an important determinant of health. At certain levels of exposure, contaminants in our air, water, food, and soil can cause a variety of adverse health effects, including cancer, birth defects, respiratory illness, and gastrointestinal ailments. In the built environment, factors related to housing, indoor air quality, and the design of communities and transportation systems can significantly influence physical and psychological well-being.
Personal health practices and coping skills	These refer to those actions by which individuals can prevent diseases and promote self-care, cope with challenges, develop self-reliance, solve problems, and make choices that enhance health. These influence lifestyle choice through at least five domains: personal life skills, stress, culture, social relationships and belonging, and a sense of control.
Healthy child development	Early childhood development is a powerful determinant of health. Early experiences affect brain development and school readiness, which can be affected by the physical environment (housing and neighbourhood), family income, parental education, access to nutritious food, genetics, and access to health care. All of the other determinants of health, in turn, affect the physical, social, mental, emotional, and spiritual development of children and youth.
Biology and genetic endowment	The basic biology and organic makeup of the human body are a fundamental determinant of health. Genetic endowment provides an inherited predisposition to a wide range of individual responses that affect health status. Socioeconomic and environmental factors are important determinants of overall health, but in some circumstances, genetic endowment appears to predispose certain individuals to particular diseases or health problems.
Health services	Health services, particularly those designed to maintain and promote health, to prevent disease, and to restore health and function, contribute to the health of the overall population. The health services continuum of care includes treatment and secondary prevention.
Gender	*Gender* refers to the array of society-determined roles, personality traits, attitudes, behaviours, values, and relative power and influence that society ascribes to the two sexes on a differential basis. Gendered norms influence the health system's practices and priorities. Many health issues are a function of gender-based social status or roles.
Culture	Some persons or groups may face additional health risks due to a socioeconomic environment, which is largely determined by dominant cultural values that contribute to the perpetuation of conditions such as marginalization, stigmatization, loss or devaluation of language and culture, and lack of access to culturally appropriate health care and services.

© All rights reserved. *What makes Canadians healthy or unhealthy?* Public Health Agency of Canada, 2013. Adapted and reproduced with permission from the Minister of Health, 2021.

extended period. Nurses are also caring for a more culturally and ethnically diverse population and must provide culturally safe care (see Chapter 2). Immigrants, particularly undocumented immigrants and refugees, often lack the resources necessary to access health care. Inability to pay for health care is associated with a tendency to delay seeking care; thus, illnesses may become more serious.

Determinants of Health. The **determinants of health** are the factors that influence the health of individuals and groups. Table 1.2 displays the determinants of health recognized by the Public Health Agency of Canada (PHAC, 2020). The primary factors that shape the health of Canadians are not medical treatments or lifestyle choices but rather the living conditions (the economic, social, and political) that they experience (Alberga et al., 2018; Hancock, 2017). The 12 determinants of health include income and social status, employment and working conditions, education and literacy, childhood experiences, physical environments, social supports and coping skills, healthy behaviours, access to health services, biology and genetic endowment, gender, culture, and race and racism (PHAC, 2020). These determinants of health include biological components and social components. The social components can be further evaluated based on economic, social, and political structures. The determinants of health are used to evaluate components of health for an individual, community, subpopulation, or nation or on a global scale. They help identify many factors that contribute to one's health beyond the biological, innate advantages and disadvantages. These determinants can either improve a person's health status or heighten an individual's risk for disease, injury, and illness. As these factors or determinants intersect with each other, the overall effect can be one of multiple exclusions beyond individual control, leading to compounded adverse effects on health and well-being.

Patient-Centred Care

Nurses have long demonstrated that they deliver patient-centred care based on each patient's unique needs and an understanding of the patient's preferences, values, and beliefs.

TABLE 1.3 QUALITY AND SAFETY EDUCATION FOR NURSES (QSEN) COMPETENCIES

Competency	Knowledge, Skills, and Attitudes
Patient-Centred Care Recognize the patient or designee as the source of control and a full partner in providing compassionate and coordinated care that is based on respect for patient's preferences, values, and needs.	• Provide care with sensitivity and respect, taking into consideration the patient's perspectives, beliefs, and cultural background. • Assess the patient's level of comfort, and treat appropriately. • Engage the patient in an active partnership that promotes health, well-being, and self-care management. • Facilitate patient's informed consent for care.
Teamwork and Collaboration Function effectively within nursing and interprofessional teams, fostering open communication, mutual respect, and shared decision making to achieve quality patient care.	• Value the expertise of each interprofessional member. • Initiate referrals when appropriate. • Follow communication practices that minimize risks associated with handoffs and transitions in care. • Participate in interprofessional rounds.
Safety Minimize risk of harm to patients and providers through both system effectiveness and individual performance.	• Follow recommendations from national safety campaigns. • Appropriately communicate observations or concerns related to hazards and errors. • Contribute to designing systems to improve safety.
Quality Improvement Use data to monitor the outcomes of care and use improvement methods to design and test changes to continuously improve the quality and safety of health care systems.	• Use quality measures to understand performance. • Identify gaps between local and best practices. • Participate in investigating the circumstances surrounding a sentinel event or serious reportable event.
Informatics Use information and technology to communicate, manage knowledge, mitigate error, and support decision making.	• Protect confidentiality of patient's protected health information. • Document appropriately in electronic health records. • Use communication technologies to coordinate patient care. • Respond correctly to clinical decision-making alerts.
Evidence-Based or Evidence-Informed Practice Integrate best current evidence with clinical expertise and the patient/family preferences and values for delivery of optimal health care.	• Read research, clinical practice guidelines, and evidence reports related to area of practice. • Base individual patient care plan on patient's values, clinical expertise, and evidence. • Continuously improve clinical practice on the basis of new knowledge.

Source: Reprinted from *Nursing Outlook, 55*(3), Linda Cronenwett, Gwen Sherwood, Jane Barnsteiner, Joanne Disch, Jean Johnson, Pamela Mitchell, Dori Taylor Sullivan, Judith Warren, "Quality and safety education for nurses," pages 122–131, Copyright 2007, with permission from Elsevier.

Patient-centred care is interrelated with both quality and safety. A **patient-centred approach** focuses on respectful and responsive care to patient preferences, needs, and values, ensuring they are involved in care decisions (Montague et al., 2017). In Canada, numerous provincial initiatives are underway to improve the person's and their family's experience. Many initiatives are partnering with individual users to ensure that the patient (and the patient's family) is the focus of system reform (Registered Nurses' Association of Ontario [RNAO], 2015).

Patient Safety and Quality Improvement. **Patient safety** is defined as the absence of preventable harm to a patient while receiving health care and the unnecessary harm associated with health care (World Health Organization [WHO], 2019). Entry-to-practice nursing competencies recognize the importance of the nurse's ability to assess and manage situations that may compromise patient safety (College of Nurses of Ontario [CNO], 2019). Although patients turn to the health care system for help with their health conditions, there is overwhelming evidence that significant numbers of patients are harmed as a result of the health care they receive, resulting in permanent injury, increased lengths of hospital stay, and even death (WHO, 2019).

There are approximately 190 000 patient safety incidences in Canada, resulting in 24 000 preventable deaths yearly, indicating that harmful incidents are a significant issue in Canadian hospitals (Canadian Patient Safety Institute [CPSI], 2017). The Canadian Patient Safety Institute (CPSI) and other organizations address patient safety by providing safety goals for health care organizations and identifying safety competencies for health care providers. Tools and programs in four priority areas—medication safety, surgical care safety, infection prevention and control, and home care safety—are available from the CPSI (2021).

By implementing various procedures and systems to improve health care delivery to meet safety goals, designers of health care systems are working to attain a culture of safety that minimizes the risk of harm to the patient. Because nurses have the greatest amount of interaction with patients, they are a vital part of promoting this culture of safety by providing care that reduces errors and actively promotes patient safety.

Quality and Safety Education for Nurses. The Quality and Safety Education for Nurses (QSEN) Institute has made a major contribution to nursing by defining specific competencies that nurses need to have to practise safely and effectively in today's complex health care system. Table 1.3 describes each of the QSEN competencies and the knowledge, skills, and attitudes (KSAs) necessary in six key areas: (1) patient-centred care, (2) teamwork and collaboration, (3) quality improvement, (4) safety, (5) informatics and technology, and (6) evidence-informed practice (QSEN, 2014). The rest of this chapter describes how

professional nursing practice focuses on acquiring the knowledge, skills, and attitudes for these competencies.

