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Artificial Intelligence and the Future of Pharmacy



by Will Lockwood

Artificial intelligence (AI), or the ability for computers to process and learn from data to make accurate predictions, is shaping up to have a big impact on how we use technology. Here, we'll hear from Khoa Nguyen, Pharm.D., a clinical assistant professor in the department of pharmacotherapy and translational research at the University of Florida College of Pharmacy, on the path to AI implementation and the way it will make pharmacy more proactive. **story begins on pg. 13**

PLUS... Putting AI to Work*, pg. 19 Teresa Butler, D.Ph., owner of Rx Shoppe in Grove, Okla., has seen benefits in decision-making and workflow from the artificial intelligence brought to her pharmacy through DrFirst's SmartSuite.

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by Maggie Lockwood

Pharmacist Germaine Robinson, R.Ph., believes in the benefits of medication therapy management and compliance packaging, but felt she was still not hitting her performance measures. The difference came through the Medicine-On-Time Performance Program, which uses pharmacy data to target outliers in specific disease states.

9 What Is DSCSA and What Do Pharmacists Have to Do Today to Comply?

by J. Randall Hoggle, B.Pharm.,
D.Ph., M.B.A.

The Drug Supply Chain Security Act (DSCSA) has 10 requirements. Here the author reviews the five current requirements that pharmacists need to comply with today.

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By Peter Kounelis, R.Ph.

Your pharmacy's pharmacy services administrative organization (PSAO) should prioritize your valuable role in the community (and not just consider prescription volume). There are a few key attributes that should be evident if the organization has your best interests at heart. Here are the three priorities of the right contracting partner.

11 Points to Ponder

by Bruce Kneeland

Running a retail pharmacy is tough. But finding ways to build on your position in the community as a healthcare expert can open many doors to new and more profitable services. It has long been said that problems are merely opportunities in disguise. It's time to take the mask off some of your problems and take advantage of the opportunities they are hiding.

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Artificial Intelligence

ARTIFICIAL INTELLIGENCE, OR AI, has been garnering a lot of press on how it is being applied in healthcare. This is not without its challenges.

AI is a technology that uses computers to learn and make decisions. The engine behind AI is algorithms. These algorithms depend on data — plenty of data, and I should add, quality data — that is shoveled into computers. AI gives insight into vast amounts of data.

In healthcare the challenge is that data is largely unstructured, based on doctors' notes. This is what's termed language-based information. A March 25 article in *The Wall Street Journal* reported on how the Mayo Clinic is testing Google's Healthcare Natural Language API to turn this unstructured data into discrete fields that become structured data. This would improve the results of data searches.

But we are still in the learning stage. Evidence of this is the disappointing results of IBM's Watson, which was heralded as helping doctors diagnose, treat, and potentially cure cancer. IBM decided to bow out of this project. It was proving to be a bigger undertaking than anticipated, and the results did not measure up.

AI can help in diagnosing sepsis before it is too late. It can be used to predict who will be readmitted to the hospital within a specific number of days since discharge. And using access to social media, AI can gain better insights into adverse drug events.

What we have here is a picture of how technology is being deployed to assist in diagnosing, treating, and getting better patient outcomes.

What does all this mean to pharmacy? Pharmacy can be a data source on allergic reactions and adverse drug events. This will depend, however, on pharmacists documenting this information in their pharmacy management systems. As with electronic medical records, what is now captured is unstructured data. But as pointed out earlier, this limitation is being addressed.

There are a lot of technology companies investing in AI. These companies see a bright financial future in this technology. As a result, we are certain to see progress in machine learning as we move forward that is going play out well in reducing hospital admissions, getting better outcomes from drug therapy, and, in the end, increasing longevity.

The cover story in this issue takes a look at what is taking place with the deployment of AI in pharmacy. **CT**



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TRANSACTION DATA SYSTEMS (TDS) has named **Jody Buchman** as its senior VP of delivery and client advocacy. Buchman



will continue to advance the company's business methodology around client support and implementation, including the introduction of dedicated client success teams.

"I am honored to take on this new and challenging role with TDS, as I am a firm believer in client advocacy and holistic client support that's proactive, rather than reactive," she says.

"As the pharmacy market evolves, we are seeing higher levels of support necessitated across our client base and are investing in improving our end-to-end client support capabilities," says Jude Dieterman, CEO of TDS. "Our long history of partnering with independent community pharmacies to solve patient challenges will be stronger with Jody's vision and proven record of success."

Buchman brings more than 19 years of experience in the global healthcare industry to TDS. In her previous role as chief of client success at Cerner, she was responsible for forming the client success organization and establishing metrics by which to measure success and drive accountability. Buchman holds an M.B.A. with a concentration in information systems from the University of Colorado Denver.

