PRACTICE INSIGHTS

2021 DIGITALHEALTH.RX SUMMIT: THOUGHT LEADERS ASSEMBLY

APhA
American Pharmacists Association

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Contents

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Introduction

The rapid evolution of digital health technology is driving a revolution in the delivery of health care in the United States. Products and solutions ranging from health apps, telehealth, digital diagnostics, and digital therapeutics to robotics and machine learning using artificial intelligence (AI) to inform treatment algorithms are proliferating throughout the health care ecosystem. The adoption and uptake of these technologies was further accelerated during the COVID-19 pandemic due to widespread implementation of social distancing. Advances in remote patient monitoring are increasing opportunities to integrate data from patients' daily lives into the clinical care provided by pharmacists as well as the health care team more broadly.

The increasing availability and uptake of digital health technology has many important implications for pharmacists and the delivery of patient care that is informed by individualized data. To discuss opportunities, resources needed, and next steps we can take as individuals and institutions to successfully incorporate digital health products and solutions into both new and existing practice models, the American Pharmacists Association (APhA) convened a Thought Leaders Assembly on March 11, 2021, in conjunction with the inaugural DigitalHealth.Rx Summit. This review presents highlights from the presentations from the Thought Leaders Assembly, including those addressing policies for regulating digital health technology, integration of digital health in value-based models, the digital care transformation of pharmacy, medication optimization leveraging advanced technologies, pharmacist education and training, and strategies and collaborations for practice implementation.

DigitalHealth.Rx Summit Thought Leaders Assembly

Digital health is a rapidly growing and advancing field that is poised to transform the delivery of health care in the United States. To explore pressing issues, APhA convened a Thought Leaders Assembly in conjunction with the inaugural DigitalHealth.Rx Summit on March 11, 2021. The aim of the Thought Leaders Assembly was to consider the current health care landscape and discuss opportunities, resources needed, and next steps we can take as individuals and institutions to successfully transition to new pharmacy practice models in which digital health products and solutions are seamlessly integrated into the care pharmacists provide to improve access, efficiency, quality, and outcomes of care.

During the Thought Leaders Assembly, six topics were addressed as listed below representing some of the key elements that may guide and drive adoption of new approaches to care leveraging digital health technology. The speakers from the Thought Leaders Assembly are listed in Table 1.

The session format was designed for pairs of subject matter experts to deliver 10-minute presentations on each of the six topics. This report describes content shared during the presentations.

Table 1. ***Thought Leaders Assembly Presentations and Speakers***

Presentation	Speakers	
Policy and Regulatory Considerations	**Megan Coder, PharmD, MBA** Executive Director, Digital Therapeutics Alliances	
Value-Based Models: Digital Health Partnerships	**Yoona Kim, PharmD, PhD** Co-Founder and CEO Arine	**Steven Chen, PharmD, FASHP, FCSHP, FNAP** Associate Dean for Clinical Affairs William A. Heeres and Josephine A. Heeres Chair in Community Pharmacy Professor of Clinical Pharmacy University of Southern California School of Pharmacy
The Digital Care Transformation of Pharmacy	**David Berkowitz, BA, BSPharm, PharmD** Performance Center Field Consultant, Omnicell	
Medication Optimization Leveraging Advanced Technologies	**Adrijana Kekic, PharmD, BCACP, CTLC** Pharmacogenomics Pharmacist Mayo Clinic	**Komal Patel, PharmD** Clinical Lead Catalia Health
Pharmacist Education and Training: Preparing for Emerging Roles	**Lucinda Maine, PhD, RPh** EVP/CEO American Association of Colleges of Pharmacy	**Kevin Sneed, PharmD, FNAP, FNPHA** Senior Association VP and Dean University of South Florida Taneja College of Pharmacy
Practice Implementation: Strategies and Collaborations	**Sandra Leal, PharmD, MPH, CDCES, FAPhA** EVP, SinfoniaRx, A Tabula Rasa Health Care Solution	**Randy McDonough, PharmD, MS, BCGP, BCPS, FAPhA** Co-Owner and Director of Clinical Services Towncrest Pharmacies & Professor of Pharmacy Management and Innovation DPAS Loma Linda University School of Pharmacy

Policy and Regulatory Considerations

Regulatory agencies around the world have taken various approaches to review and approve digital therapeutics, a type of medical intervention delivered via software-based therapy. Dr. Megan Coder provided an overview of the digital health regulatory landscape, including a discussion of the work of the International Medical Device Regulators Forum (IMDRF), a voluntary group of medical device regulators. Dr. Coder highlighted IMDRF's Software as a Medical Device (SaMD) definition as "software intended to be used for one or more medical purposes that perform these purposes without being part of a hardware medical device." [IMDRF] This definition was developed by the IMDRF and is being implemented into regulatory frameworks worldwide.