The Profession of Nursing in Canada

Health care in Canada is typically delivered by teams of workers with different responsibilities and scopes of practice. **Regulated health care professions** are governed by a legislative framework and are required to obtain an annual licence to practise in their respective province or territory (Canadian Institute for Health Information [CIHI], 2020). There are four regulated nursing groups: registered nurses (RNs), nurse practitioners, registered psychiatric nurses, and licensed practical nurses/registered practical nurses (LPN/RPNs). In contrast, **unregulated care providers (UCPs)** or unregulated health workers are paid employees who are not licensed or registered by a regulatory body, who have no legally defined scope of practice, for whom education or practice standards may or may not be mandatory, who provide care under the direct or indirect supervision of a nurse, and who are accountable for their own actions and decisions (CNA, 2015, p. 28). Some of the more common titles for UCPs include "health care aides," "personal support workers," "assistive personnel," "care team assistants," and "nursing aides."

Within Canada, nurses are granted the legal authority to use the designation "registered nurse" (RN) in accordance with provincial and territorial legislation and regulation. The provincial regulatory bodies set the standards for practice for RNs to protect the public in their province or territory (CNA, 2015). RN practice is defined by the CNA (2015) in the following way:

> *RNs are self-regulated health-care professionals who work autonomously and in collaboration with others to enable individuals, families, groups, communities and populations to achieve their optimal levels of health. At all stages of life, in situations of health, illness, injury and disability, RNs deliver direct health-care services, coordinate care and support clients in managing their own health. RNs contribute to the health-care system through their leadership . . . in practice, education, administration, research and policy. (p. 5)*

Because RNs work with other regulated providers, as well as with UCPs, they must be aware of both their own and other providers' scopes of practice. This is essential for safely enacting key nursing roles, such as delegation and prioritization and meeting the standards of practice.

Standards of Practice. A **standard of practice** and its guidelines describe nurses' accountabilities to support the safe and ethical provision of care (CNO, 2019). Standards are intended to promote, guide, direct, and regulate professional nursing practice. Standards of practice demonstrate to the public, government, and other stakeholders that a profession is dedicated to maintaining public trust and upholding its professional practice criteria. Standards of practice are based on the values of the profession and articulated in the *Code of Ethics for Registered Nurses* (CNA, 2017). Provincial and territorial regulatory bodies for nursing are legally required to set standards for practice for RNs to protect the public. These standards, together with the *Code of Ethics*, form the foundation for nursing practice in Canada.

Because of the rapid changes in resources, expectations, and technologies that characterize health care in Canada, nursing practice requires a commitment to lifelong learning to promote the highest quality of patient outcomes. **Continuing competence** refers to "the ongoing ability of a nurse to integrate and apply the knowledge, skills, judgement and personal attributes required to practice safely and ethically in a designated role and setting" (CNA/Canadian Association of Schools of Nursing [CASN], 2004).

FIG. 1.2 Advanced nursing practice (ANP) plays an important role in primary care delivery. Source: iStock.com/AnnaStills.

RNs are initially prepared at the baccalaureate level (except in Quebec) and can pursue further studies at the graduate level. In the province of Quebec, RNs can also be diploma-prepared by receiving nursing education at a college or CEGEP. This diploma is recognized as eligibility to apply for registration with the provincial nursing body if all requirements have been met. Many nurses also seek recognition of their clinical expertise through certification in one of the 20 specialty areas of practice through the CNA (2021). Medical-surgical nursing is one of the newer specialties to be recognized through the certification program.

Advanced Practice Nursing. As Canada's health care system changes, **advanced practice nursing (APN)** roles are also evolving to optimize patient care within the system. According to the Advanced Practice Nursing Pan-Canadian Framework, advanced practice nursing "integrates graduate nursing education preparation with in-depth, specialized clinical nursing knowledge and expertise in complex decision-making to meet the health needs of individuals, families, groups, communities and populations" (CNA, 2019, p. 13). APN roles focus on health assessment, diagnosis, and treatment of conditions previously considered to be the physician's domain (Figure 1.2). It involves analyzing and synthesizing knowledge; critiquing, interpreting and applying nursing theory; participating in and leading research; using advanced clinical competencies; and developing and accelerating nursing knowledge and the profession as a whole (CNA, 2019, p. 13). Examples of roles within APN in Canada include those of the clinical nurse specialist and the nurse practitioner.

In addition to managing and delivering direct patient care, APN nurses have significant roles in health promotion, case management, administration, and research. There is substantial variation among the provinces and territories in the framework for and specific roles of nurses working in APN. Practice settings in which an APN nurse may be employed include primary and tertiary care, such as ambulatory care, long-term care, hospital care, and community care. In the APN role, the nurse's focus may be, for example, the management of primary care and health promotion for a wide variety of health issues in various specialties; activities include physical examination, diagnosis, treatment of health conditions, patient and family education, and counselling. In the management of complex patient care in various clinical specialty areas, the roles of APN may include direct care, consultation, research, education, case management, and administration.

TABLE 1.4 INTERPROFESSIONAL TEAM MEMBERS

Team Member	Description of Services Provided
Dietitian	Provides general nutrition services, including dietary consultation about health promotion or specialized diets
Occupational therapist (OT)	May help patient with fine motor coordination, performing activities of daily living, cognitive-perceptual skills, sensory testing, and the construction or use of assistive or adaptive equipment
Pastoral care	Offers interdenominational spiritual support and guidance to patients and caregivers
Pharmacist	Prepares medications and infusion products
Physiotherapist (PT)	Works with patients on improving strength and endurance, gait training, transfer training, and developing a patient education program
Physician (medical doctor [MD])	Practises medicine and treats illness and injury by prescribing medication, performing diagnostic tests and evaluations, performing surgery, and providing other medical services and advice
Nurse practitioner	Diagnoses illness, orders and interprets diagnostic tests, prescribes medications and treatments, and performs specific procedures within their scope of practice
Physician assistant	Conducts physical exams, diagnoses and treats illnesses, and counsels on preventive health care in collaboration with a physician
Respiratory therapist	May provide oxygen therapy in the home, give specialized respiratory treatments, and teach the patient or caregiver about the proper use of respiratory equipment
Social worker	Assists patients with developing coping skills, meeting caregiver concerns, securing adequate financial resources or housing, or making referrals to social service or volunteer agencies
Speech pathologist	Focuses on treatment of speech defects and disorders, especially by using physical exercises to strengthen muscles used in speech, speech drills, and audiovisual aids that develop new speech habits

What Is Medical-Surgical Nursing? **Medical-surgical nursing** is a challenging and dynamic type of nursing that involves caring for adults experiencing complex variations in health (Canadian Association of Medical and Surgical Nurses [CAMSN], 2020). Because the scope of medical-surgical nursing is very broad, the nurse practising in this area is expected to acquire and maintain a great deal of knowledge and skill. This book provides the beginning nurse with much of the knowledge necessary to become a safe and competent practitioner.

The medical-surgical nurse is considered a leader and a key member of the interdisciplinary team. The medical-surgical nurse's primary responsibilities include prioritization, accountability, advocacy, organization, and coordination of evidence-informed care for multiple patients. Medical-surgical patients and their caregivers come from diverse backgrounds and often possess multiple, complex illnesses; medical-surgical nurses, therefore, must be knowledgeable and well prepared. Because of the rapidly changing and complex health concerns that may affect multiple body systems of medical-surgical patients, safe and effective use of technology is an increasingly important competency required by these nurses. The effective medical-surgical nurse demonstrates adaptability and a strong commitment to ensuring the best possible patient outcomes.

Medical-surgical nurses practise in diverse environments, ranging from outpatient and primary care environments through the continuum of care to tertiary care hospitals (CNA, 2015). As the largest group of nursing professionals in Canada (CAMSN, 2020), they utilize a broad range of evidence-informed knowledge and clinical skills to address acutely ill adults' and their families' needs. The Canadian Association of Medical and Surgical Nurses (CAMSN) is a national organization that promotes excellence through best-practice standards to provide high-quality, safe, and ethical care to patients across the continuum of care. RNs may choose to seek recognition of their expertise in this specialty through post-licensure certification offered by the CNA.

Teamwork and Interprofessional Collaboration

Interprofessional Teams. To deliver high-quality care, nurses need to have effective working relationships with the health care team members. Supporting patients to achieve optimal health, nurses collaborate with a wide range of professionals, including pharmacists, physicians, occupational therapists, physiotherapists, and social workers (Table 1.4).

Successful collaboration with other health care providers has become a cornerstone of nursing practice. To be competent in interprofessional practice, nurses must collaborate in many ways by exchanging knowledge, sharing responsibility for problem-solving, and making patient care decisions. Nurses are often responsible for coordinating care among the team members, taking part in interprofessional team meetings or rounds, and making referrals when expertise is needed in specialized areas to help the patient. To do so, nurses must be aware of other team members' knowledge and skills and be able to communicate effectively with them.