DAA ENTERPRISES, INC. has been the recipient of the silver award from the New York-based, internationally recognized w3 Awards company, for the cloud version of Visual Superscript, citing it as an outstanding cloud-based application for pharmacy.

The company has also been nominated for the UX (User Experience) Design Award by the International Design Center in Berlin, Germany.

DRFIRST's SmartSuite for Pharmacy has received the prestigious Bronze Edison Award in the commercial technology, consumer safety category. This is in recognition of its innovative use of artificial intelligence (AI) to improve patient safety and pharmacy efficiency. SmartSuite for Pharmacy is an AI-powered solution that cross-links an electronic prescription from a provider's electronic health record to an actual product on the shelf at the receiving pharmacy. It also translates abbreviated medication directions to the specific short codes used by the pharmacy. SmartSuite also codifies allergy data for safety checks within the pharmacy workflow.

"Being recognized with an Edison Award is one of the highest accolades a company can receive for innovation in product development and business," says G. Cameron Deemer, president of DrFirst.

New York City pharmacy owner **Priyank "Pre" Patel** is finding automated communication tools are helping his Felicity Pharmacy do a better job in serving its patients. Patel points to the automated email and text messaging capabilities in his PrimeRx pharmacy management system from **MICRO MERCHANT SYSTEMS**. This capability provides an efficient way to send refill reminders and reminders that a prescription is ready for pickup; daily messaging reminding a patient when medications should be taken each day, including the time and dose of each medication; targeted messages to diabetes patients with information about testing and supplies offered at the pharmacy; and even birthday greetings.

Bruce F. Kneeland, B.A., of Prescott, Ariz., has been recognized by the **AMERICAN PHARMACISTS ASSOCIATION (APhA)** by conferring honorary membership in APhA for his career service



to supporting community pharmacy practice by providing business development, sales, marketing, project management, and public relations expertise.

Kneeland is a frequent contributor of articles in *ComputerTalk*. **CT**

COMING SOON

ComputerTalk's July/August Chain Market Report is our annual look at the technology used by chains, both national and regional, to increase prescription processing efficiency, improve patient care, and generate new revenue. We'll cover:

- Best technology investment ROI
- Technology priorities
- The challenges and opportunities owners face today

In September join the **American Society for Automation in Pharmacy (ASAP)** in Boston for its annual conference. This is the premier conference for the latest on issues in pharmacy and how technology is addressing these.

There will be plenty of time for networking and business meetings.

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Compliance Packaging A Game Changer



by Maggie Lockwood

WITH THE GOAL OF IMPLEMENTING medication therapy management (MTM) and compliance packaging at her pharmacy, Germ's Thrift Clinic in Opelousas, La., Germaine Robinson found leveraging compliance packaging from Medicine-On-Time with data in her EQuIPP (Electronic Quality Improvement Platform for Plans & Pharmacies) dashboard to be the combination she needed to run a five-star pharmacy on autopilot.

A pharmacist for 34 years, Robinson had seen the benefits of MTM and compliance packaging when she worked as a staff pharmacist at a large chain. When she bought her pharmacy in 2018, she knew she wanted to implement an MTM program from the get-go. She put the program in effect using Medicine-On-Time blister packs and has been happy that it allows her to manage the workflow in her small pharmacy, where she and one technician fill about 130 scripts per day.

Tracking the refills helps meet contract requirements with payers, who are grading the pharmacy's performance on refills as part of comprehensive medication review (CMR) and MTM documentation. But Robinson was still missing the mark on her performance scores and wanted to see improvement there, recapturing money lost to DIR (direct and indirect remuneration) fees. She talked to Medicine-On-Time, and was one of the first pharmacies to pilot the company's Performance program, run in partnership with Pharmacy First, which designs a pharmacy's workflows around quality measures to lower DIR fees and increase PBM (pharmacy benefit manager) performance payouts.

Robinson uses the data to develop strategies to enroll more



Germaine Robinson, R.Ph.
Germ's Thrift Clinic
Opelousas, La.

patients in her MTM program and improve medication-related performance. She started with a select group of 20 patients whom she thought would benefit from being enrolled in the compliance packaging program. In the first phase of the pilot, the study determined the compliance packaging on PDC (proportion of days covered) scores for low-performing patients — a compliance measure that calculates the ratio of number of days a patient is covered by the medication in a period to the total number of days in the period.

She focused on the RASA (renin-angiotensin system antagonists), cholesterol, and diabetes PDC outliers. Robinson noted that, for the most part, the pharmacy's outliers were listed in all three categories.

"What perfect candidates for packaging," she recalls thinking. "Keeping an eye on these monthly allowed me to catch new outliers. I would follow up with the new patients and talk to them to learn that in some instances, they were either discontinued on the medication in question or simply were not compliant. If compliance packaging wasn't in their interest, then definitely using med sync could help them get all of their meds at the same time, saving another trip to the pharmacy."

