THE VALUE OF A PHARMACIST AS AN EXPERT WITNESS

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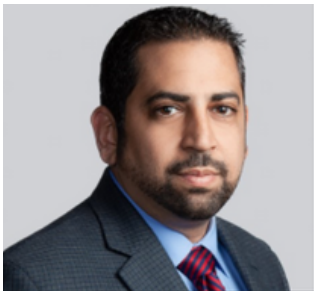
INCLUDING A PHARMACIST AS YOUR MEDICATION THERAPY MANAGEMENT EXPERT IN A CASE CAN PROVIDE IMMENSE VALUE AND PERSPECTIVE TO CASES INVOLVING THERAPIES PROVIDED IN HOSPITALS, CLINICS, NURSING HOMES, AND COMMUNITY PHARMACIES.

A well-known expert hiding in plain sight, pharmacists can be a crucial addition to your practice.



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Medication errors are the most common and preventable cause of patient injury. These errors typically involve administering the wrong drug or dose, using the wrong route, administering it incorrectly, or giving medication to the wrong patient. Each year in the United States, nearly seven billion prescription medications are dispensed. Preventable adverse events lead to an estimated 44,000 to 98,000 hospital deaths annually, surpassing the number of deaths attributed to motor vehicle accidents. The reported incidence of medication errors in acute hospitals is approximately 6.5 per 100 admissions. In addition, approximately 20% of all skilled nursing facility residents–about 300,000 people every week–receive some form of antipsychotic medication, while only about two percent had qualifying conditions for such drugs.

MEDICATION ERROR STATISTICS

Medication errors can occur at any time during the treatment process in any setting–hospitals, clinics, nursing homes, retail and mail order pharmacies–and are defined as any avoidable event in prescribing, transcribing, dispensing, administering, or monitoring, regardless of the occurrence of injury or potential injury; such events can result from human errors or system defects. If an error harms a patient, it becomes an adverse drug event (ADE). Table 1 highlights the types and causes of medication-related errors.

TABLE 1: REASONS FOR ERRORS RELATED TO MEDICATIONS

POTENTIAL AREAS WHERE MEDICATION ERRORS MAY OCCUR	SYSTEM FAILURES	TYPES OF MEDICATION ERRORS	COMMON CAUSES OF MEDICATION ERRORS
Ordering and prescribing Documenting Transcribing Dispensing Administering Monitoring	Inaccurate order transcription Drug knowledge Failing to obtain an allergy history Incomplete order checking Mistaking in the tracking of medication orders Poor interprofessional communication Unavailable or inaccurate patient information	Prescribing Omission Wrong time Unauthorized Improper dose Wrong dose prescription or wrong dose preparation Administration errors such as incorrect route of administration, administering the drug to the wrong patient, extra dose, or wrong rate Monitoring errors such as failing to take into account the patient's liver and renal function, failing to document allergy or potential for drug interaction Compliance errors such as not following protocol or rules established for dispensing and prescribing medications	Expired Product Incorrect Duration Incorrect Preparation Incorrect Strength Incorrect Rate Incorrect Timing Incorrect Dosage Form Incorrect Patient Action Know Allergen Known Contraindication Distractions Distortions Illegible Writing

SCOPE OF PRACTICE/MEDICATION PRESCRIBING SCOPE

The term scope of practice (SOP) refers to the limits of a health professional's 'knowledge, skills and experience' and reflects all tasks and activities they undertake within the context of their professional role. It is important for health professionals to be aware of their own individual SOP, as well as the broader SOP for their discipline, to ensure they are practicing 'safely, lawfully and effectively' and that their skill development and growth are in keeping with the expectations for their profession. SOP is also an important concept for health regulators, leaders, and managers and has long been central to system-level health workforce reform.

Pharmacists are considered medical or healthcare professionals, particularly within the field of pharmacy, and are often referred to as healthcare providers themselves. State law dictates the scope of practice for each medical and pharmacy professional.

Pharmacists are Doctors of Pharmacy, i.e., they have a terminal degree. Their coursework and training place emphasis on the medical and pharmacological management of diseases, the optimization of therapies, and the judicious use of treatment.

The scope of practice for pharmacists ranges from simply dispensing to being an integral member of the integrated health care team to being an "advanced" pharmacist/having a prescribing practice, which is commonly seen in the U.S. Department of Veterans Affairs (VA) hospitals, and several states. Versatile, knowledgeable, and approachable, pharmacists, particularly those with advanced training and certifications, improve patient outcomes by bridging the gap between physicians and patients. Pharmacists' specific training in medication therapy management (MTM) provides them with an ability unique in the medical world, allowing them to be the singular expert in all things medication and therapy related across all fields of medicine.

Pharmacists guide therapies from all areas of medicine, including cancer, nutrition, diabetes, cardiology, surgery, and transplant. They also conduct pharmacogenomic testing and manage/optimize therapies based on a patient's genetics.