In the position statement *Interprofessional Collaboration,* the CNA (2012) recognized the growing importance of interprofessional collaboration in improving patient-centred access to health care in Canada. The Registered Nurses' Association of Ontario (RNAO, 2013) described a conceptual model for developing and sustaining interprofessional health care whereby outstanding interprofessional care is a result of health care teams demonstrating expertise in six key domains: care expertise; shared power; collaborative leadership; optimizing profession, role, and scope; shared decision making; and effective group functioning (RNAO, 2013).

Nurses function in independent, dependent, and collaborative roles. Each province and territory has a *Nurses' Act* that determines the scope of practice for that region. These acts allow nurses to take on delegated medical responsibilities and have a wider scope of practice when working as nurse practitioners.

Communication Among Health Care Team Members. Effective communication is a key component of fostering teamwork and coordinating care. To provide safe, effective care, everyone involved in a patient's care should understand the patient's condition and needs. Unfortunately, many issues result from a breakdown in communication. Miscommunication often occurs during transitions of care. One structured model used to improve communication is the **SBAR (situation, background, assessment, and recommendation)** technique (Table 1.5). This technique provides a way for the health care team members to talk about a patient's condition in a predictable, structured manner. Other ways to enhance communication during transitions include

TABLE 1.5 GUIDELINES FOR COMMUNICATION USING SBAR

Purpose: SBAR is a model for effective transfer of information by providing a standard structure for concise factual communications from nurse to nurse, nurse to physician, or nurse to other health professionals.

Steps to Use: Before speaking with a health care provider about a patient issue, assess the patient yourself, read the most recent physician progress and nursing notes, and have the patient's chart available.

Situation	• What is the situation you want to discuss? What is happening right now? • Identify self, unit. State: I am calling about: patient, room number. • Briefly state the challenge: what it is, when it happened or started, and how severe it is. State: I have just assessed the patient and am concerned about: • *Describe why you are concerned.*

Background	• What is the background or what are the circumstances leading up to the situation? State pertinent background information related to the situation that may include:
	  • Admitting diagnosis and date of admission
	  • List of current medications, allergies, intravenous (IV) fluids
	  • Most recent vital signs
	  • Date and time of any laboratory testing and results of previous tests for comparison
	  • Synopsis of treatment to date
	  • Code status

Assessment	• What do you think the issue is? What is your assessment of the situation? State what you think the issue is:
	  • Changes from prior assessments
	  • Patient condition unstable or worsening

Recommendation/**R**equest	• What should we do to correct the problem? What is your recommendation or request? State your request.
	  • Specific treatments
	  • Tests needed
	  • Patient needs to be seen now

Source: Adapted from *SBAR Tool: Situation-Background-Assessment-Recommendation*, developed by Kaiser Permanente, sourced from www.IHI.org with permission of the Institute for Healthcare Improvement, ©2021.

TABLE 1.6 RIGHTS OF DELEGATION

The Five Rights of Delegation

The registered nurse uses critical thinking and professional judgement to be sure that the delegation or assignment is:

1. The right task
2. Under the right circumstances
3. To the right person
4. With the right directions and communication
5. Under the right supervision and evaluation

Rights of Delegation	Description	Questions to Ask
Right Task	One that can be delegated for a specific patient	Is it appropriate to delegate based on legal and facility factors? Has the person been trained and evaluated in performing the task? Is the person able and willing to do this specific task?
Right Circumstances	Appropriate patient setting, available resources, and considering relevant factors, including patient stability	What are the patient's needs right now? Is staffing such that the circumstances support delegation strategies?
Right Person	Right person is delegating the right task to the right person to be performed on the right person	Is the prospective delegatee a willing and able employee? Are the patient needs a "fit" with the delegatee?
Right Directions and Communication	Clear, concise description of task, including its objective, limits, and expectations	Have you given clear communication about the task? With directions, limits, and expected outcomes? Does the delegatee know what and when to report? Does the delegatee understand what needs to be done?
Right Supervision and Evaluation	Appropriate monitoring, evaluation, intervention, and feedback	Do you know how and when you will interact about patient care with the delegatee? How often do you need to directly observe? Will you be able to give feedback to the staff member if needed?

Source: National Council of State Boards of Nursing, Inc. (NCSBN). (2015). *National guidelines for nursing delegation*. https://www.ncsbn.org/1625.htm

performing surgical time-outs, standardizing the change-of-shift process, and conducting interprofessional rounds to identify risks and develop a plan for delivering care.

Delegation and Assignment. Nurses delegate nursing care and supervise other staff members who are qualified to deliver care. *Delegation* is "a formal process through which a regulated health professional (delegator) who has the authority and competence to perform a procedure under one of the controlled acts delegates the performance of that procedure to another individual (delegatee)" (CNO, 2020). The delegation and assignment of nursing activities is a process that, when used appropriately, can result in safe, effective, and efficient patient care.

Delegation typically involves tasks and procedures that UCPs perform. The activities that UCPs perform include feeding and assisting patients at mealtimes, helping stable patients ambulate, and assisting patients with bathing and hygiene. Nursing interventions that require independent nursing knowledge, skill, or judgement (e.g., initial assessment, determining nursing diagnoses, patient teaching, evaluating care) are the nurse's responsibility and cannot be delegated. Nurses need to use professional judgement and follow the Five Rights of Delegation (Table 1.6) to determine appropriate activities to delegate based on the

patient's needs. The most common delegated nursing actions occur during the implementation phase of the nursing process and are for patients who are stable with predictable outcomes. For example, the nurse might delegate measuring oral intake and urine output to a UCP, but the nurse uses nursing judgement to decide whether the intake and output are adequate. Delegation is patient-specific, and the UCP can perform the delegated task for only a particular patient.

Assignment is different from delegation. Assignment involves the "allocation of nursing care among providers in order to meet patient care needs" (Nurses Association of New Brunswick/Association of New Brunswick Licensed Practical Nurses, 2015, p. 10). The RN can only assign team members (LPN/UCP) activities that are within the team member's scope of practice. For example, the nurse can assign an LPN/RPN to give a patient medication because it is within their scope of practice. The RN or LPN/RPN cannot assign a UCP to perform a complex dressing change as assessment of the wound, a task when performing dressing changes, is not within their scope of practice.

Whether nurses delegate or are working with staff to whom they assign tasks, they are responsible for the patient's total care during their work period. Nurses are responsible for supervising the UCP who is caring for their patient. It is important to clearly communicate what tasks must be done and to provide necessary guidance. Nurses are accountable for ensuring that delegated tasks are completed competently. This supervision includes evaluation and follow-up as needed by the nurse.

Delegation is a skill that is learned and must be practised to attain proficiency in managing patient care, and it requires the use of critical thinking and professional judgement.

Informatics and Technology

Rapidly changing technologies and dramatically expanding knowledge in the fields of arts and science affect all areas of health care. In telemedicine, telehealth, and telenursing, virtual technologies are used to provide professional education, consultation, and delivery of patient services. **Telehomecare** (digital health) is the delivery of health care and information through digital technologies, including high-speed Internet, wireless, satellite, and video communications. Among the many uses of telehealth are triaging patients, monitoring patients with chronic or critical conditions, helping patients manage symptoms, providing patient and caregiver education and emotional support, and providing follow-up care (CMA, 2019). Telehomecare can increase access to care. The nurse engaged in telehealth can assess the patient's health status, deliver interventions, and evaluate the outcomes of nursing care while separated geographically from the patient.

Nursing Informatics. Nursing informatics is a rapidly growing specialty in nursing. **Nursing informatics** refers to the integration of nursing science, computer science, and information technology to manage and communicate data, information, and knowledge in nursing practice (RNAO, 2012). Nursing is an information-intense profession. Advances in informatics and technology have changed the way that nurses plan, deliver, document, and evaluate care. All nurses, regardless of their setting or role, use informatics and technology every day in practice. Informatics has changed how nurses obtain and review diagnostic information, make clinical decisions, communicate with patients and health care team members, and document and provide care.

Technology advances have increased the efficiency of nursing care, improving the work environment and the care that nurses provide. Computers and mobile devices enable nurses to document at the time they deliver care and give them quick and easy access to information, including clinical decision-making tools, patient education materials, and references. Texting, video chat, and email enhance communication among health care team members and help them deliver the right message to the right person at the right time.

Technology plays a key role in providing safe, quality patient care. Medication administration applications improve patient safety by flagging potential errors, such as look-alike and sound-alike medications and adverse drug interactions, before they can occur. Computerized provider order entry (CPOE) systems can eliminate errors caused by misreading or misinterpreting handwritten orders. Sensor technology can decrease the number of falls by patients at high risk for falls. Care reminder systems provide cues that decrease the amount of missed nursing care.