After three months, the PDC scores went up, from a percentage in the mid-60s to 90%. Another group was lingering around 70%, and that increased to 90% in six months.

Robinson is tracking her patients' scores regularly now, along

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feature: pharmacy performance

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with the 30-day supply blister cards. She has a monthly call with the patients, catching any changes in their medication regimen or missed refills. "I couldn't believe that the scores increased that much in six months," she says.

Medicine-On-Time also helped with reviewing and figuring out third-party payer DIR fee reports to help the pharmacy achieve these results. In the second phase of the pilot, Robinson saw the pharmacy's DIR fees go from the upper range of its contract to the lowest percentage allowed by the contract. The pilot also resulted in a 500% increase year over year from 2019 to 2020 in the CVS Caremark performance payout based on improved quality measures.

Robinson attributes the improvement in the pharmacy's performance measures to using specific reports out of EQuIPP, a platform with benchmarked performance data available to pharmacies. Robinson had been using EQuIPP but wasn't sure she was getting the most out of the data, and didn't realize it could support her MTM program.

With customer support from Pharmacy Quality Solutions which hosts the EQuIPP dashboard, Robinson began to see the way trimester reports could help her identify patients who weren't meeting quality measures, or the number of patients covered by a specific insurance plan. Through her pharmacy management system she would run reports on those patients for specific disease states or medications.

"Getting a little deeper into the dashboard showed there was more than just



Germaine Robinson has found managing patients through compliance packaging and evaluating performance reports regularly has made it easy to earn five-star pharmacy status.

catching outliers," says Robinson. "The performance tab actually lets me see each insurance company and how many patients I have with each one." Since several insurance plans score pharmacies on completing CMRs with MTM, tracking by plan allows her to catch any issues early that might affect her score.

THE ADVANTAGES

Robinson is pleased by how easy it is to keep her five-star rating now, and she says it's a scalable program. Staffing is another area where pharmacists new to compliance programs express hesitancy. Robinson says the Medicine-On-Time technician training program makes it possible for her to implement the program with current staff, thanks to workflow training as well as monthly webinars and consultations. She's also found more time for counseling that improves her pharmacy's quality measures as well as business development by networking with local providers.

"This is an opportunity. If patients are using compliance packaging and their adherence scores are good, you can approach a physician and explain how packaging would be good for a patient — and you can show the asset the pharmacy can be in collaborating with the physician," she says.

As physicians have come to see the value of Robinson's Medicine-On-Time program, she has found physicians will refer patients for compliance packaging if they are having issues with adherence.

"Everybody's always scared to start something new," says Robinson. "It's time to get out of that box. I am always ready to try something. And it really paid off. And it's not that bad, once you get your routine going. It's just a cake walk." **CT**

Maggie Lockwood is VP at ComputerTalk. You can reach her at maggie@computertalk.com.

What Is DSCSA and What Do Pharmacists Have to Do Today to Comply?



by J. Randall Hoggle,
B.Pharm., D.Ph., M.B.A.

I WOULD BE REMISS NOT TO RECOGNIZE THE WEIGHTED responsibility you have as a pharmacist, that until the DSCSA compliance federal mandate, you did not shoulder, but do now. This is the first of a series of articles on DSCSA.

What is DSCSA? The Drug Quality and Security Act (DQSA) contains two titles: Title I, which relates to compounding pharmacy practice, and Title II, the Drug Supply Chain Security Act (DSCSA), which relates to the noncompounded prescription products that make up most of your practice. DQSA and its Title II, DSCSA, were enacted into law to reduce the counterfeit drug rate in the United States, estimated still to be greater than 2%.

What do pharmacists have to do today? The DSCSA compliance has 10 requirements, as Advasur categorizes them in the absence of the FDA's Center for Drug Evaluation and Research (CDER) requirement categorization. These are the five current requirements pharmacists have been responsible to comply with since March 2016.

Requirement #1: Authenticate and validate authorized trading partners (ATPs)

- Dispensers must validate and authenticate every supplier who provides Rx products to your pharmacy. Your suppliers will also be validating your state pharmacy license and DEA (Drug Enforcement Administration) license.

The dispenser must track and validate every Rx product you receive by validating and retaining the advance shipping notice (ASN) sent to you for every shipment of Rx, which many times is a mixed shipment of Rx and non-Rx products.

- This is not just the dispensers' wholesalers but every supplier, including generic manufacturers you buy from routinely or occasionally.

Requirement #2: Receipt and validation of Rx product electronic advance shipping notices

- The dispenser must track and validate every Rx product you receive by validating and retaining the advance shipping notice (ASN) sent to you for every shipment of Rx, which many times is a mixed shipment of Rx and non-Rx products.
- The dispenser, upon a federal and/or state government authority request, must produce an ASN for any product that the dispenser (since March 2016) should have collected and held in an electronic file, usually a repository, within 48 hours of the authority's request.

