

The Integration of Artificial Intelligence in Modern Pharmacy Practice

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DESCRIPTION

Pharmacy is a crucial field in healthcare that focuses on the preparation, dispensing, and appropriate use of medications. It serves as a bridge between medical science and patient care, ensuring that individuals receive the right medicines in the correct dosages and with appropriate guidance. Over time, the role of pharmacists has evolved significantly from simply dispensing medications to providing patient-centred services, including counselling, medication management, and health promotion. The history of pharmacy dates back to ancient civilizations. Early records indicate that medicines were used in Mesopotamia, Egypt, China, and India as far back as 2600 BCE. Ancient Egyptian texts such as the Ebers Papyrus contained extensive medicinal formulations. Greek and Roman contributions to pharmacy, particularly by figures like **Hippocrates and Galen, laid the foundation for modern pharmaceutical practices. During the Middle Ages, the profession further developed through apothecaries, which were precursors to modern pharmacies. With the Renaissance and Scientific Revolution, significant advancements in chemistry and medicine shaped the field. The Industrial Revolution brought large-scale pharmaceutical manufacturing, making medicines more widely available. Today, pharmacy is a highly specialized and regulated profession integrated into healthcare systems worldwide. Pharmacy is a diverse field with various branches catering to different aspects of healthcare and medicine production. Some of the major branches include. Community pharmacies, also known as retail pharmacies, are the most common form of pharmacies where pharmacists dispense prescription and over-the-counter medications. Pharmacists here also provide medication counselling, health screenings, and vaccination services. Hospital pharmacists work within healthcare institutions, collaborating with doctors and nurses to ensure patients receive the most effective

medications. They are responsible for managing drug therapies, compounding sterile medications, and monitoring patient outcomes. Clinical pharmacists work directly with healthcare providers and patients to optimize medication therapy. They focus on disease management, medication reconciliation, and ensuring drug efficacy and safety. Industrial pharmacists are involved in the research, development, manufacturing, and quality control of pharmaceutical products. They ensure that medications are produced according to strict regulatory guidelines and are safe for public use. Regulatory pharmacists work with government agencies and organizations such as the Food and Drug Administration (FDA) and the World Health Organization (WHO) to ensure that pharmaceutical products comply with laws and safety regulations. Compounding pharmacies create customized medications tailored to the needs of individual patients. This may include altering dosage forms, removing allergens, or preparing unique medication combinations. Nuclear pharmacy specializes in preparing and dispensing radioactive materials used for diagnostic imaging and treatment in nuclear medicine. Pharmacists play a vital role in the healthcare system. Their responsibilities extend beyond merely dispensing medications; they provide essential services that contribute to better patient outcomes. Pharmacists ensure that patients receive the correct medications in the appropriate dosages. They verify prescriptions, check for drug interactions, and provide guidance on proper usage.

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CONFLICT OF INTEREST

The author's declared that they have no conflict of interest.

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