The ability to use technology skills to communicate and access information is now an essential component of professional nursing practice. Nurses must be able to use word processing software, communicate by email and messaging, access appropriate information, and follow security and confidentiality rules. They need to demonstrate the skills to safely use patient care technologies and navigate electronic documentation systems. The CASN (2012) has outlined three entry-to-practice competencies related to nursing informatics: (1) use of relevant information and knowledge to support the delivery of evidence-informed patient care; (2) use of ICTs in accordance with professional and regulatory standards and workplace policies; and (3) use of ICTs in the delivery of patient care (pp. 6–10). These nursing informatics competencies are considered the minimum knowledge and skills that new graduate nurses require to practise nursing. Throughout this book, Informatics in Practice boxes such as the one below offer suggestions for nurses on how to make information technology part of good nursing practice.

INFORMATICS IN PRACTICE

Responsible Use of Social Media

A nurse wants to post pictures (or videos) of himself and his nursing colleagues from the hospital.

- Before sharing anything on social media, the nurse should ensure that the posts do not negatively reflect the nursing profession, workplace, self, or colleagues as health care providers.
- The nurse should ensure that posts do not cause a breach of confidentiality and privacy for patients, colleagues, or the workplace.
- The nurse should know and follow employer policies on using social media in the workplace.

Nurses have an obligation to ensure the privacy of their patients' health information. To do so, it is necessary to understand their hospital's policies regarding the use of technology. Nurses need to know the rules regarding accessing patient records and releasing personal health information, what to do if the information is accidentally or intentionally released, and how to protect any passwords they use. If nurses are using social media, they must be careful not to place online any personal health information that is individually identifiable and must adhere to certain principles in order to reduce risks to members

TABLE 1.7 6 *PS* OF SOCIAL MEDIA USE

Professional: Act professionally at all times
Positive: Keep posts positive
Patient/Person-free: Keep posts patient- or person-free
Protect yourself: Protect your professionalism, your reputation, and yourself
Privacy: Keep your personal and professional life separate; respect privacy of others
Pause before you post: Consider implications; avoid posting in haste or anger

Source: International Nurse Regulator Collaborative. (2016). *Social media use: Common expectations for nurses.* http://www.cno.org/globalassets/docs/prac/incr-social-media-use-common-expectations-for-nurses.pdf

of the public (Table 1.7). They must also be guided by their professional code of conduct and standards of practice.

Electronic Health Records. Informatics is most widely used in **electronic health records (EHRs)**, also called *electronic medical records.* An EHR is a computerized record of patient information. It is shared among all health care team members involved in a patient's care and moves with the patient—to other providers and across care settings. The ideal EHR is a single file in which team members review and update a patient's health record, document care given, and enter patient care orders, including medications, procedures, diets, and results of diagnostic and laboratory tests. The EHR should contain a patient's medical history, diagnoses, medications, treatment plans, immunization dates, allergies, and test results.

Many agencies have adopted electronic documentation. EHRs and the Canadian Health Outcomes for Better Information and Care (C-HOBIC) project are examples of electronic collection of health care data, and they are being implemented across many parts of Canada (C-HOBIC, 2015). The EHR integrates the output of several information systems. Canada has developed systems that form the essential building blocks of an EHR, such as digital imaging, summaries of drug prescriptions, and laboratory test results. Provinces and territories across Canada are working together with Canada Health Infoway to accelerate the development of these systems through programs such as PrescribeIT, an e-prescribing service, and ACCESS Digital Health, which links patients and their health care providers with access to personal health information and digital health services (Canadian Health Infoway, 2020).

EHRs can reduce medical errors associated with traditional paper records and improve clinical decision making, patient safety, and quality of care. Unfortunately, several obstacles remain in the way of fully implementing EHRs. Systems are expensive and technologically complex, and a number of resources are needed to implement and maintain them. Communication is still lacking among computer systems and software applications in use. Finally, patients must be assured of their privacy and that information is accessed only by members of their care team with a right to know.

Critical Thinking in Nursing

To provide high-quality care in clinical environments of increasing complexity and greater accountability, nurses need to develop higher-level thinking and reasoning skills. **Critical thinking**, the ability to focus one's thinking to get the results needed in various situations, has been described as knowing how to learn, be creative, generate ideas, make decisions, and solve problems (Alfaro-LeFevre, 2017). Critical thinking is not memorizing a list of facts or the steps of a procedure. Instead, it is the ability to make judgements and solve problems by making sense of information. Learning and using critical thinking is a continual process that occurs inside and outside of the clinical setting.

TABLE 1.8 COMPARISON OF THE NURSING PROCESS WITH TANNER'S CLINICAL JUDGEMENT MODEL AND THE NCSBN MODEL OF CLINICAL JUDGEMENT

Nursing Process (AAPIE)	Tanner's Clinical Judgement Model	NCSBN Model of Clinical Judgement
Assessment	Noticing	Recognize cues
Analysis	Interpreting	Analyze cues
Analysis	Interpreting	Prioritize hypothesis
Planning	Responding	Generate solutions
Implementation	Responding	Take action
Evaluation	Reflecting	Evaluate outcomes

Source: Ignatavicius, D. (2020). *Getting ready for the Next-Generation NCLEX® (NGN): Transitioning from the nursing process to clinical judgment.* https://evolve.elsevier.com/education/expertise/next-generation-nclex/ngn-transitioning-from-the-nursing-process-to-clinical-judgment/

Clinical reasoning involves critical thinking to examine and analyze patient care issues at the point of care (Alfaro-LeFevre, 2017). It involves understanding the medical and nursing implications of a patient's situation when decisions regarding patient care are made. Nurses use clinical reasoning when they identify a change in a patient's status, take into account the context and concerns of the patient and caregiver, and decide what to do about it.

Clinical judgement is a problem-solving activity in which nurses use critical thinking to apply knowledge, attitudes, and values using both inductive and deductive reasoning (Chin-Yee & Upshur, 2018; Van Graan et al., 2016). It closely aligns to the nursing process and is a core competency of safe nursing care. The Tanner's Clinical Judgement Model and the NCSBN Model of Clinical Judgement are two established paradigms fundamental to nursing. See Table 1.8.

Given the complexity of patient care today, nurses are required to learn and implement critical thinking and clinical reasoning skills long before they obtain those skills through the experience of professional practice. Various experiences in nursing school offer opportunities for students to learn and make decisions about patient care. Various education activities, including interactive case studies and simulation exercises, promote critical thinking and clinical reasoning. Throughout this book, select boxes, case studies, and review questions promote critical thinking and clinical reasoning skills.

Evidence-Informed Practice

Evidence-informed nursing is a problem-solving approach to clinical decision making. The CNA defines evidence-informed decision making as "an ongoing process that incorporates evidence from research findings, clinical expertise, client preferences and other available resources to inform decisions that nurses make about clients" (CNA, 2018, p. 1). Using the best available evidence (e.g., research findings, QI data), combined with nursing expertise and the patient's unique circumstances and preferences, leads to better clinical decisions and improved patient outcomes. Evidence-informed practice (EIP) closes the gap between research and practice, providing more reliable and predictable care than that based on tradition, opinion, and trial and error. Basing health care decisions on evidence is essential for quality care in all domains of nursing practice.

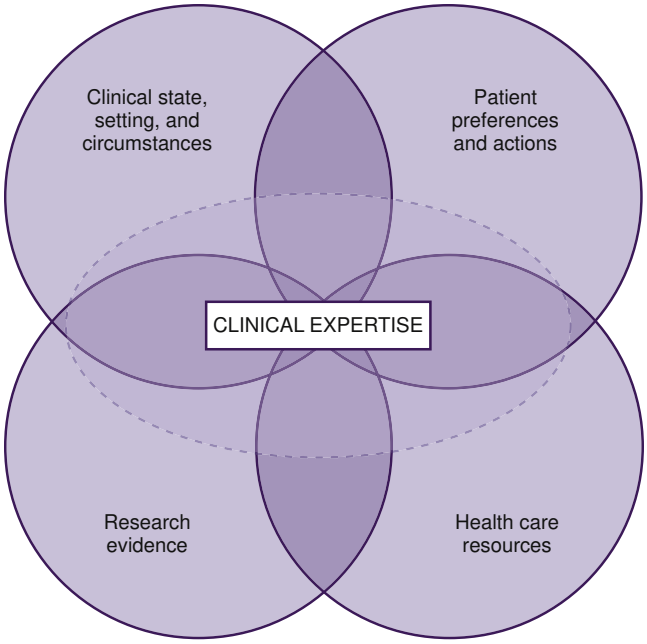


FIG. 1.3 A model for evidence-informed clinical decisions. Source: Adapted by DiCenso, A., Guyatt, G., & Ciliska, D. (2005). In Haynes, R. B., Devereaux, P. J., & Guyatt, G. (2002). Clinical expertise in the area of evidence-based medicine and patient choice. *BMJ Evidence-Based Medicine, 7*(2), 36–38. Copyright © 2002, *British Medical Journal*.

