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A New Prescription for the Future: Why Our Generation Must Build the AI-Powered Pharmacy

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Citation: Sammy Abdullah (2025) A New Prescription for the Future: Why Our Generation Must Build the AI-Powered Pharmacy, J Phar ma Drug Develop 12(1): 106

Letter to the Editor

To the Editor,

We tend to picture a pharmacy as familiar aisles and a waiting prescription counter. But for my generation of aspiring healthcare professionals, that image is shifting long before that. The future of medicine, particularly in critical areas like specialty pharmacy, is emerging as a dynamic, tech-intensive health innovation hub. Specialty pharmacy tackles complex treatments for cancer, multiple sclerosis, rare diseases and many others, and is poised for a major change. Over the next five to ten years, artificial intelligence (AI) and other technologies could elevate it from a vital service to a proactive, predictive and intimately personalized part of healthcare. Today's specialty pharmacists are already much more than dispensers; they are vital guides for our patients. But obstacles ranging from drug shortages to the challenges of operating complex treatment plans remind us that change is necessary. We're beginning to glimpse it in medication apps and digital records, but only a piece of the solution. The second step is creating a trusted partner for AI. Can you imagine that if there's a pharmacist who gets ahead and has a guess what a patient needs before a problem even occurs — this is that world? We've got some early examples, for example, AI tools predicting negative drug reactions. Smart algorithms might use data from health records and wearable devices in the near future to personalize interventions for each individual person. Think of AI as an assistant for every patient in their pocket, a simple chatbot that can answer each patient's questions and notify a human pharmacist otherwise. This is not a case of replacing people; it's freeing them for more human-centered care. For this to work, our generation also needs to care how to tackle the ethics of AI, making sure that these new tools are not used unfairly and available to everyone regardless of their background. The new high-tech future will be a collective one. AI will complement other recent breakthroughs to a considerable extent. Wearable devices might monitor patients in real-time. Blockchain could establish a secure, unbreakable record for medicines and thus combat fake drugs. Gene-editing therapies could provide one-time cures, making pharmacists genetic guides. Then, to prepare, we must evolve our training. Practicing complex procedures through virtual reality or learning alongside robotic systems that produce prescriptions precisely will be the new normal. Pharmacies could even create pills for each patient themselves, using 3D printers. This future, of course, won't come without its own challenges. We must confront data privacy issues and secure access for those great tools across rural and underserved landscapes — instead of only in urban centers with high tech. Technology does more than just process information, it'll never replace the human touch, the empathy, understanding and trust that are essential to healing. This is our call to action. For my generation of students, this is not a distant hope; this is the career that we are stepping into. It is our collective opportunity, the opportunity to be the leaders who are able to marry the most advanced of medical technologies and the most compassionate care. We will be the ones building a system at last where a child with a rare condition receives a cure that is tailor-made for them, or an elderly, chronically ill patient can safely continue their treatment from the comforts of home. The future of pharmacy will see thrilling blend between science, technology and human interaction. It is a challenge for our generation to start dreaming big, to learn 24/7 and to work for a healthier world. We are prepared to answer the call.

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