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feature: supply chain management

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Requirement #3: Quarantine suspected illegitimate drugs

It is important that you set up suspicious order fulfillment standard operating procedures (SOPs) and then your quarantine SOPs for suspected illegitimate drug investigations. This is the only request a federal or state government inspector can make that the pharmacist does not have 48 hours to respond to. For requirement #3, the pharmacist on duty (POD) has to produce this SOP and deliver it upon request. It is important to develop "comprehensive" DSCSA compliance SOPs, not just SOPs to quarantine suspect illegitimate drugs, and your SOPs should be hyperlinked to the federal and state government guidance updates, so they never become outdated.

Requirement #4: Notification of FDA and trading partners of suspect illegitimate drugs

Upon identifying a suspect product and then validating that it is illegitimate, your pharmacist in charge (PIC) must notify that supplier and, using a Form 3911, must notify the FDA simultaneously.

Requirement #5: Provide a timely response to government authorities and trading partners

This requirement is by far the most critical requirement to be able to demonstrate 100% compliance. Upon a federal or state government authority's entrance into your pharmacy and demand for product shipping information or any other requirements #1 through #4 information, you must be able to produce this within 48 hours. No exceptions and no excuses.

These are the most common pitfalls for pharmacists when inspected:

- (a) Assumption that the wholesaler has you covered:
 - a. The wholesaler supplier is one supplier and does not have any of your other suppliers' data.
 - b. Wholesaler, secondary wholesalers, and direct- selling generic suppliers should provide the 10 data ASNs, but portal access to an electronic packing slip or transaction history summary does not have all 10 data sets required on the ASN documentation.

It is important that you set up suspicious order fulfillment standard operating procedures (SOPs) and then your quarantine SOPs for suspected illegitimate drugs.

- (b) Belief that they don't need to worry about federal DSCSA compliance until they hear about inspections occurring:

The FDA on Feb. 2, 2022, announced effective Feb. 7, 2022, that they were renewing their supply chain compliance inspections based on the COVID-19 pandemic subsiding.

Additionally, in the FDA announcement referenced above, the FDA will look to add nonphysical inspection tools like remote assessment auditing and monitoring systems. We anticipate that these remote tools will include a tabletop electronic audit with the request of up to six years of data, as allowed under the law.

- (c) Belief that they don't need to worry about state DSCSA compliance inspections: The state boards of pharmacy have been more active inspection authorities than the federal authorities. Also, if the state boards of pharmacy use the remote assessment auditing and monitoring systems announced to be used on the federal level, then the number of pharmacies being inspected at a state level and the frequency of inspection could be greatly increased. **CT**

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Points to Ponder

AS I REFLECT ON THE INDUSTRY EVENTS

I've attended, the Zoom meetings I have participated in, and my experience in picking up my own prescriptions, I have come to one obvious conclusion: The world of retail pharmacy has changed.

I see pharmacies shortening their hours and closing drive-up windows, and professional staff quitting their jobs. But despite the problems, I believe retail pharmacies can find ways to prosper. Why do I say that? Because I also see clever pharmacists, working in both chain and independent stores, rising to the occasion and finding ways to profitably meet the healthcare needs of their patients.

Dave Wendland, vice president for strategic relations for Hamacher Resources Group (HRG), recently spoke at the IPC Conference, hosted by the Independent Pharmacy Cooperative, in San Diego. During his remarks Wendland shared information that his firm has captured from formal market research, mingled with his observations gleaned from 30 years in the industry.

Wendland pointed to what he called seven big ideas and invited attendees to ponder, evaluate, and then find a way to modify and implement one or two of them. Space won't allow mentioning all seven, but I was struck by the following three.

Connect with your community. Here, Wendland points to Hashim Zaibak, owner of several Hayat pharmacies in the Milwaukee, Wis., region. Wendland says early on that Zaibak realized many of the people in these areas suffered from mental health issues. He connected with social service agencies and found ways to educate his patients, and refer them to people who could provide help.

Zaibak and his team do this because it truly helps people. But these people also need prescriptions filled, and they have family members and friends who need prescriptions filled. So, yes, he captures more prescription opportunities, and at the same time he builds relationships of trust with the community — all by focusing on a group of people who genuinely benefit from the improved care they receive.



by Bruce Kneeland

Differentiate your in-store experience. Wendland challenges pharmacy managers to find ways to make being in their pharmacy more appealing for customers. Wendland suggests you start by looking for simple, inexpensive ways to appeal to all five senses. He cites the example of how Walmart is shaking up the men's shaving category with bold new signage, better shelf positioning, and even product tags with scannable product information.