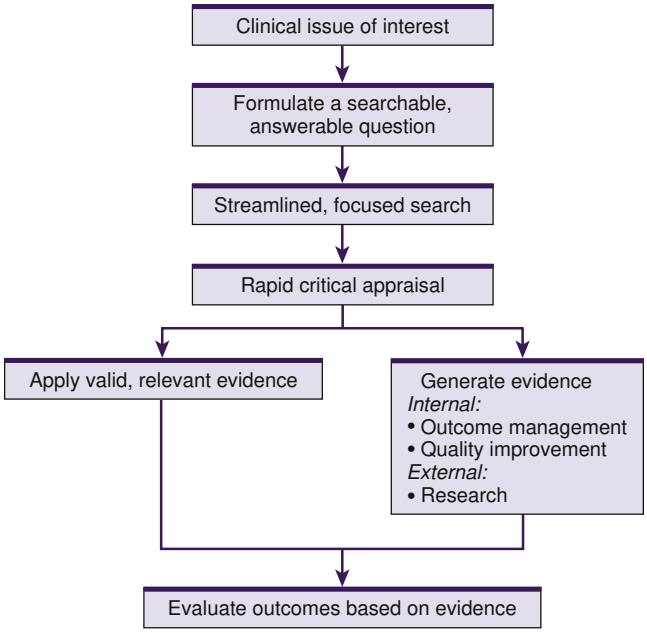


FIG. 1.4 Process of evidence-informed practice.

TABLE 1.9 STEPS OF THE EVIDENCE-INFORMED PRACTICE PROCESS

1. Ask clinical questions by using the **PICOT** format:
   Patients/population of interest
   Intervention
   Comparison or comparison group
   Outcome(s)
   Time period (as applicable)
2. Collect the most relevant and best evidence.
3. Critically appraise and synthesize the evidence.
4. Integrate all evidence with your clinical expertise and the patient's preferences and values in making a practice decision or change.
5. Evaluate the practice decision or change.
6. Share the outcomes of the decision or change.

Four primary elements contribute to the practice of evidence-informed nursing: (1) clinical state, setting, and circumstances; (2) patient preferences and actions; (3) best research evidence; and (4) health care resources (Figure 1.3). *Clinical expertise,* in which these four components are integrated, is the nurse's "ability to integrate their accumulated knowledge from patient care experiences, formal education, and current evidence to make clinical decisions" (Abraham-Settles & Williams, 2019, p. 100). It refers to the nurse's cumulated experience, education, and clinical skills.

EIP produces better outcomes in the most effective and efficient way. Application of EIP results in more accurate diagnoses, the most effective and efficient interventions, and the most favourable patient outcomes. EIP's most distinguishing feature is that the new scientific base for practice is built through a summary of studies on a topic. These summaries are called *evidence syntheses, systematic reviews,* or *integrative reviews,* depending on the organization that produces them. The evidence synthesis summarizes all research results into a single conclusion about the state of the science. From this point, the clinician translates the knowledge into a clinical practice guideline, implements it through individual and organizational practice changes, and evaluates it in terms of the effectiveness and efficiency of producing intended health care outcomes (Figure 1.4). Clinical practice guidelines can take the form of policies, clinical pathways, practice guidelines, policy statements, computer-based policies, or algorithms.

Best-practice guidelines are increasingly used to guide clinical practice in health care. Such guidelines are "systematically developed statements based on best available evidence to assist practitioners' and patients' decisions about appropriate health care" (RNAO, n.d.). Examples of the current best-practice guidelines include *Adult Asthma Care Guidelines for Nurses: Promoting Control of Asthma* (RNAO, 2017); *A Palliative Approach to Care in the Last 12 Months of Life* (RNAO, 2020); *Person- and Family-Centred Care* (RNAO, 2015); and *Preventing Violence, Harassment and Bullying Against Health Workers* (RNAO, 2019).

Throughout this book, two different types of Evidence-Informed Practice boxes are available for selected topics. Research Highlight boxes provide answers to specific clinical questions. These boxes contain the PICOT (**p**atients/population of interest, **i**ntervention, **c**omparison or comparative group, **o**utcome[s], and **t**ime period as applicable) question (Table 1.9); critical appraisal of the syntheses of evidence or primary studies; implications for nursing practice; and the source of the evidence. Translating Research Into Practice boxes provide an opportunity to practise critical thinking skills in applying evidence to patient scenarios. Evidence can support current practice and increase confidence that nursing care will continue to produce the desired outcome, or evidence may necessitate a change in practice.

Steps in the Evidence-Informed Practice Process. The six steps of the EIP process are provided in Table 1.9 and Figure 1.4.

Step 1. Step 1 is to ask a clinical question in the PICOT format. Developing the clinical question is the most important step in the EIP process (Melynk et al., 2016). A good clinical question sets the context for integrating evidence, clinical judgement,

and patient preferences. In addition, the question guides the literature search for the best evidence to influence practice.

An example of a clinical question in PICOT format is "In adult patients undergoing abdominal surgery (**p**atients/population), is splinting with an elasticized abdominal binder (**i**ntervention) or a pillow (**c**omparison) more effective in reducing pain associated with ambulation (**o**utcome) on the first postoperative day (**t**ime period)?" A properly stated clinical question may not have all components of PICOT; some include only four components. The (T) timing or (C) comparison component may not be appropriate for a particular question.

Step 2. Step 2 is to search for the best evidence in the literature. The question directs the clinician to the most appropriate databases. The search begins with the strongest external evidence to answer the question. Preappraised evidence tools, such as systematic reviews and evidence-informed guidelines, are appropriate time-saving resources in the EIP process. Systematic reviews of randomized controlled trials are considered the strongest level of evidence to answer questions about interventions (i.e., cause and effect). However, a limited number of systematic reviews are available to answer the many clinical questions. In addition, systematic reviews or meta-analyses may not always provide the most appropriate answers to all clinically meaningful questions.

If the clinical question is about how a patient experiences or copes with a health issue or lifestyle change, searching for a meta-synthesis of qualitative evidence may be the most appropriate approach. When research is insufficient to guide practice, evidence from opinion leaders or authorities or reports from expert committees may be all that exists. This type of evidence should not be the sole substantiation for interventions. Care based on expert opinions requires diligent, ongoing, rigorous outcome evaluation to generate more robust evidence.

Step 3. Step 3 is to critically appraise and synthesize the data from studies found in the search. A successful critical appraisal process focuses on three essential questions: (1) Are the results of the study valid? (2) What are the results? (3) Are the findings clinically relevant to the clinician's patients? The purpose of critical appraisal is to determine the flaws of a study and the value of the research to practice. To determine best practice, clinicians must determine the strength of the evidence and synthesize the findings in relation to the clinical question.

Step 4. Step 4 involves implementing the evidence in practice. Recommendations that are based on sufficient, strong evidence (e.g., interventions with systematic reviews of well-designed randomized controlled trials) can be implemented in practice in combination with clinicians' expertise and patient preferences. Clinical judgement will influence how patient preferences and values are assessed, integrated, and entered into the decision-making process. For example, although evidence may support the effectiveness of morphine as an analgesic, its use in a patient with renal failure may not be appropriate.

Step 5. Step 5 is to evaluate identified outcomes in the clinical setting. Outcomes must match the clinical project that has been implemented. For example, when the effectiveness of morphine for pain control is compared with that of fentanyl, evaluating the cost of each medication will not provide the required data about clinical effectiveness. Outcomes must reflect all aspects of implementation and capture the interdisciplinary contributions elicited by the EIP process.

Step 6. Step 6 is to share the outcomes of the EIP change. If nurses performing research do not share EIP outcomes, then other health care providers and patients cannot benefit from what they learned from their experience. Information is shared locally through unit- or hospital-based newsletters and posters and regionally and nationally through journal publications and presentations at conferences.

Implementation of Evidence-Informed Practice. To implement EIP, nurses need to continuously seek scientific evidence that supports the care that they provide. The incorporation of evidence should be balanced with clinical expertise and each patient's unique circumstances and preferences. EIP closes the gap between research and practice, resulting in care that produces more reliable and predictable outcomes than does care that is based on tradition, opinion, and a trial-and-error method. EIP provides nurses with a mechanism to manage the explosion of new literature, introduce new technologies, concern about health care costs, and increase emphasis on quality care and patient outcomes.

