Foundations in

# Patient Safety for Health Professionals

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*This book is dedicated to*

*Mike,*
*Ryan, Christine, and Jenee*
*and Sandy*

*Pat,*
*Becky, Juande, and Lucía,*
*Katie and Neel*

*May the lessons learned by those who read this book help to make your health care safer.*

# Contents

# Foreword

The 1999 release of the Institute of Medicine (IOM) report, *To Err Is Human,*[1] was a wake-up call for American health professionals and institutions. It created great concern and a heightened awareness that all is not well in American health care, and it sparked a national effort to address the human and system flaws that result in medical errors. The subsequent release of the second report of the IOM Committee on Quality of Health Care in America, *Crossing the Quality Chasm,*[2] laid out strategies for addressing and reducing errors, including system and institutional design change, development, and application of evidence to the study of errors, aligning payment with quality, and enhancing the education of health professionals.

In 2002, the IOM convened a Health Professions Education Summit that produced a third report, *Health Professions Education: A Bridge to Quality.*[3] This report defined five core competencies of health professionals necessary to improve quality, reduce errors, and assure patient safety. Competent health professionals should provide patient-centered care, work in interdisciplinary teams, employ evidence-based practice, apply quality improvement, and utilize informatics.

In 2003, in response to the clear need to address the development of students' competence to work in interdisciplinary teams, Creighton University established an Office of Interprofessional Education, of which I was named director. Several interprofessional teams were assembled to plan and implement educational experiences to offer students of Creighton's health professions schools and programs. One of the interprofessional teams, comprising expertise in law, medicine, nursing, pharmacy, physical therapy, occupational therapy, social work, systems design, and decision sciences, embarked on the development of an interprofessional course in Patient Safety offered to students in several colleges and schools within the university. It is that course and the experiences of its faculty who are teaching that have given rise to this book.

As pioneers, course faculty quickly found that there was no extant text available that met the needs of their students. In consequence, they embarked on distilling

the essence of the course to develop the present comprehensive text and approach to teaching patient safety to a group of students drawn from a variety of professions. This is an interprofessional faculty teaching an interprofessional student body.

This text presents the background and need for safety improvement, why errors occur, principles of patient safety assurance, quality and safety improvement, the appropriate and constructive use of evidence, the importance of systems design, and organizational structure and culture. It also addresses questions of safety from patients' and professionals' perspectives and, very importantly, the responsibilities of professionals, employers, and organizations when errors occur, when patient safety is compromised, or when patients are injured.

The work will be of great value to similar interprofessional teams teaching students drawn from a variety of professional backgrounds, including not only the health professions but also management, law, systems design, decision sciences, and information technology.

*Richard L. O'Brien*

**Richard L. O'Brien, MD, FACP**

Richard O'Brien is University Professor and a member of the Center for Health Policy and Ethics at Creighton University. He was a participant in the 2002 Institute of Medicine Health Professions Education Summit and in 2003 was appointed director of the Office of Interprofessional Education at Creighton, a position he held until 2006. During his tenure in this office he instigated and assisted the development of a number of interprofessional education activities for students of business, law, dentistry, medicine, nursing, occupational therapy, pharmacy, physical therapy, and social work. He was also dean of the School of Medicine at Creighton from 1982 to 1992 and vice president for Health Sciences from 1984 to 1999. He and two colleagues have recently published a book, *Cultural Proficiency in Addressing Health Disparities* (also published by Jones and Bartlett). He is currently engaged in studying and teaching the ethics of health policy formation, human subject research, and the reduction of health disparities.

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# Acknowledgments

Why would 15 faculty members from across a university campus, with no particular reason to work together, establish solidarity in our commitment to teaching students about the sciences of patient safety?

There is only one reason. Each of us has a personal story. The story is one of harm and injury through errors, mishaps, and mistakes. For some of us the story describes the pain, suffering, or losses of our own loved ones. For others, the story illustrates the pain, suffering, or losses incurred by others we tried to care for through our own professional experiences.