Dr. Coder next reviewed the FDA Digital Health Center of Excellence's precertification pilot program for software devices that began in July 2017. This approach was utilized for software devices, because unlike drug products, which are not intended to change once they have been brought to market, software devices constantly undergo updates. Because software devices are intended to change over time, FDA's precertification pilot program focused on ensuring that digital health companies are taking appropriate steps to ensure safety, quality, efficacy, and a culture of excellence. The pilot was discontinued in September 2022.

FDA accelerated the authorization of SaMD products in response to the COVID-19 pandemic and released the following statement:

"In the context of the COVID-19 public health emergency, the use of digital health technologies, including software as a medical device or other digital therapeutics solutions, may improve mental health and well-being of patients with psychiatric conditions during periods of shelter-in-place, isolation, and quarantine. In addition, the use of such technologies has the potential to facilitate 'social distancing' by reducing patient contact with, and proximity to, health care providers, and can ease the burden on hospitals, other health care facilities, and health care professionals that are experiencing increased demand due to the COVID-19 public health emergency."

There are multiple pathways for approval of digital therapeutics in the United States. The majority of digital therapeutics undergo review by the FDA's Center for Devices and Radiological Health (CDRH), while some combination products undergo combined reviews by CDRH in addition to the Center for Drug Evaluation and Research (CDER) and the Center for Biologics Evaluation and Research.

There are also different types of device classification for SaMD. Most SaMD products are classified as 510(k) "cleared" devices, while some lower risk SaMD products be classified in the 510(k)-exempt category. In some instances, SaMD may not require FDA review. Dr. Coder stressed that it is important for clinicians to understand these different types of classifications when discussing digital health technology with patients.

Dr. Coder also discussed the United Kingdom's approach to regulation, which classifies digital therapeutics based on function and stratifies them based on evidence tiers. She concluded by reviewing the German approach, which allows digital health technologies to be marketed at a price point determined by the manufacturer after a review period of only 3 months. During this 3-month review period, the focus is on safety and efficacy. After the brief review period, over the course of the first year on market, real-world data related to efficacy, outcomes, and cost effectiveness must be collected. At the end of the first year on market, the German regulatory agency then assesses whether the product should remain on the market and whether the price point specified by the manufacturer is appropriate. If the device does not meet the regulatory agency's requirements at the 1-year time point, the device may be removed from the market. The regulatory landscape for digital health technology continues to evolve.

Optimizing Comprehensive Medication Management Through an AI-Enabled Health Care Information Platform

In the second segment of the Thought Leaders Assembly, Dr. Steven Chen and Dr. Yoona Kim reviewed the collaboration between the California Right Meds Collaborative and Arine, which was formed to empower pharmacists to improve patient outcomes by providing an AI-enabled platform aimed at helping pharmacists optimize Comprehensive Medication Management (CMM) patient interactions.

Dr. Chen described the path he took to initiate the California Right Meds Collaborative. His journey started with a successful Centers for Medicare and Medicaid Services Innovation Center (CMMI) Grant Proposal. He was able to leverage that work, along with support from the California Pharmacists Association, to meet the California Secretary of Health. The Secretary of Health suggested that Dr. Chen identify a Medicaid Managed Care Plan to partner with to start paying pharmacists for CMM services with the hope that additional payers would see the value and implement the practice. The result was the California Right Meds Collaborative, which created a network of pharmacies that offer CMM services to eligible patients in local communities.

The California Right Meds Collaborative was built around a series of aggressive and comprehensive pharmacist training programs focused on CMM best practices as well as the tools and resources needed to provide these services. Following a learning period, participants were expected to transition to an action period during which selected pharmacies initiated or scaled up their services. Throughout the action periods, Dr. Chen's team held weekly webinars, individual provider coaching sessions, and quality improvement scorecard reviews. All of this was designed to ensure that providers were helping patients achieve great results. Using this methodology, Dr. Chen and his team built a network of pharmacies who were able to deliver CMM services.

Patients eligible for the program were identified by health plans and stratified by risk. High-risk patients were assigned to a pharmacy based on their geographic location to receive CMM services.