Other examples of this approach shared by another speaker were how she plays carefully selected music, has aroma therapy infusing the store, offers free samples of things like "gummy" type vitamins, and has a "please touch" attitude for her carefully selected spa-quality soaps and body care items.

Partner with others. This may be the idea that can most easily be used by chains, as their size, store traffic, and ability to capture and share metrics appeals to other large companies.

Wendland says Walmart is testing a relationship with Angi (formerly Angie's List) to help patients find handyman services to modify homes for bathroom safety or wheelchair access. This would appear to me to be a great way to improve the sale of home health and safety equipment. I'd suggest productive relationships could also be developed with companies that provide in-home care, or even supporting services like Meals on Wheels.

Yes, all these types of things take time, effort, and even hard-to-find cash. But the real point is that when implemented they generate high-margin, non-PBM (pharmacy benefit manager) revenue.

Running a retail pharmacy is tough. But finding ways to build on your position in the community as a healthcare expert can open many doors to new and more profitable services. It has long been said that problems are merely opportunities in disguise. It's time to take the mask off some of your problems and take advantage of the opportunities they are hiding. **CT**

Bruce Kneeland is an independent pharmacy veteran, author, and podcaster. He can be reached at BFKneeland@gmail.com and listened to at www.pharmacycrossroads.com.



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At The Heart of Growth

Artificial Intelligence and the Future of Pharmacy



by **Will Lockwood**
VP | Senior Editor

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Artificial intelligence (AI), or the ability for computers to process and learn from data to make accurate predictions, is shaping up to have a big impact on how we use technology. AI is showing tremendous promise in healthcare in general, and pharmacy specifically. Here, we'll take a look at the current state of AI in pharmacy, and what the future holds.

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cover story: AI in Pharmacy

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KHOA NGUYEN, PHARM.D., IS CLINICAL ASSISTANT PROFESSOR in the department of pharmacotherapy and translational research at the University of Florida College of Pharmacy. Professor Nguyen has expertise in pharmacy informatics as well. He has worked on developing technology for the University of Florida's electronic health record (EHR), including implementing AI technology as a part of the university's larger AI initiative. This initiative involves faculty with expertise in various areas of AI, both within the pharmacy school and in other areas of healthcare, all working to develop algorithms and implement AI into clinical services across the health system. Nguyen reports that the College of Pharmacy is currently working on an AI implementation to assess opioid overdose risk.

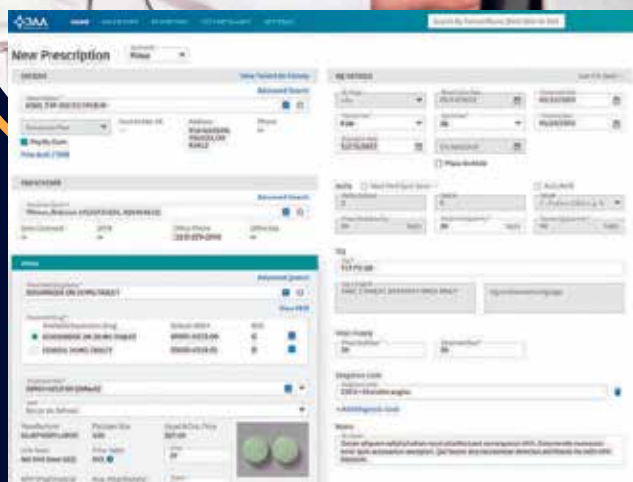
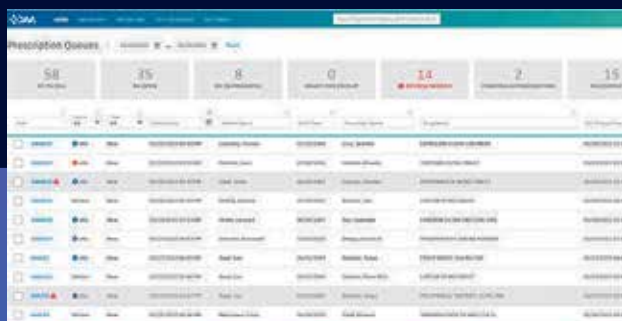


Khoa Nguyen, Pharm.D.

While there are different definitions of artificial intelligence, Nguyen defines AI as the capability of the computer to discover meaning in data and generalize from

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it — and then, most importantly, show the ability to learn from past experience. “AI systems are able to perform a task similar to the way humans do,” says Nguyen, “and in cases even mimic human intellectual characteristics.”

THE BUILDING BLOCKS OF AI

What goes into creating an AI application? First, AI requires data. Just as with human decision-making, good data is central to good outcomes. The data trains an algorithm, and the algorithm can be integrated into software such as an EHR or pharmacy management system. “Our goal in the current project,” says Nguyen, “is that when a patient comes in for care the AI algorithm will assess whether that patient has a high risk of opioid overdose based on multiple factors. In cases where the risk is high, there’s critical decision support so that the provider can make the optimal decision to reduce this risk for the patient.”