And while each story is unique to the persons or places involved, all stories share a common and powerful feature—isolation. Each of us had not discussed our own personal story with others to any great extent. Where would one go to do that? Where is the support system or vehicle for communication with each other about this? Let's face it; we had an unusual and rare experience, didn't we? What happened couldn't possibly be frequently encountered by others, we rationalized.

But our experiences are frequently encountered by others. The overwhelming body of evidence has repetitively shown us this truth. And even more astounding is that we know that much of this harm and injury is avoidable. Avoidable if we each take responsibility for being competent at and applying safety principles to patient care delivery.

We are indebted to those who have brought this most important area of care and concern into the visible forefront of our social priorities—the scientists, clinicians, and advocates for patient safety. Most of all, we are grateful to the individuals and families who have experienced harm, but are willing to share their stories with the hope of making a difference in the lives of others.

# Contributors

**Amy A. Abbott, PhD, RN**

Amy Abbott is an assistant professor and faculty member in the School of Nursing at Creighton University and in the Creighton Center for Health Services Research and Patient Safety, as well as a staff nurse at Creighton University Medical Center in the Adult Intensive Care Unit. Dr. Abbott's research interests include patient safety and quality in nursing education and practice and health information technology. She has been actively involved in the multidisciplinary patient safety course since 2007. Dr. Abbott is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

**James D. Bramble, PhD, MPH**

James D. Bramble is an associate professor in the School of Pharmacy and Health Professions and the Director of the Health Services Administration Certificate Program at Creighton University. Dr. Bramble teaches courses on research methodology and biostatistics, as well as healthcare management and patient safety. His research focuses on patient safety, health information technology, and resource utilization in healthcare organizations. He has been involved in many funded grant projects, published in both books and health science research journals, had book reviews accepted for publication, been an adjunct journal reviewer, and has presented at many conferences and meetings. Dr. Bramble also has a secondary appointment in the School of Medicine's Department of Anesthesiology and has held a Creighton Center for Health Services Research and Patient Safety faculty membership since 2004. He participates in the interprofessional education course Foundations in Patient Safety. Dr. Bramble is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

### Bartholomew E. Clark, RPh, PhD

Bartholomew E. Clark is an associate professor in the School of Pharmacy and Health Professions at Creighton University. Before earning a PhD in the Social and Administrative Sciences in Pharmacy at the University of Wisconsin–Madison, Dr. Clark earned a BS in Pharmacy and an MS in Pharmacy Administration at the University of Illinois at Chicago, practiced pharmacy in a variety of community and institutional settings, and served as Professional Affairs Manager at the National Association of Boards of Pharmacy. Dr. Clark's research interests include patient safety and professional and workplace attributes that contribute to pharmacists' organizational commitment. Responsibilities at Creighton include teaching in Pharmacy Practice Management, Pharmacy Practice Law, and Foundations in Patient Safety. Dr. Clark is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

### Teresa M. Cochran, PT, DPT, GCS, MA

Teresa M. Cochran is an associate professor and vice chair in the Department of Physical Therapy, School of Pharmacy and Health Professions, Creighton University, Omaha, Nebraska. She also codirects the Office of Interprofessional Scholarship, Service, and Education and is a faculty affiliate in the Center for Health Policy and Ethics at Creighton University. Dr. Cochran's teaching responsibilities are focused in the areas of behavioral science and evidence-based decision making in the entry-level and transitional Doctor of Physical Therapy programs. She earned specialist board certification in geriatric physical therapy from the American Board of Physical Therapy Specialties, and her research interests explore practice errors in rehabilitation, access to rehabilitation for vulnerable groups, and prevention of chronic conditions and disability. Dr. Cochran currently serves as president of the Nebraska Chapter of the American Physical Therapy Association. Dr. Cochran is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

### Andjela Drincic, MD

Andjela Drincic is a faculty member at the Creighton Center for Health Services Research and Patient Safety (CHRP) and associate professor of Medicine at Creighton University School of Medicine. As a member of CHRP, she has been involved in research focusing on error identification and prevention in both inpatient and outpatient settings. As a medical director for diabetes services at Creighton University Medical Center, she is working on prevention of insulin errors in the

hospital environment. She has specific interest in human-technology safety issues in the outpatient endocrinology clinics. She, along with the coauthors of this book, has been teaching the campus-wide interdisciplinary patient safety course since 2005. Dr. Drincic is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