Key ingredients to the success of the California Right Meds Collaborative included:

1. **Stringent processes and criteria for vetting pharmacies to include in the provider network.**

2. **Using data from the initial CMMI grant to build in a reimbursement model that reimburses pharmacies approximately $1,000 for each patient who is successfully managed, suggesting that this could be a financially sustainable model for pharmacy practice.**

3. **An aggressive quality improvement (QI) program.**

A desired, missing ingredient was a platform that would allow for seamless (and nonduplicative) clinical documentation as well as more real-time data analysis and continuous QI (CQI), which would eventually lead to real-time data-informed recommendations to support clinicians. This need led to the partnership with Dr. Kim and Arine.

The Arine Virtual Pharmacist Platform was created to address the costs associated with medication mismanagement. According to Dr. Kim, "the single most important lever to pull to improve quality of care and reduce cost of care is medication—getting the medications right." She cited research that found that $1 out of every $6 spent on health care is wasted due to medication mismanagement, resulting in $528 billion in avoidable health care costs. [Watanabe]

Arine's platform analyzes multisource patient data at three levels:

1. **Population level: to identify care gaps and identify high-risk patients who are most likely to benefit from pharmacist interventions**

2. **Prescriber level: to review prescribing patterns to identify areas where clinicians might benefit from additional education**

3. **Patient level: to help pharmacists identify and create personalized care plans**

The Arine platform has several features to support pharmacists who provide CMM services, automating processes, leveraging predictive analytics and machine learning algorithms including:

- **Aggregating and pre-populating data from a variety of inputs, reducing the time needed for data collection and documentation by pharmacists**
- **Utilizing data to provide recommendations for potential interventions for pharmacists to consider**
- **Suggesting personalized tailored questions, which can help clinicians to identify and address patient barriers to achieving desired health outcomes, whether those barriers are related to social determinants of health, adverse events, or incomplete understanding of medications**
- **Incorporating customized algorithms to address social and behavioral aspects of care for each individual patient**
- **Utilizing multiple inputs to assist with the dissemination of these personalized care plans, seamlessly integrating communication of care plans to both patients and providers**
- **Performing ongoing outcomes measurements, allowing for enhanced CQI processes, and ultimately improved outcomes and reduced health care costs for both patients and payers as the platform is deployed at scale**

The Digital Care Transformation of Pharmacy

Dr. David Berkowitz shared a vision for a plausible future model of pharmacy practice that includes the use of AI to help pharmacists care for patients along with the entire health care team using patient relationship management software. This digital care transformation of pharmacy will require integrating pharmacy and pharmacists' services with the national HIT infrastructure, allowing for enhanced care of large patient populations. Furthermore, AI that is used to facilitate patient care requires quality data that is accurate, complete, consistent, timely, reliable, valuable, and interpretable.

Dr. Berkowitz emphasized that in order for data platforms to be interoperable, high-quality data is essential. Additionally, data must be machine-readable (i.e., created in a format that can automatically be read and processed by a computer). For example, humans can read 140/80 mm Hg and, from context, interpret that this patient has a systolic BP of 140 mm Hg. Computers cannot make this inference. Instead, to be machine-readable, each element of data needs to be presented separately (Figure 1).

Scalable AI models with standards that are integrated and embraced will allow for automating more pharmacy care, allowing pharmacists to focus on clinical decision-making. Numerous data standards already exist, including RxNorm codes for medications, CPT codes for procedures, SNOMED CT codes for clinical terms, LOINC codes for laboratory values, and ICD-10 codes for diagnoses. In the context of data intelligence, these codes empower the collection of quality data so that it can be utilized by AI.

A future with cloud-based patient relationship management could provide a unified patient-centric view that is customized based on patients' individual preferences, thereby improving the patient experience interacting with the health care system.

In the current health care system, high-cost, physician-dependent care models burden health care delivery.