Next, developers of an AI application need to use different techniques to learn from the data and create an algorithm that produces accurate predictions. “Algorithm” is perhaps as significant a term in tech these days as AI is, and it’s simply a process or a set of rules for solving a problem. Nguyen gives several examples of the methods that the University of Florida uses to develop AI algorithms. “Machine learning is the technique that we use most commonly,” he says, “especially in this overdose risk project.” There are multiple types of machine learning techniques, notes Nguyen. In one blog post (www.ibm.com/cloud/blog/supervised-vs-

unsupervised-learning), an IBM analytics expert breaks machine learning down into three broad categories: unsupervised, supervised, and semi-supervised. The post states that the main difference between supervised and unsupervised learning is labeled data. Supervised

learning uses labeled input and output data, while unsupervised learning does not. In semi-supervised learning, some of the data in a training data set is labeled.

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cover story: AI in Pharmacy

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Among the other approaches available, according to Nguyen, are artificial neural networks, which Wikipedia describes as loosely modeling the neurons in a biological brain (en.wikipedia.org/wiki/Artificial_neural_network), or deep neural networks (en.wikipedia.org/wiki/Deep_learning#Deep_neural_networks), which are artificial neural networks with multiple layers between the input and output layers. Then there's natural language processing (NLP), which Wikipedia describes as giving a computer the ability of "understanding" the contents of documents, including the contextual nuances of the language within them," (en.wikipedia.org/wiki/Natural_language_processing). "NLP is important when working with EHR systems," says Nguyen, "because a lot of data that we want to use comes from the notes that are written by providers. Which approach is best really depends on the data and the practical solution that we want to create. We usually use multiple techniques in the AI algorithm development process and try to figure out which

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one gives us the optimal solution in our clinical setting."

THE PATH TO AI IMPLEMENTATION

When it comes to implementing an AI solution and even commercializing it, Nguyen sees three key areas: techniques, data, and implementation.

"First," he says, "we've already talked about finding the best technique to develop the algorithm. Generally, AI research-

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ers and developers have gotten to be really good at using the different techniques we've talked about that are applicable to and useful for a healthcare algorithm development process." This is the key first step in AI development and implementation in a clinical setting.

The second important area is data quality. AI, notes Nguyen, needs clean, reliable, and relevant data to train on. "This area is more difficult," says Nguyen. "Most of the time when we are working through the best solutions for developing an AI algorithm, we are working in what we call an optimistic data environment. What this means is that we are assuming, for example, that the patient always takes the medication, but in reality, the data is not like that. Usually the data is not that clean; it also might not be as relevant as we want it to be, and it can be biased, depending on the population."

For example, data sets often contain more adverse events and outcomes than positive ones, since data enters the

record when there's a side effect or other issue for which a patient seeks care. "We have a lot of data on the patients who experience issues in their care," says Nguyen, "but not as much data on the healthy patient because they rarely go in to see the pharmacist or to the clinic or hospital. So we see how the data might be skewed into one area compared to the other."

Then there's another human element. The primary use of healthcare data is to support clinicians in their care of patients, notes Nguyen. "We do not create data for the sake of research or for the sake of training AI on the data," he says. "That is a secondary use of the data."

This means that there are commonly accepted ways providers enter data that can cause serious issues for AI. The

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example Nguyen provides is blood pressure numbers. "It's quite common for a staff member to enter zero for blood pressure," he says. "To other staff this clearly just means that that blood pressure is unavailable or irrelevant. But a machine doesn't understand that. It will read blood pressure for that patient record as actually zero, and that is definitely going to skew the algorithm."

What it boils down to is that the quality of the data sets available for training AI creates a real difference between expectation and reality. "Blood pressure is just one common example," says Nguyen, "but there is a lot of this kind of data in our real patient records. We have to be aware of these issues and make best efforts to clean up those data to prevent the bias."

Even in cases where the data is clean and carefully recorded, the success of an AI application can run up against the fact

that, as Nguyen notes, clinical settings vary enough that an algorithm trained on data from one setting may not work in a second setting, because of the uniqueness of the populations, differences in the way the data is handled, or the policy of that data within an institution.

Researchers and developers are aware of this, but it has caused problems even for such major AI initiatives as IBM Watson. "It's a struggle," says Nguyen. "You can have an algorithm that's providing useful results in one region of the country, but when you apply it to data from a patient population in another region, the prediction is not that accurate anymore."