AREAS OF PHARMACISTS' EXPERTISE

Acid Reflux (GERD)

Adverse Drug Reactions Anticoagulation (e.g., Heparin, Lovenox, Coumadin)

Anti-Psychotics

CBD/THC

Claim Reviews

Clinical Negligence

Clinical Research

Compounding

Controlled Substances

Dietary Supplements

Driving Under the Influence of Drugs

Drug Dispensing

Drug Dose Calculations and Verification

Drug Effects/Reactions

Drug Infusions and Intravenous (IV)

Medications

Drug Interactions and Drug Contraindications

Drug Labeling

Drug Monitoring and Levels

Drug Preparation

Drug Safety

Drug-Drug Interactions

Drug-Induced Lung Diseases

Geriatrics

Hospital Pharmacy

Infectious Diseases

Insurance Claims Analysis

Life / Health Claims

Malpractice (Pharmaceuticals)

Medical & Health

Medical Chart Review

Medical Utilization Review

Medicare/Medicaid Fraud & Abuse

Medication Administration

Medication Use, Side Effects, and Errors

Over The Counter Medications (OTC)

Pain Management

Pharmaceutical Negligence and Fraud

Pharmacists

Pharmacology

Pharmacy Practice

Prescribing Errors

Prescriptions

Professional Liability Medical Insurance

Psychopharmacology

Psychotropic Pharmaceuticals

Pulmonary Medicine

Regulatory Affairs and Pharmacy Law

Respiratory Therapy

Retail (Community) Pharmacy

Standards of Care (Pharmacy)

Supplements

Teaching and Training

Total Parenteral Nutrition (TPN)

Vaccinations

On medical teams, pharmacists supplement the physicians'/prescribers' overall management of patients by providing a deep and comprehensive approach to the usage of clinical medication therapies (pharmacotherapies), the management of those therapies' side effects, the optimal and strategic use of those therapies, the monitoring and adjusting of regimens, and the teaching, training, and education to the medical team on the judicious use of medicines. Figure 1 illustrates the clinical overlap between physicians and pharmacists.