Figure 1: ***Data Organization Allows for Intelligent Solutions***

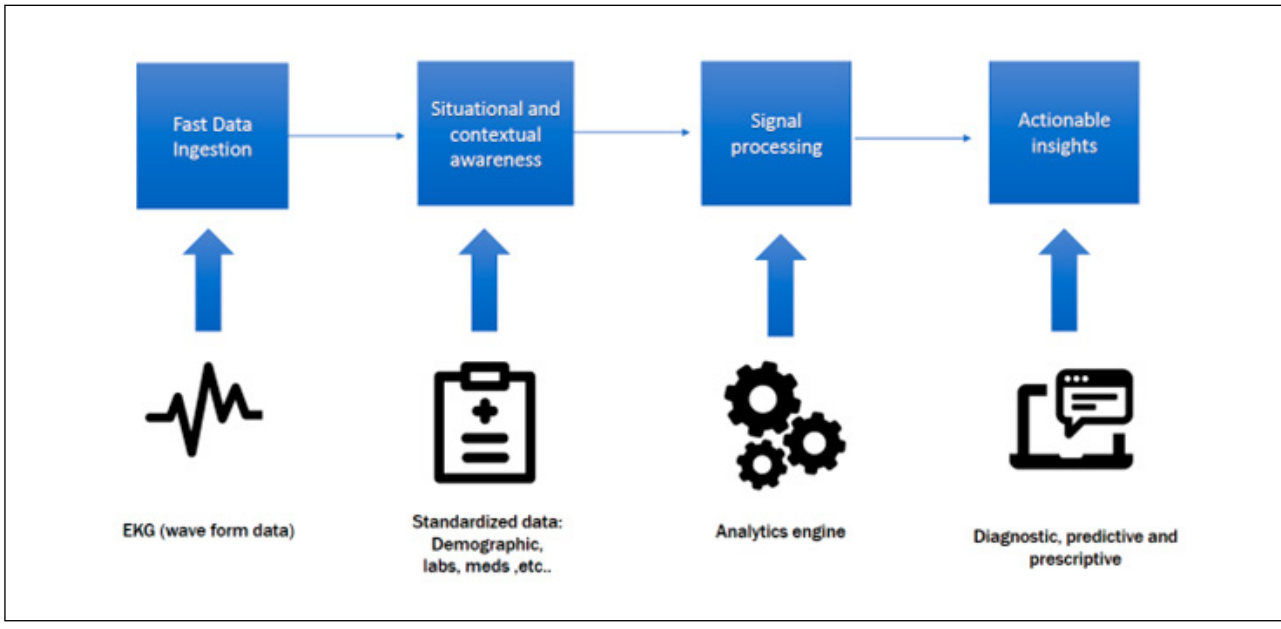


Figure 2: ***Steps to Integrate Digital Health Into a Clinical Pharmacy Workflow***

According to Dr. Berkowitz, the aim for the digital care transformation is to build care models around expert-developed algorithms, personalized patient profiles, and fundamental workflow redesign as part of a care plan that is executed through lower-cost, nonlicensed care navigators. Patient navigators would be available to support patients with tasks that do not require clinical judgment and could act as a point person to help patients interface with the health care system. These individuals could help ensure that patients are treated at the right site of care and could improve chronic care management.

To achieve this goal, digital solutions should implement high-touch and scalable care delivery programs that provide an intelligence layer to drive the right interventions to the right patient at the right time. The resulting digitally enabled workflow transformation would allow consistent improvement in data gathering and the ability to monitor care at a lower cost as a part of an ongoing, dynamic learning health care system (Figure 2).

Dr. Berkowitz shared an example of an entirely remote, nonphysician-led hypertension management program. In this program, an automated evidence-based clinical algorithm was developed by clinical experts to be administered by nonlicensed patient navigators. Patients with hypertension were enrolled and given a Bluetooth-enabled device to measure their BP. These devices transmitted home BP readings automatically into the patient's electronic medical record. Medication titrations were performed telephonically at biweekly intervals. Of the patients who enrolled in the program, 81% achieved their BP goal in an average of 7 weeks; the number of patients achieving goals increased to 91% among those who regularly measured their home BP. [Fisher]

The pharmacist eCare plan initiative (www.ecareplaninitiative.com) is an interoperable standard to allow pharmacists to have a common documentation method, including patient goals, health concerns, active medication lists, drug therapy problems, laboratory results, vitals, and payer and billing information. Dr. Berkowitz explained that this initiative is an emerging program built on FHIR that could be leveraged to deliver AI quality solutions at scale. Finally, the implementation of such programs will require the expansion of "flip the pharmacy" models, in which pharmacists shift away from dispensing actions to focus more on longitudinal chronic care management.

Medication Optimization Leveraging Advanced Technologies

Dr. Adrijana Kekic and Dr. Komal Patel discussed the use of technology to provide data-driven insights in clinical practice that lead to optimization of medication treatment plans. Medication optimization includes patient-centered activities to improve health outcomes by addressing safe and effective mediation use and access.

Dr. Kekic described digital health as the convergence of digital technologies with health care to enhance efficiency and personalize delivery of care. She emphasized the need to individualize medication regimens and cited data showing that the most common medication classes, including antidepressants, asthma drugs, and diabetes drugs are not effective in 4 out of 10 patients who use them. [Spear] Another analysis found that adverse drug events are the fourth to sixth leading cause of death in the United States. [Lazarou] Pharmacogenomics (PGx) is an important tool of precision medicine, which predicts drug safety and efficacy more precisely based on genomic information.