### Kevin T. Fuji, PharmD

Kevin Fuji is an Assistant Professor and also recently completed his program as a Health Services Research Fellow with an emphasis in Patient Safety for the Creighton Center for Health Services Research and Patient Safety in the School of Pharmacy and Health Professions at Creighton University. He conducts research examining the adoption and use of health information technologies, specifically personal and electronic health records, in the context of patient safety and quality of care. He also teaches in the campus-wide interdisciplinary patient safety course with the other authors of this book. Dr. Fuji is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

### Kimberly A. Galt, RPh, PharmD, FASHP

Kimberly Galt is the director of the Creighton Center for Health Services Research and Patient Safety, the associate dean for research in the School of Pharmacy and Health Professions, and a professor at Creighton University. Her research has emphasized identification of errors, error reduction, and error prevention for patients and healthcare providers to achieve both safety and quality in patient care. She has contributed to understanding the human-technology safety issues as emerging health information technologies have gained use in health care. Dr. Galt has served on several study sections for the Agency for Healthcare Research and Quality, chairs the eHealth Council for the state of Nebraska, and chaired the interprofessional task force on patient safety curriculum development for Creighton University. She, along with the coauthors of this book, has been teaching the campus-wide interdisciplinary patient safety course since 2005. Dr. Galt is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

### John M. Gleason, DBA

John M. Gleason is a professor emeritus of Decision Sciences, Department of Information Systems and Technology, College of Business Administration, Creighton University. He has taught graduate and undergraduate courses in operations research,

decision sciences, and environmental risk analysis in business, engineering, and environmental science programs at several universities. Dr. Gleason has served as a member of the Editorial Advisory Board of *RISK: Health, Safety & Environment*, is a past vice president of the Risk Assessment & Policy Association, and is the recipient of government, professional society, and university research honors and awards. His research interests include operations research, decision technologies, and risk analysis, with his recent research concentrating on the theory and application of data envelopment analysis. His focus in this book is on decision analysis, technology, and systems analysis issues related to patient safety.

**Janet K. Graves, PhD, RN**

Janet Graves is the chair of the Traditional Curriculum at Creighton University School of Nursing. She taught Nursing of Children for several years and currently teaches Informatics in Health Care. Her interest in patient safety developed when providing nursing care for children. Her current work in informatics has led to interest in information technologies that have the potential to improve patient safety. Dr. Graves is also the director of eLearning in the School of Nursing. Her research interests include uses of mobile information devices at the point of care and effective methods of online teaching and learning.

**Barbara M. Harris, MSW, PhD**

Barbara Harris is the field practicum coordinator for the Department of Social Work at Creighton University. She teaches practice courses in social work. Her community involvement is primarily focused on family violence and child poverty. She served on several community boards to identify the intraprofessional approaches to addressing social welfare needs. As director of the Center for the Study of Children's Issues and as a founding member of the Domestic Violence Coordinating Council, she advanced this interprofessional framework. She served on the interprofessional task force on patient safety curriculum development for Creighton University. She, along with the coauthors of this book, developed the interdisciplinary patient safety course in 2005.

**Pat Hoidal, RN, MPH, CPHQ**

Pat Hoidal is the director of Performance Improvement and Risk Management at Saint Elizabeth Regional Medical Center in Lincoln, Nebraska. As the patient safety officer, she is responsible for facilitating the use of evidence-based practice and process improvement tools. She currently leads initiatives aimed at improving

patient safety and quality of care by the use of the GE WorkOut and TeamSTEPPS models. She is a member of the administrative Quality and Patient Safety Council and has been involved in a variety of clinical quality improvement efforts for the medical center. Prior to coming to Saint Elizabeth, Hoidal spent seven years with Creighton University Medical Center. While at Creighton, Hoidal served as director of Quality and Patient Safety, and Risk Management. She led initiatives to implement The Joint Commission's National Patient Safety Goals and conducted root cause analysis and failure-mode analysis to address system issues related to patient safety. A graduate of the University of Nebraska with a degree in Nursing, Hoidal received her MPH degree from the University of Minnesota. She performed research on the relationship of personality characteristics to job performance and has published on nursing competency assessment.