And finally, the third area is the process of implementa-

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Putting AI to Work

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Teresa Butler, D.Ph., is a pharmacist/owner of Rx Shoppe in Grove, Okla. She has been a pharmacist for 26 years and graduated from the College of Pharmacy at Southwestern Oklahoma State University. Butler worked in hospitals and chains before deciding to work for herself, and opened her pharmacy in Grove, her hometown, in 2010 with her friend and fellow pharmacist Larry Herrelson. Her Rx Shoppe offers MTM (medication therapy management), compliance packaging, compounding, and a focus on customer service. ComputerTalk's Maggie Lockwood asked Butler about how she's benefiting from artificial intelligence through DrFirst's SmartSuite.



Teresa Butler, D.Ph.

"SmartSuite is exactly what we've needed — support. We often have to stop to look up a lot of information, and anytime we get an additional hand in to allow us to do the other tasks, the day goes more smoothly."

ComputerTalk: How did you decide to try AI with your pharmacy system?

Teresa Butler: I am always the person with a new computer or phone. I have always worked with our pharmacy software company and offered to be a beta tester on a lot of their new innovations. So it fell right in for me to get to be one of the people to try it out and see how it works. I was excited to try it out.

CT: What does SmartSuite look like in action in your pharmacy?

Butler: We use it to autofill medication directions and check for allergies. It may not seem like a timesaver to not type your sig codes, but throughout the day we find it's a great timesaver.

CT: How did it change your workflow?

Butler: Our workflow stayed the same

physically. What changed was how many of our staff members weren't afraid to try typing. We have some clerks who are hesitant to type because they have to ask too many questions — they don't know the sig codes and had to type out the directions, in full, each time. That's not conducive to workflow, answering all the questions or having them type them out longhand. With SmartSuite they are autofilled and the clerks can double-check it. With SmartSuite as accurate as it is, and the clerk's basic knowledge, we move along much better. When they know they don't have to ask 20 questions they are much more likely to jump in. For the

more experienced ones it has been a big timesaver — they can definitely get through the queue much faster than before, and everyone loves to get to go to lunch on time.

CT: How did it support clinical decision-making?

Butler: That's exactly what we've needed — support. We often have to stop to look up a lot of information, and anytime we get an additional hand in to allow us to do the other tasks, the day goes more smoothly. It does not take away any of your abilities to make all these decisions; it just provides additional information in a quick format to process it a bit more quickly. The format is easy to read/process/understand. The best part is that with it being new technology, it doesn't add time or training time required.

CT: What advice do you have for pharmacists considering AI for their pharmacy?

Butler: My advice would be to take a look at it first, of course, but my experience has been all positive with what we have tried. We have decreased wait time for a prescription. We have gotten good responses when we provided feedback to DrFirst to help initiate some changes. We definitely have a smoother workflow with fewer errors to be fixed. For us, this adds up to happier people and a better day all around. **CT**

Maggie Lockwood is VP at ComputerTalk. She can be reached at maggie@computertalk.com.

tion of AI in clinical practice. “We spend a lot of time developing multiple algorithms to support clinicians and pharmacists,” says Nguyen, “but the literature shows that only 2% or 3% of all of these models are being implemented into clinical practice.” The reason for this, according to Nguyen, is often that when people develop AI solutions, they do so without sufficient consideration of the real problems that need to be solved or who will actually use the tool. “If we want to develop a product that is practical and that people will use,” says Nguyen, “then we have to understand the need and the workflow, and we have to be able to make it clear to users how they will benefit from the AI product. When we don’t take the time to really develop an understanding of the need and ability to explain the benefit, we have a real tendency to overestimate the uptake of AI technology.”

The challenge at the moment is to keep making advances while also keeping an eye on how AI needs to fit into the care model overall.

AI IN RETAIL PHARMACY

While there are pharmacy technology vendors that have either implemented AI in their solutions or are working on it, on the whole AI is still a work in progress as far as your typical community or institutional pharmacy setting goes. DrFirst is one vendor applying AI to e-prescriptions to accurately translate patient directions. See how a community pharmacy is benefiting from AI on the previous page. “From my experience here at the University of Florida,” says Nguyen, “we are still in the early stages with AI. We are still trying to find good test cases that show a benefit when we implement AI into our EHR system.”

So is there truly a future for AI in pharmacy? Nguyen certainly thinks so. He sees AI growing into a role that makes pharmacy and healthcare overall more proactive. “This means using AI to give us the ability to prevent negative outcomes,” he says. “That is where I think AI can have the biggest impact in pharmacy over the next five years. AI is going to power our ability to predict and prevent the harmful use of a medication, to avoid side effects.” For example, notes Nguyen, AI is a powerful way to make use of pharmacogenomics to predict whether a medication will be useful in personalized medicine before beginning a patient on a drug. “AI has become something of a buzzword,” he continues, “but we are in fact gaining a lot more momentum with AI and gaining a great deal of experience with how to use it effectively in a clinical setting.” The challenge at the moment is to keep making advances while also keeping an eye on how AI needs to fit into the care model overall. “Again,” says Nguyen, “we need to make sure we are paying attention to the whole workflow and not just the algorithms or techniques. We have to be able to answer the question: How can we actually implement an AI tool into the clinical setting in a way that benefits both the provider and the patient?” **CT**

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How the Right PSAO Protects Pharmacy Viability

IF YOU'RE AN INDEPENDENT PHARMACIST OR PHARMACY owner, you know how challenging the payer landscape has become. You've probably made an effort to diversify your business in order to meet healthcare needs in your community while trying to stay financially viable. So when it comes to contracting on your behalf, shouldn't your pharmacy services administrative organization (PSAO) be doing everything it can to protect your patient access and keep your pharmacy viable?