Dr. Kekic described her experiences utilizing PGx information to better predict a person's drug response phenotype and integrate it with other patient-specific factors, including nongenetic factors (i.e., age, organ function, presence of other medications, social determinants of health). Dr. Kekic explained that integrating genetic and nongenetic information helps guide treatment selection and personalizes medication therapy outcomes. PGx testing helps predict which patients are at increased risk of drug-induced hypersensitivity reactions, toxicity, and lack of efficacy. All of these can increase risk of adherence issues. Furthermore, PGx is evolving into "pharmaco-omics," which includes layers of patient-specific data (microbiome, epigenomics, transcriptomics, proteomics, metabolomics) added to patient genomic data.

Technology is needed to efficiently integrate and apply these sets of data to patient care. One example of the use of AI to utilize this information is the Mayo Clinic program for treating major depressive disorder. This AI program uses an algorithm that combines metabolomics with PGx to individualize treatment and help physicians select an antidepressant with the highest likelihood of treatment success. Dr. Kekic summarized that the program began by applying single drug–gene data and has progressed to integrating other precision data sets. This ability to predict individual responses to drugs based on phenotype is a paradigm shift that streamlines prescribing and reduces costs associated with treatment failures.

Dr. Patel also shared selected industry insights on consumer trends in digital health from the March 2020 Rock Health Digital Health Consumer Adoption Report. [Rock Health] This report indicated a steady increase in the rates of consumers wearing digital health tracking devices over the past few years, with a notable acceleration between 2019 and 2020 (Figure 3). Wearable digital health trackers generate vast amounts of new data that have numerous potential applications. In pharmacy practice settings, there is an opportunity to leverage this data to provide additional insights about patients' daily lives and responses to treatments. Dr. Patel noted that

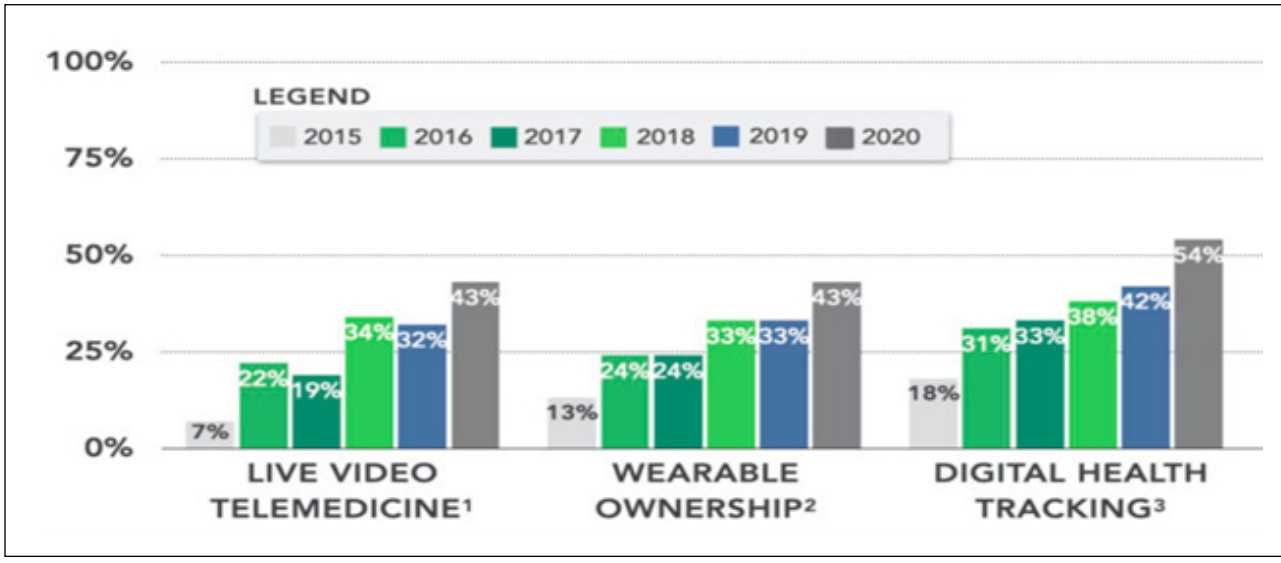
data from connected devices (e.g., fitness monitors, BP machines, and connected weight scales), coupled with patient-reported outcomes data from different types of digital health solutions, can be leveraged to optimize medication therapy. She reported that this opportunity will continue to grow as the wearables sector is predicted to become a $150 billion market by 2027. [IDTechEx]

Data ownership is an important issue that may impact the ability to integrate data from wearable devices. The Rock Health report found that consumers were most willing to share their health data with physicians (72%), followed by health insurers (53%), and pharmacy (46%). Dr. Patel suggested that the lower rate for pharmacy may be an indicator that consumers lack awareness of pharmacy's capabilities to leverage health data to optimize health outcomes.