### Catherine Mahern, JD

Catherine Mahern is an associate professor of law at Creighton University, where she is the Director of Clinic Programs and the holder of the Kearney Chair in Clinical Legal Education. Her work focuses on legal education and the acquisition of lawyering skills. Professor Mahern has served on several committees on the improvement of justice and access to the profession, including the Nebraska Supreme Court's Implementation Committee on Pro Se Litigation and the Minority and Justice Implementation Committee.

### Robert J. McQuillan, MD—In Memoriam

Dr. McQuillan was an associate professor and chair, Department of Anesthesiology at the Creighton University Medical Center and Creighton University School of Medicine. Dr. McQuillan completed his Doctor of Medicine at Creighton University and his anesthesiology residency with a fellowship in pain medicine at the University of Missouri–Kansas City/St. Luke's Hospital. He provided strong interprofessional leadership to bring crew resource management techniques, including the Agency for Healthcare Research and Quality TeamSTEPPS program, into the operating room and presurgical and postsurgical care models. He conducted his work at Creighton University Medical Center and nationally, leading interdisciplinary education and research on the implementation and evaluation of the effectiveness of this approach to patient safety. He continuously studied human factors science with a goal of improving patient safety, motivated to care for those patients who received his services in the operating room. Dr. McQuillan was a founding faculty member of the campus-wide interdisciplinary Foundations in

Patient Safety course at Creighton University. His sense of purpose, enthusiasm, and commitment to improving patient safety will be remembered among his colleagues and his patients.

### Keli Mu, PhD, OTR/L

Keli Mu is an associate professor and vice chair of Occupational Therapy in the School of Pharmacy and Health Professions at Creighton University. Dr. Mu's research interests include occupational therapy and physical therapy practice errors and patient safety, program evaluation, evidence-based practice, and issues related to professional education. Dr. Mu has led or coled several research projects focusing on practice errors and patient safety. In 2004, he received the James S. Todd Memorial Award from the National Patient Safety Foundation for his patient safety research. As one of the coauthors for this book, he has taught in the campus-wide interprofessional patient safety course at Creighton University. Dr. Mu is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

### Karen A. Paschal, PT, DPT, MS

Karen Paschal is an associate professor in the Department of Physical Therapy and a faculty member of the Creighton Center for Health Services Research and Patient Safety at Creighton University. Her research focuses on the adoption and use of health information technology across the healthcare delivery system. She serves on the Nebraska eHealth Council Health Information Security and Privacy Work Group and cochairs the education subcommittee. As chair of the physical therapy curriculum committee, she served on the Office of Interprofessional Education Advisory Committee and was a member of the Task Force on Patient Safety Curriculum responsible for designing, implementing, and evaluating a campus-wide course on patient safety. She has served as a consultant to educational programs in the area of curriculum development and assessment and serves on the Commission on Accreditation in Physical Therapy Education. Dr. Paschal is a Patient Safety Expert Panel Reviewer for the Creighton Center for Health Services Research and Patient Safety, Patient Safety Organization.

### Ann M. Rule, PharmD

During the manuscript preparation, Ann Rule was a clinical assistant professor of Pharmacy Practice, School of Pharmacy and Health Professions, and Research Fellow at the Creighton University Center for Health Services Research and Patient Safety. Her prior experience includes 30 years of pharmacy practice in

a variety of settings. During her fellowship, she was involved with Dr. Galt's grant with the Agency for Health Research and Quality on medication safety. This project involved the management of a field research study of 80 physicians in 32 office-based practices to determine the impact of PDA hand-held technologies on medication errors in prescribing. Dr. Rule was a member of Creighton's interprofessional task force on patient safety curriculum development and helped teach the interdisciplinary patient safety course. Dr. Rule is currently Director, Medical Liaison at Purdue Pharma L.P. and is based in Newark, Delaware.

**Linda S. Scheirton, PhD**

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