In collaboration with the First Nations and Inuit Health Branch of Health Canada, the CNA launched a Web-based portal for nurses called myCNA (see the Resources section at the end of this chapter). The portal provides opportunities for nurses to access libraries and information related to EIP and clinical practice issues through a dedicated Web-based portal.

THE NURSING PROCESS

Nurses provide patient-centred care using an organizing framework called the *nursing process*. The **nursing process** is an assertive, problem-solving approach to the identification and treatment of patient health issues. It provides a nursing process framework to organize the knowledge, judgements, and actions that nurses supply during patient care. Using the nursing process, the nurse can focus on patients' unique responses to actual or potential health issues.

Phases of the Nursing Process

The nursing process consists of five phases: assessment, diagnosis, planning, implementation, and evaluation (Figure 1.5). There is a basic order to the nursing process, beginning with the assessment. **Assessment** involves collecting subjective and objective information about the patient. *Diagnosis* involves analyzing the assessment data, drawing conclusions from the information, and labelling the human response. **Planning** consists of setting goals and expected outcomes with the patient and, when feasible, the patient's family and determining strategies

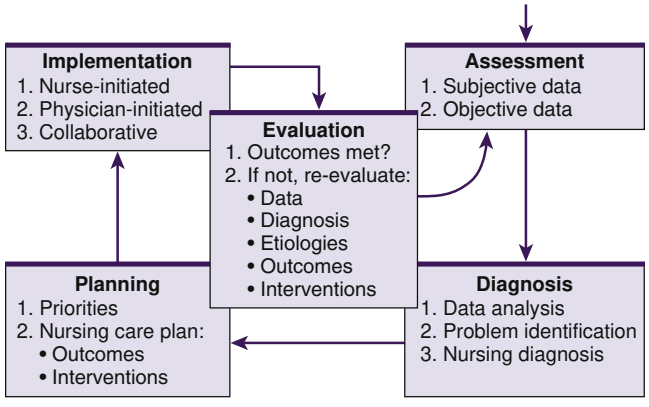


FIG. 1.5 The nursing process.

for accomplishing the goals. **Implementation** involves the use of nursing interventions to activate the plan. The nurse also promotes self-care and family involvement when appropriate. **Evaluation** is an extremely important part of the nursing process that is too often not addressed sufficiently. In the evaluation phase, the nurse first determines whether the identified outcomes have been met. Then the overall accuracy of the assessment, diagnosis, and implementation phases is evaluated. If the outcomes have not been met, new approaches are considered and implemented as the process is repeated.

Interrelatedness of Phases

The five phases of the nursing process do not occur in isolation from one another. For example, nurses may gather data about the wound condition (assessment) as they change the soiled dressing (implementation). There is, however, a basic order to the nursing process, which begins with assessment. Assessment provides the data on which planning is based. An evaluation of the nature of the assessment data usually follows immediately, resulting in the formulation of a diagnosis. A plan based on the nursing diagnosis then directs the implementation of nursing interventions. Evaluation continues throughout the cycle and provides feedback on the effectiveness of the plan or the need for revision. Revision may be needed in the data collection method, the diagnosis, the expected outcomes or goals, the plan, or the intervention method. Once initiated, the nursing process is not only continuous but also cyclical in nature.

Assessment Phase

Data Collection. Sound data form the foundation for the entire nursing process. Collection of data is a prerequisite for diagnosis, planning, and intervention (Figure 1.6). Humans have needs and problems in biophysical, psychological, sociocultural, spiritual, and environmental domains. A nursing diagnosis made without supporting data pertaining to all of these dimensions can lead to incorrect conclusions and depersonalized care. For example, if a hospitalized patient does not sleep all night, a disturbed sleep pattern may be mistakenly diagnosed, whereas the patient may have worked nights her entire adult life, and it is normal for her to be awake at night. Information concerning her sleeping habits is necessary to provide individualized care to her by ensuring that sleep medication is not routinely administered to her at 2200 hours. The importance of person-centred assessment in the process of clinical decision making cannot be overemphasized.

FIG. 1.6 Collection of data is a prerequisite for diagnosis, planning, and intervention. Source: iStock.com/IPGGutenbergUKLtd.

Because nursing interventions are only as sound as the data on which they are based, the database must be accurate and complete. When possible, collateral information obtained from sources such as the patient's record, other health care workers, the patient's family, and the nurse's observations should be validated with the patient. If the patient's statements seem questionable, they should be validated by a knowledgeable person.

Diagnosis Phase

Data Analysis and Problem Identification. The diagnosis phase begins with clustering of information and, after analysis of the assessment data, ends with an evaluative judgement about a patient's health status. Analysis involves sorting through and organizing the information and determining unmet needs, as well as the strengths, of the patient. The findings are then compared with documented norms to determine whether anything is interfering or could interfere with the patient's needs or ability to maintain their usual health pattern.

After a thorough analysis of all available information, one of two possible conclusions is reached: (1) the patient has no health conditions that necessitate nursing intervention or (2) the patient needs nursing assistance to solve a potential or actual health problem.

Nursing Diagnosis. The term *nursing diagnosis* has many different meanings. To some, it merely connotes the identification of a health issue. More commonly, a nursing diagnosis is viewed as the conclusion about an identified cluster of signs and symptoms. The diagnosis is generally expressed as concisely as possible according to specific policies.

Nursing diagnosis is the act of identifying and labelling human responses to actual or potential health issues. Throughout this book, the term *nursing diagnosis* means (1) the process of identifying actual and potential health problems and (2) the label or concise statement that describes a clinical judgement concerning a human response to health conditions/life processes, or susceptibility for that response, by an individual, family, group or community. A nursing diagnosis supports the identification and prioritization of nursing interventions to achieve optimal patient outcomes. Many human responses identified result from a disease process. For example, a patient may have a medical diagnosis of pancreatitis. In this case, the nursing diagnosis would focus on how the illness affects the patient's current health status. Examples of patient responses to pancreatitis might be ineffective breathing pattern, deficit fluid volume, nausea, imbalanced nutrition, and ineffective health maintenance.

Diagnostic Process. The diagnostic process involves analysis and synthesis of the data collected during assessment of the patient. Data that indicate dysfunctional or risk patterns are clustered, and a judgement about the data is made. It is important to remember that not all conclusions resulting from data analysis lead to nursing diagnoses. Nursing diagnoses refer to health states that nurses can legally diagnose and treat. Data may also point to health conditions that nurses treat collaboratively with other health care providers. During this phase of the nursing process, the nurse identifies both nursing diagnoses and treatments that necessitate collaborative nursing intervention.

Nursing diagnostic statements are considered acceptable when written as two- or three-part statements. When written in three parts, the statement is in the PES (**p**roblem, **e**tiology, and **s**igns

and symptoms) format. A two-part statement is deemed acceptable if the signs and symptoms data are easily available to other nurses caring for the patient through the nursing history or progress notes. "Risk" nursing diagnoses are also two-part statements because signs and symptoms are not relevant. Use of a three-part statement is recommended during the learning process:

Problem (P): A brief statement of the patient's potential or actual health issue (e.g., pain)

Etiology (E): A brief description of the probable cause of the issue; contributing or related factors (e.g., resulting from surgical incision, localized pressure, edema)

Signs and symptoms (S): A list of the objective and subjective data cluster that leads the nurse to pinpoint the health issue; critical, major, or minor defining characteristics (e.g., as evidenced by verbalization of pain, isolation, withdrawal)

It is important to remember that gathering the "S" comes first in the diagnostic process, even though it is last in the PES statement format.

Identifying the Problem. The NANDA International (NANDA-I; formerly known as the North American Nursing Diagnosis Association) classification system is one framework that is useful for formulating actual nursing diagnoses and at-risk diagnoses. Clinically relevant cues are clustered into functional health patterns based on Gordon's (2014) 11 functional health patterns: health perception–health management pattern; nutritional–metabolic pattern; elimination pattern; activity–exercise pattern; sleep–rest pattern; cognitive–perceptual pattern; self-perception–self-concept pattern; role–relationship pattern; sexuality–reproductive pattern; coping–stress tolerance pattern; and value–belief pattern.

The process of making a nursing diagnosis from clustered cues begins with the recognition of dysfunctional patterns. Checking the definition of nursing diagnoses classified according to the functional pattern helps identify the problem's appropriate label. The nursing diagnosis deemed most accurate is based on the individual patient's data.