Digital health technologies that integrate relevant data from sensors to help optimize medication management are currently available. Dr. Patel described the Catalia Health virtual care platform, which supports chronic disease care management leveraging conversational AI through a robot interface to create lasting patient engagement. The robot or digital companion Mabu coaches patients on their care plans, asks patients questions about how they are feeling and what types of challenges they need help with, collects data on social determinants of health, and collects physiologic data through connected sensor products. All these data are shared with care teams to support clinical decision-making to tailor and optimize patient care.

Kaiser Permanente has used the Catalia Health platform for management of fluid retention in patients with heart failure who use diuretics. For example, if a patient gains weight, the program uses algorithmic models to ask the patient specific questions via conversational AI to gain contextual data to correlate with data from connected weight scales. This information can help care teams tailor the treatment plan to the individual.

Figure 3: ***Adoption of Digital Health Tools 2015–2020***



Pharmacist Education and Training—Preparing for Emerging Roles

Health care workforce development that incorporates technology advancements is needed to support optimization of medication use and more widespread transformation of health care delivery. Dr. Kevin Sneed and Dr. Lucinda Maine discussed innovative programs as well as the current status of digital education at schools and colleges of pharmacy to prepare students for the workforce of the future.

Dr. Sneed stressed technology advancements must be deeply ingrained throughout pharmacy education to prepare graduates to utilize technologies in practice that will optimize medications. However, Dr. Sneed reported that many currently available clinical practice experiences have not yet undergone a digital transformation. To address this gap, his school created a futuristic pharmacy in the campus ambulatory surgical center to include digital health stations such as mHealth and pharmacogenomics to support the integration of informatics and personalized medication counseling. This training center incorporates a data platform that teaches students how to utilize wearable data in their daily practices. Ultimately, this pharmacy immerses students in a digital learning experience to prepare them for the future pharmacy workforce.

Dr. Sneed's pharmacy school has also developed an Entrepreneurial Academy in partnership with the college of business. There has been high student demand for this program, and it is now led by a full-time faculty member. Furthermore, this program supported the creation of a student organization called ITEHC (Innovation Technology & Entrepreneurship in Healthcare), which is designed to unlock imagination and creativity to support the digital transformation.

Finally, Dr. Sneed called for digital health companies to share their products with schools and colleges of pharmacy so that students can be prepared and ready to utilize the technologies once they graduate.

Dr. Maine reported that there is currently a deficit in formal digital health education for health care professionals including pharmacists. According to results from a survey of academics, practitioners, and students from 91 countries on digital education in pharmacy shared by the International Pharmaceutical Federation (FIP) in 2021, there are key deficits in digital health education. Of 260 respondents to this survey, only 5% reported that digital health is presented as a stand-alone course, 34% said it is integrated into existing courses, and 57% said that there is no digital health education available in their pharmacy program. [FIP]

Furthermore, there is little information or research on evaluating the competencies addressing the educational needs to navigate the digital health space in the future for current and future learners. There are no best practices for regrading what should be taught regarding digital health, and there is a lack of trained academics to provide education. Dr. Maine indicated that the American Association of Colleges of Pharmacy (AACP) was working to incorporate digital health into their accreditation standards for pharmacy education which serves asthe target toward which the evolving pharmacy curriculum should be aimed. In November 2022, digital health was included under the Domain 1, Knowledge Educational Outcome, in the Curricular Outcomes and Entrustable Professional Activities (COEPA), which was formerly known as the Center for the Advancement of Pharmacy Education (CAPE) Educational Outcomes.

Dr. Maine reported additional results from the FIP survey on pharmacy education related to the competency, "patient-centered digital health provision and knowledge of digital health tools." A majority of respondents indicated that topics that were covered included