FIGURE 1: PHARMACISTS' AND PHYSICIANS' SCOPE OF PRACTICE AND CLINICAL OVERLAP

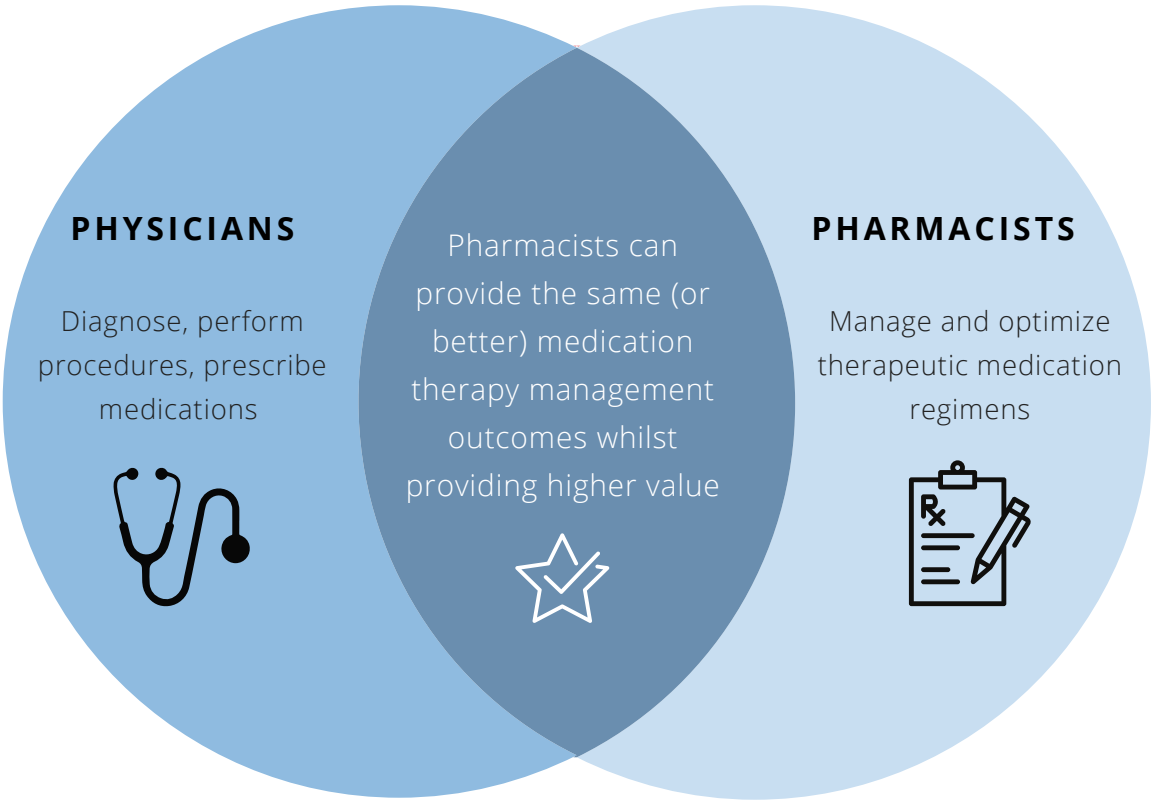

TABLE 2: LIST OF MOST COMMON CLINICIANS AND THEIR RESPECTIVE CLINICAL RESPONSIBILITIES

CLINICIAN	DEGREE	RESPONSIBILITIES
Physician	MD, DO	Overall management of patient, diagnosis, and procedures
Nurse Practitioner	ARNP	Overall management of patient, diagnosis, and procedures, usually under the guidance of a physician
Nurse	RN, BSN	Administration of medications and day-to-day patient management
Pharmacist	PharmD, RPh	Medication regimen management and optimization, clinical training, drug-drug, drug-disease, and drug-allergy management

Pharmacists are responsible for medications (clinical medication therapies) dispensed in all medical settings–Hospitals/Medical centers, clinics, community (retail) pharmacies, mail order pharmacies, and outpatient centers. They review drug-drug interactions, drug-disease interactions, allergy validation and management, and medication regimen optimization (right drug, right route, right dose, right time, right frequency, right duration, and side effect mitigation and management). Therapies span across all clinical specialties for acute and chronic illnesses: Oncology medication and side effect management, intensive care units, internal medicine/diabetes management, cardiology/anticoagulation management, solid organ transplant/organ rejection management, pain management/addiction, infectious diseases/HIV.

Pharmacists bring to the legal arena unparalleled knowledge and insight regarding medications and their use (clinical medication therapies). They are also integral in reviewing medication and prescribing errors, morbidity and mortality conferences, medical chart reviews, education and training, and pharmacy standard of care.

Dr. Edward Grace, PharmD, FASCP, BCGP, BCIDP

Dr. Edward Grace is an infectious diseases (ID) clinical pharmacist and a graduate of the University of Florida College of Pharmacy. He is currently board-certified in ID and as an HIV pharmacist while serving as a fellow of the Infectious Diseases Society of America (IDSA). He completed his residency at Bay Pines Veterans Healthcare System, where he subsequently served as the clinical ID pharmacist, PGY-2 ID residency program director, and co-director of the antimicrobial stewardship program. He later served as an associate professor of pharmacy practice in infectious diseases at Presbyterian College and Notre Dame of Maryland University schools of Pharmacy.

In 2017, Dr. Grace established the first antimicrobial stewardship consulting firm for long-term care facilities, where he served as the lead consultant servicing the Southeastern US. He had the honor of being elected as the chair of the American College of Clinical Pharmacy's HIV Publication and Research Network (ACCP HIV-PRN) from 2017-2018.

Currently, Dr. Grace experience in specialty pharmacy comes from his previous practice in a clinic based integrated specialty pharmacy where he served as both a member of the specialty pharmacy team and the infectious diseases clinic where he managed patients with HIV/AIDS, Hepatitis B, Hepatitis C, Nontuberculous mycobacteria (NTM), and fungal infections, in addition to assisting in the management of patients which required outpatient parenteral antimicrobial therapy (OPAT).

Dr. Nicholas Ladikos, PharmD, FASCP, BCPS, BCGP, BCIDP

Dr. Nicholas Ladikos started and ran several businesses and has held senior leadership positions at a number of healthcare organizations. He developed and led programs that helped stakeholders use and advance medication management tools (e.g., formularies, pharmacy, and therapeutics committees, and medication therapy management), quality metrics, research methodologies, and health information technology. He is the founder and clinical director of MedOp Advisors, a concierge medication, nutrition, and wellness advisory company, as well as a Clinical Assistant Professor at Texas Tech University and Adjunct Professor at Arizona College of Nursing. He has co-authored numerous papers in his areas of research, including infectious diseases and antimicrobial stewardship, pharmacoeconomics, pharmacogenomics, and therapies in the lung transplant and geriatric populations. He has started and operationalized system-level programs at the Johns Hopkins Hospital and the National Institutes of Health (NIH).

He has experience in medication utilization statistical analyses to demonstrate adherence to evidence-based practice guidelines and inform health program policies. He examines pharmacoeconomic trends and strives to ensure a cost-effective pharmacy benefit is administered to members, as well as consults with the care management team to provide guidance regarding member goals. He also conducts physician training and staff education regarding medication trends/utilization, identification and mitigation for potential medication fraud, waste, and abuse, and collaborates in disease management/population health programs.

He is active as a subject matter expert, working with a number of law firms as an expert witness.

In addition to receiving his LEAN/Six Sigma Certification and his Doctor of Pharmacy degree, Dr. Ladikos holds degrees in finance, international business, business administration, and biochemistry. His other experiences include statewide non-profit economic development and business intelligence, adjunct professor of technology and time management, finance, banking, and corporate development liaison to NASA.

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