Etiology. The etiology underlying a nursing diagnosis is identified in the diagnostic statement. Taking time to properly link the health issue with its etiology directs the nurse to the correct interventions. Interventions to manage the issue are planned by directing nursing efforts toward the etiology. The etiology can be a pathophysiological, maturational, situational, or treatment-related factor (Ladwig, Ackley, & Makic, 2019). The etiology is written after the diagnostic label. These two components are separated by the phrase "related to." For example, in Nursing Care Plan 1.1, the nursing diagnosis is *"Activity intolerance* caused by an *imbalance between oxygen supply/demand."* The etiology directs the nurse to select the appropriate interventions to modify the factor of fatigue. When the etiology is not included in the diagnosis, the nurse cannot plan the correct intervention to treat the specific cause of the condition. When possible, the etiology should be validated with the patient. When the etiology is unknown, the statement reads "related to unknown etiology." When identifying "risk for" nursing diagnoses, the specific risk factors present in the patient's situation are identified as the etiology, and the phrase "as evidenced by" is used rather than "related to."

Signs and Symptoms. Signs and symptoms are the clinical cues that, in a cluster, point to the nursing diagnosis. The signs and symptoms are often included in the diagnostic statement after the phrase "as evidenced by." The complete nursing diagnostic statement in Nursing Care Plan 1.1 is "*Activity intolerance* caused by an *imbalance between oxygen supply/demand* resulting in an *abnormal heart rate response to activity, exertional dyspnea, and fatigue.*" Throughout this book, nursing diagnoses are listed for many diseases and patient situations. These diagnoses sometimes include additional explanatory material in parentheses.

Collaborative Problems. **Collaborative problems** are potential or actual complications of disease or treatment that nurses manage together with other health care providers. A look at the primary nursing goals helps differentiate between nursing and medical diagnoses (see Table 1.4). A medical diagnosis identifies current symptoms associated with a disease to predict the disease course and modify outcomes. A nursing diagnosis involves a clinical judgement about an individual, family, or community response to an actual or potential health issue (Chiffi & Zanotti, 2015). During the nursing process diagnosis phase, the nurse identifies the risks for these physiological

NURSING CARE PLAN 1.1

Heart Failure*

NURSING DIAGNOSIS	***Activity intolerance*** *caused by an imbalance between oxygen supply/demand resulting in an abnormal heart rate response to activity, exertional dyspnea, and fatigue*
Expected Patient Outcomes	**Nursing Interventions and *Rationales***
• Achieves a realistic program of activity that balances physical activity with energy-conserving activities • Vital signs, O_2 saturation, and colour are within normal limits in response to activity	*Energy Management* • Encourage alternate rest and activity periods *to reduce cardiac workload and conserve energy.* • Provide calming diversionary activities to promote relaxation to reduce O_2 consumption and to relieve dyspnea and fatigue. • Monitor patient's oxygen response (e.g., pulse rate, cardiac rhythm, colour, O_2 saturation, and respiratory rate) to self-care or nursing activities *to determine level of activity that can be performed.* • Teach patient and caregiver techniques of self-care to minimize O_2 consumption (e.g., self-monitoring and pacing techniques for performance of ADLs). *Activity Therapy* • Collaborate with occupational therapist, physiotherapist, or both *to plan and monitor activity and exercise program.* • Determine patient's commitment to increasing frequency or range of activities, or both, *to provide patient with obtainable goals.*

ADLs, activities of daily living.

*The complete nursing care plan for heart failure is provided in Nursing Care Plan 37.1 in Chapter 37.

complications in addition to nursing diagnoses. Identification of collaborative problems requires knowledge of pathophysiology and possible complications of medical treatment. For example, collaborative problems with heart failure described in Nursing Care Plan 1.1 could include pulmonary edema, hypoxemia, dysrhythmias, cardiogenic shock, or a combination of these. In the interdependent role, nurses use both physician-prescribed and nursing-prescribed interventions to prevent, detect, and manage collaborative problems.

Collaborative problem statements are usually written as "potential complication: _____" (e.g., "potential complication: pulmonary edema") without a "related to" statement. When potential complications are used in this textbook, "related to" statements have been added to increase understanding and link the potential complication to possible causes.

Planning Phase

Priority Setting. After the nursing diagnoses and collaborative problems are identified, the nurse must determine the urgency of the identified problems, with actual problems being prioritized over potential problems. Diagnoses of the highest priority necessitate immediate intervention. Those of lower priority can be addressed later. When setting priorities, the nurse should first intervene for life-threatening conditions involving airway, breathing, or circulation issues.

Maslow's (1954) hierarchy of needs also acts as a useful guide in determining priorities. These needs include the physical needs; safety, love, and belonging; esteem; and self-actualization. Lower-level needs must be satisfied before a higher level can be addressed.

Another guideline in setting priorities is to determine the patient's perception of what is important. When the patient's priorities are not congruent with the actual situation, the nurse may have to give explanations or do some teaching to help the patient understand the need to do one thing before another. Often it is more efficient to meet the need that the patient deems a priority before moving on to other priorities.

Identifying Outcomes. After priorities are established, expected outcomes or goals for the patient are identified. *Outcomes* are simply the results of care. **Expected patient outcomes** are *goals* that articulate what is desired or expected as a result of care. The terms *goals* and *expected outcomes* are often used interchangeably: Both terms describe the degree to which the patient's response, as identified in the nursing diagnosis, should be prevented or changed as a result of nursing care. Expected outcomes should be agreed on with the patient, if feasible, just as priorities of interventions are considered with the patient when possible. Goals are often developed using the **SMART** algorithm: **S**–smart; **M**–measurable; **A**–achievable; **R**–realistic; and **T**–timely. Although the ultimate goal for the patient is to maintain or attain a state of dynamic equilibrium at the highest possible level of wellness, the setting of more specific expected outcomes, both short- and long-term, is necessary for systematic evaluation of the patient's progress. Expected patient outcomes identified in the planning stage indicate which criteria are to be used in the evaluation phase of the nursing process.

The nurse identifies both long-term and short-term goals by writing specific expected patient outcomes in terms of desired, realistic, measurable patient behaviours to be accomplished by a specific date. For example, a short-term expected outcome for the patient in Nursing Care Plan 1.1 might be "The patient will maintain normal vital signs in response to activity in 2 days," whereas a long-term expected outcome might be "The patient will identify a realistic activity level to achieve or maintain by the time of discharge." These outcomes would be evaluated in 2 days and at discharge, and the care plan would be revised as necessary if the outcomes were not met. However, these statements are less than optimal because they provide no criteria by which to evaluate the patient's degree of progress from admission to discharge.

Determining Interventions. After patient outcomes are identified, nursing interventions to accomplish the desired status of the patient should be planned (Saba, 2017). A **nursing intervention** is a single nursing action, treatment, procedure, activity, or service designed to achieve an outcome of a nursing or medical diagnosis for which the nurse is accountable (Ladwig, Ackley & Makic., 2019). Interventions can be independent or dependent nursing actions. Independent interventions can be carried out by the nurse without consultation (e.g., elevating the head of the bed for a patient short of breath). Dependent nursing interventions require an order from a physician or nurse practitioner (e.g., application of oxygen).

Sound knowledge, good judgement, and decision-making ability are necessary to effectively choose the interventions that the nurse will use (Figure 1.7). The nurse should foster the use of a research-based approach to interventions. In the absence of a nursing research base, scientific principles from the behavioural and biological sciences should guide the selection of interventions.

Implementation Phase. Carrying out the specific, individualized plan constitutes the implementation phase of the nursing process. The nurse performs the interventions or may designate and supervise other health care workers who are qualified to intervene. Throughout the implementation phase, the nurse must evaluate the effectiveness of the methods chosen to implement the plan.

Evaluation Phase. All phases of the nursing process must be evaluated (see Figure 1.5). Evaluation occurs after implementation of the plan but also continuously throughout the process. The nurse evaluates whether sufficient assessment data have been obtained to allow a nursing diagnosis to be made. The diagnosis is, in turn, evaluated for accuracy. For example, pain might have actually been related to a wound itself or to pressure from a constricting dressing.

Next, the nurse evaluates, with the patient when possible, whether the expected patient outcomes and interventions are realistic and achievable. If not, a new plan should be formulated.

FIG. 1.7 Collaboration among the patient, the family, and the nurse is necessary in setting goals and coordinating high-quality care. Source: iStock.com/monkeybusinessimages.

This may involve revision of expected patient outcomes and interventions. Consideration must be given to whether the plan should be maintained, modified, totally revised, or discontinued in view of the patient's status.

NURSING CARE PLANS

When the nurse has determined the nursing diagnoses, the outcomes, and the interventions for a patient, the plan is recorded to ensure continuity of care by other nurses and health care providers. The plan should contain specific directions for carrying out the planned interventions, including how, when, for how long, how often, where, by whom, and with what resources the activities should be performed.