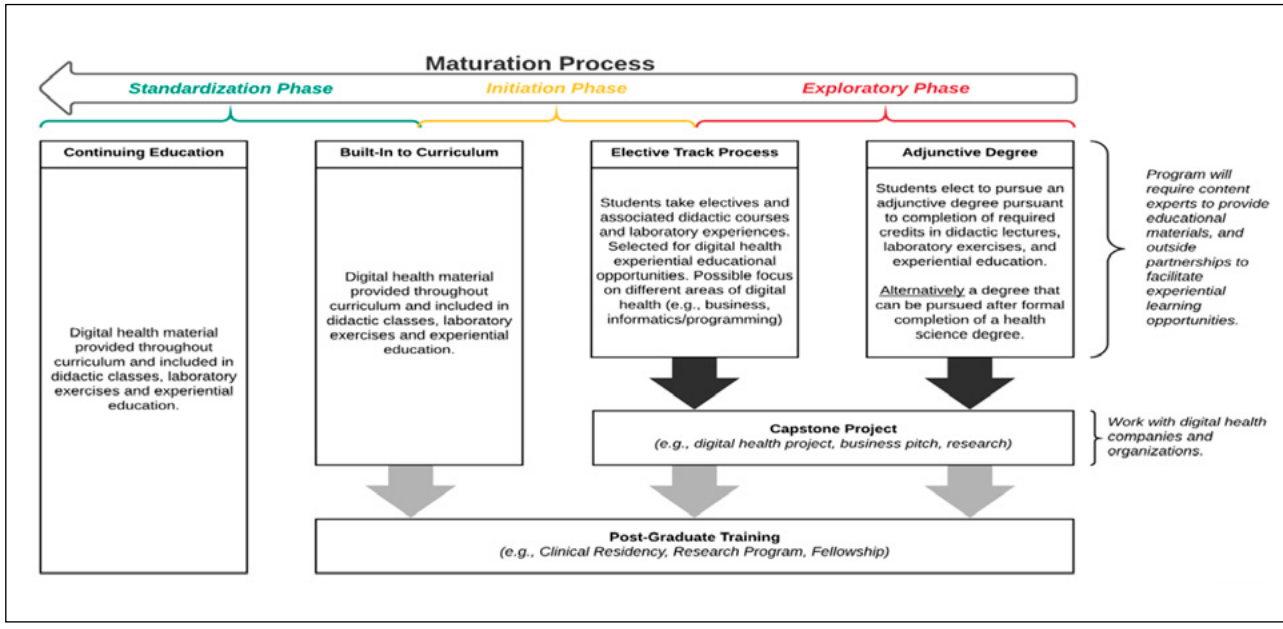
mobile applications, EHRs, and online/remote patient counseling. Topics that are related to a digital transformation of health care were less likely to be addressed, including remote patient monitoring (29%), consumer/medical wearable technology (19%), and digital therapeutics (18%).

A progressive maturation process for making digital health a component of education and continuing professional development was shared by Dr. Maine (Figure 4).

This process calls for digital health material to be provided through the curriculum and included in didactic classes, laboratory exercises, and experiential education. It also incorporates digital health electives and experiential educational opportunities.

Importantly, these programs will require content experts to provide educational materials and outside partnerships to facilitate experiential learning opportunities. Furthermore, the resources needed to support digital health education for health care providers is expensive. To address the need for resources, Dr. Maine called for corporate partnerships and public–private partnerships to support the integration of digital health education into schools and colleges of pharmacy to enhance learning and faculty development. She further noted that well-trained graduates will be better prepared to support digital health initiatives in their future workplaces.

Figure 4: ***Adoption of Digital Health Tools 2015–2020***



Practice Implementation Strategies and Collaborations

Dr. Randy McDonough and Dr. Sandra Leal highlighted examples demonstrating how technology can be leveraged to transform community-based pharmacy practice to optimize medication management for patients.

Dr. McDonough discussed the importance of technology in the Flip the Pharmacy program (www.flipthepharmacy.com), which is an initiative that identifies best practices for community pharmacy workflows that promote the delivery of enhanced clinical services and works with pharmacies to support adoption of these practices. More than 900 community pharmacies in the United States are currently enrolled in this initiative. Flip the Pharmacy has identified six separate domains for transformation:

1. **Leveraging the appointment-based model**
2. **Improving patient follow-up and monitoring**
3. **Developing new roles for non-pharmacist support staff**
4. **Optimizing the utilization of technology and eCare plans**
5. **Establishing working relationships with other care team members**
6. **Developing the business model and expressing value**

Dr. McDonough emphasized that while one of these domains explicitly identifies the importance of technology for transforming community pharmacy, almost all of these domains are dependent on technology for their implementation. For example, an appointment-based model relies on the use of technology to organize information and allow for real-time access to data so that interventions can be optimized during appointments. Similarly, developing collaborative working relationships with other providers requires information sharing, which is often conducted through technology-based platforms such as EHRs. Finally, business models are often dependent on demonstrating improved patient outcomes; technology is necessary for collecting and analyzing the data necessary to generate these metrics.

Although many pharmacies are having success with these strategies, challenges remain for fully leveraging the use of technology in the community pharmacy. For example, Dr. McDonough observed that providers are typically required to interface with multiple vendors that have unique digital platforms and EHRs, which complicates the documentation of clinical services as well as data management. Greater interoperability and integration of such systems is needed to improve efficiencies for pharmacies.

Many initiatives are underway that help to address challenges and improve efficiencies for pharmacy providers. For example, Dr. Leal described the Medwise Advisor tool (www.mymedwise.com), which utilizes technology to assess the risk of adverse drug reactions and partners with providers to provide medication safety reviews via both telehealth and hybrid models. In this program, patients have multiple touch points with technology:

- **They add clinical information to their own medical history.**
- **They use technology to monitor their medical conditions.**
- **Technology is used to assist with patient adherence to therapies.**
- **Consults with providers are delivered via telehealth/telepharmacy.**
- **Health care providers use technology to optimize the management of patients.**
- **The health care team uses technology to securely share and communicate patient clinical information with each other.**

The ultimate goal is to help patients achieve their therapeutic outcomes with safe and effective medications.

To demonstrate the value of such strategies, Dr. Leal shared outcomes from a study of continuous medication monitoring (CoMM) interventions. Over a 1-year period, nearly 2,500 patients received 16,986 CoMM interventions (an average of 6.8 interventions per patient), and pharmacists delivered an average of 3.0 patient counseling and education interventions and 3.4 drug therapy problem interventions per patient. The authors concluded that a CoMM model is effective for identifying and addressing medication use problems. [Goedken]

Dr. Leal indicated that an important component of value for this model is bringing solutions to local partners for issues such as regulation compliance, security, and risk, and outcomes tracking that are time-consuming and can be hard for individual providers to afford. Providing a scalable solution for addressing these issues is dependent on the use of technologies that support efficiencies. She noted that the Medwise Advisor program addresses such issues and has been proven effective at identifying and collaborating with partners to reach entire patient populations. This type of collaboration allows partners to leverage each other's strengths. For example, a centralized provider could deliver language support via technology solutions, while decentralized providers can provide services that must be delivered in-person, such as vaccinations. It also allows for centralized integration of payer information regarding various types of measures including process measures, surrogate outcomes (e.g., clinical measures such as A1C), and outcomes (e.g., per-member per-month costs). These data are essential for tracking quality measures and for risk stratification of patients to tailor interventions based on patient needs.

Dr. McDonough presented information regarding a community pharmacy–based program that provided significant savings and resulted in the payer developing new benefits incorporating pharmacy services. After 12 months of a community pharmacy–based CoMM intervention to proactively address medication issues for patients enrolled with a commercial insurer, per-member per-month total costs of care were significantly lower for enrolled patients and medication adherence was improved. No significant differences were found in the use of high-risk medications. [Doucette]

Dr. Leal emphasized that risk stratification is important for identifying and connecting hard-to-reach patients. Patients who have barriers to care due to social determinants of health are often difficult to reach but play an important role in determining payer performance on quality improvement metrics such as Medicare star ratings. As pharmacists demonstrate their ability to impact outcomes, especially among hard-to-reach patients, payers will increasingly include pharmacists in their care teams as part of the standard care provided to populations. Dr. Leal observed that evidence that demonstrates technology-based collaborations among pharmacists effectively provide care for hard-to-reach patients is helpful when communicating with payers and policymakers of the pharmacy profession's value.

Discussion

Rapid advances in health care and technology are creating a unique opportunity to transform the approach to delivering and receiving health care in the United States and beyond. The digital transformation that has touched many areas of our lives from entertainment and travel to shopping and banking has gained momentum in health care. Pharmacists in all practice settings will increasingly leverage digital health technology in prevention, management, and treatment optimization for acute and chronic diseases, and pharmacies will evolve to offer omnichannel access, a continuum of in-person and virtual care based on the type of service and patient preference.

The expertise of pharmacists in treatment optimization has been well-documented, -valued, and -integrated in a range of practice settings but has not yet become the universal norm. [McFarland] There are a range of contributing factors from state-by-state and institution-to-institution variance in pharmacist authority/scope, practice/workflow models, and payment/business models. The U.S. health care system has been more focused on sick care than health care. According to an analysis, non-optimized medication therapy costs $528.4 billion annually. [Watanabe]

We are now at an inflection point where pharmacists can take a leadership role, applying digital health technology to move away from the current unpredictable and episodic care model that yields rising costs to one that is proactive with continuous insights to optimize our approach to care and caring, ultimately improving health and economic outcomes. Numerous examples currently exist demonstrating how pharmacists can leverage relevant data to optimize treatment tailored to each patient's personalized needs. To catalyze next steps for the profession, pharmacists must actively seek to gain knowledge and skills in the application of digitally enabled care in the prevention, management, and treatment of disease across the health care ecosystem.

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