Various methods and formats are used to record the nursing care plan. One of the important factors influencing a choice of care plan format has to do with the frameworks used in a particular hospital. Care plans are often written on a specific form adopted by an institution, but they may also be entered electronically to organize nursing data. Every nurse who cares for the patient must have access to the plan, whether handwritten or computer generated, to provide the planned care. The care plan is part of the patient's medical record and may be used in legal proceedings. The nurse must document the patient's nursing care requirements, changes that are made as the plan is implemented, and the outcomes of the nursing interventions. Not every activity that the nurse implements with the patient will be recorded on the care plan.

Standardized care plans are sometimes used as guides for routine nursing care and as a basis for developing individualized care plans. When standardized care plans are used, they should be personalized and specific to the unique needs and problems of each patient.

Concept Maps

A concept map is another method of recording a nursing care plan. In a concept map care plan, the nursing process is recorded in a visual diagram of patient issues and interventions that illustrates the relationships among clinical data. Nurse educators use concept mapping to teach nursing process and care planning. There are various formats for concept maps. *Conceptual care maps* blend a concept map and a nursing care plan. On a conceptual care map, assessment data used to identify the patient's primary health concern are centrally positioned. Diagnostic testing data, treatments, and medications surround the assessment data. Positioned below are nursing diagnoses that represent the patient's responses to the health state. Listed with each nursing diagnosis are the assessment data that support the nursing diagnosis, outcomes, nursing interventions with rationales, and evaluation. After completing the map, connections can be drawn between identified relationships and concepts. A conceptual care map creator is available online on the website for this book. For selected case studies at the end of the management chapters, related concept maps are available on the website at http://evolve.elsevier.com/Canada/Lewis/medsurg.

Clinical (Critical) Pathways

Care related to common health issues experienced by many patients is delineated with the use of clinical (critical) pathways. A **clinical (critical) pathway** directs the entire health care team in the daily care goals for select health care conditions. It includes a nursing care plan, specific interventions for each day of hospitalization, and a documentation tool.

The clinical pathway organizes and sequences the caregiving process at the patient level to better achieve desired quality and cost outcomes. It is a cyclical process organized for specific case types by all related health care departments. The case types selected for clinical pathways are usually those that occur in high volume and are highly predictable, such as myocardial infarction, stroke, and angina.

The clinical pathway describes the patient care required at specific times in the treatment. An interprofessional approach helps the patient progress toward desired outcomes within an estimated length of stay. The exact content and format of clinical pathways vary among institutions.

DOCUMENTATION

It is critical that the patient's progress be documented in a systematic way. Proper documentation enables safe and effective patient care. Patient records are also frequently used as evidence when there are legal issues related to negligence and competency. Nurses in Canada should be aware of the Canadian Nurses Protective Society. This is the agency that provides liability coverage and is a source of information and education on issues such as documentation and charting.

Many documentation methods and formats are used, depending on personal preference, hospital policy, and regulatory standards. Many provinces are now moving to implement EHRs (see "Electronic Health Records" earlier in this chapter). Funding and support are available through organizations such as the Canada Health Infoway. Patient progress may be documented by nurses with the use of flow sheets; narrative notes; SOAP (**s**ubjective, **o**bjective, **a**ssessment, **p**lan) charting (described in the next section); clinical pathways; and computer-based charting. Every method or combination of methods is designed to document the assessment of patient status, the implementation of interventions, and the outcome of interventions.

There are several methods of documentation that address the nursing process. The SOAP method is a common way of evaluating and recording patient progress. Some institutions use SOAPIER notes (**s**ubjective, **o**bjective, **a**ssessment, **p**lan, **i**ntervention, **e**valuation, and **r**evision of plan). A SOAP or SOAPIER progress note is issue-specific and incorporates the elements in Table 1.10. The following is the process of SOAP documentation:

1. Additional subjective and objective data related to the area of concern are gathered.
2. On the basis of old and new data, the patient's progress toward the expected patient outcome and the effectiveness of each intervention are assessed.

TABLE 1.10 COMPONENTS OF A SOAP PROGRESS NOTE

SOAP Component	Explanation
Subjective	Information supplied by patient or knowledgeable other person
Objective	Information obtained by nurse directly by observation or measurement, from patient records, or through diagnostic studies
Assessment	Nursing diagnosis of issue according to subjective and objective data
Plan	Specific interventions related to a diagnostic or issue with consideration of diagnostic, therapeutic, and patient education needs

3. On the basis of the reassessment of the situation, the initial plan is maintained, revised, or discontinued.

The following is an example of SOAP charting for the nursing diagnosis "*Risk for infection* as evidenced by *alteration in skin integrity and invasive procedure* (surgery)":

S: Wound is more painful today.
O: Temperature of 39.4°C, facial grimacing in response to movement, dressing saturated with purulent drainage
A: Risk for wound infection
P: Notify surgeon, take temperature q2h, reinforce dressing.

A second method of documentation is the PIE (**p**roblem, **i**ntervention, and **e**valuation) method, which is similar to SOAP charting and is also problem-oriented. It does not include assessment data because those are recorded on flow sheets.

A third documentation format is DARP (**d**ata, both subjective and objective; **a**ction or nursing intervention; **r**esponse of the patient; and **p**lan) progress notes. It is also called *focus charting,* and it addresses patient concerns, not just issues.

Charting by exception is another method of documentation that focuses on documenting deviations from predefined normal findings. Assessments are standardized on flow sheets, and nurses make a narrative note only when there are exceptions to the standardized statements.

FUTURE CHALLENGES OF NURSING

Nursing roles continually evolve as society changes and health care providers learn to integrate new knowledge and technology into current practices. Although nursing is defined in different ways, past and current definitions of nursing include commonalities of health, illness, and caring. It is important that these concepts be addressed in nursing education as greater demands are placed on the profession. Future nursing practice will continue to call for the use of reasoning, analytical thinking skills, and synthesis of rapidly expanding knowledge to assist patients in maintaining or attaining optimal health.

An increasing emphasis on leadership, accountability, courage and persistence, innovation and risk taking, and decision making is essential if nursing is to move forward. This has never been more relevant than during the 2020 SARS-CoV-2 global pandemic. Nurses were stressed to maintain standards of nursing practice when resources were scarce. Many of Canada's emergency departments and hospitals that experienced pre-existing capacity issues were further challenged. Nursing roles changed depending on the needs of the community. Nurses were brought out of retirement and deployed to assessment centres that supported the increased need for testing of community members, while others were transitioned into critical care areas based on capacity needs. The unprecedented role that nurses and nursing leaders played in all areas of health care helped to mitigate the impact SARS-CoV-2 had on the country.

Nurses must take a leadership role in creating health care systems that provide safe, high-quality, patient-centred care. **Nursing leadership** refers not only to people holding certain positions but also to an attitude and approach in which lifelong learning and a commitment to excellence in practice are valued. In its attempt to keep pace, nursing would do well to remember what the Red Queen in *Through the Looking Glass* said to Alice: "Now here, you see, it takes all the running you can do to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that" (Carroll, 1865/1973). This appears to be the future of nursing. Nursing leaders must ask some fundamental questions about what the contribution of nurses must be for the twenty-first century. Nurses must increasingly challenge the status quo by relying on research and the wisdom that results from asking difficult questions. Nurse leaders must have an attitude of open-mindedness while remaining grounded in values that overcome the tendency to promote self-interest.

Medical-surgical nursing can positively influence the complex health care system in Canada by increasing interprofessional collaboration, improving patient care and safety, utilizing advanced informatics and technology, applying EIP, and continuing to develop nurses' critical thinking and clinical reasoning skills.

REVIEW QUESTIONS

The number of the question corresponds to the same-numbered learning outcome at the beginning of the chapter.

1. Which of the following is a current challenge facing the Canadian health care system?
   a. Lack of long-term funding model between provinces/territories and federal government
   b. Lack of innovation in health care
   c. Expanding knowledge and technology
   d. Health care ranking as a low-priority public health policy issue by Canadians
2. Which of the following is an example of a nursing activity that reflects the Canadian Nurses Association's definition of nursing?
   a. Establishing that the client with jaundice has hepatitis
   b. Determining the cause of hemorrhage in a postoperative client on the basis of vital signs
   c. Identifying and treating dysrhythmias that occur in a client in the coronary care unit
   d. Determining that a client with pneumonia cannot effectively cough up pulmonary secretions
3. Which of the following actions best describes the work of medical-surgical nurses?
   a. Providing care only in acute care hospital settings
   b. Requiring certification by the Canadian Nurses Association in this specialty
   c. Addressing the needs of acutely ill adults and their families
   d. Caring primarily for perioperative clients
4. Which of the following characteristics of health care teams are important for outstanding interprofessional care? *(Select all that apply.)*
   a. Care expertise
   b. Diverse mix of health care providers
   c. Interprofessional leadership
   d. Effective group functioning
   e. Clear differentiation between roles