Does your PSAO prioritize your valuable role in your community (and not just consider prescription volume)? How can you tell? A few key attributes should be evident if the organization has your best interest at heart.

The Three Priorities of the Right Contracting Partner

1. The "A" in PSAO stands for "administrative" and describes the traditional role of the PSAO, which is acting as an intermediary between the PBMs (pharmacy benefit managers) and the pharmacies. This is a passive role that worked in the past to a degree because independent pharmacy was able to operate in the former reimbursement environment. As payers and PBMs continue to consolidate, they now wield tremendous negotiating leverage. They're rapidly forcing down reimbursement rates, thus negatively impacting the economic model for all pharmacies, especially independents.

Most traditional PSAOs continue to believe their primary role is merely an administrative one, working in the background as intermediaries so that PBMs don't have to contract with each individual pharmacy. Most PSAOs haven't moved beyond that narrow scope. What they haven't realized is that the PSAO's mission must expand



Peter Kounelis, R.Ph.

to help its member pharmacies operate in the current environment, where their services aren't properly valued. This is about financially, economically, and professionally striving for a sustainable business model for independent pharmacies.

What we are hearing from pharmacies is that they need someone to fight for them, and not just act as a back-office administrator. They need someone to evaluate, contract, and advocate to help reverse some of the abusive and burdensome tactics that these monolithic PBMs are imposing, especially on independent pharmacies. Meeting this need makes it even more incumbent upon PSAOs to engage with payers on your behalf and to promote your value to protect their own viability and future. The "A" in PSAO must evolve to mean "advocate" — both at the contracting table and on the legislative front.

2. When a PSAO casts a wide net and agrees to participate in all payer networks, what it's really telling you is that it's conceding that your unique and valuable services are commodities. They are trading margin for volume as the only option. But if the PSAO views its mission more expansively, it will find that being more selective prevents the commoditization of pharmacy services. This sends a very powerful signal to the PBMs.

Imagine your PSAO being unwilling to readily sacrifice its member pharmacies'

margins to the PBMs merely to participate under less-than-viable terms. Prescription volume alone shouldn't be the goal. Preserving patient relationships that also reward you for value should be the prime objective. Key to contracting is keeping in mind that unless pharmacies have the time, resources, assets, and wherewithal to continue to deliver these services, they won't be able to continue to survive in the future. Patient relationships are the hallmark of independent pharmacies.

3. Industry-leading PSAOs bring experience from various disciplines to the contracting process. They bring to bear expertise from health plans, PBMs, pharmacy, and pharma. After all, it's crucial to understand "how the sausage is made" if you're trying to change the menu. The new PSAO will have a fundamental understanding of how PBMs work — what the economic flows are, where their incentives are — and try to apply those when protecting pharmacies. That experience can't be overstated. It's the only way to truly understand where the opportunities are to help pharmacies survive and thrive.

The Bottom Line

Independents need a true partner that contracts to help them successfully navigate a challenging payer landscape. The right partner will prioritize your compelling value story — and have the experience, passion, and strategies to make it happen. **CT**

Peter Kounelis, R.Ph., is VP of Elevate Provider Network for AmerisourceBergen, where he leads network strategies and serves as a liaison to the industry. He holds responsibility for developing and leading PBA Services for the organization and oversees the provider network advisory board. He earned his pharmacy degree at the Purdue University School of Pharmacy and his M.B.A. at the Purdue University Krannert Graduate Business School of Management.

Continuous Glucose Monitoring Devices: A Growing Area of Digital Therapeutics



Brent I. Fox, Pharm.D., Ph.D.

IN AMERICAN CULTURE, we commonly define time periods by popular trends, significant happenings, and influential people of the time. For example, the 1980s are commonly known as the “Decade of Decadence” due to the music and entertainment industries that dominated that ten-year period. In fact, Mötley Crüe fans among *ComputerTalk*’s readers fondly remember the band’s 1991 greatest hits release, “Decade of Decadence ’81–’91.”

Similarly, we can define time periods in the healthcare information technology (HIT) space by significant events. The early 2000s could be called the “PDA Era,” as personal digital assistants were all the rage. While they were not initially introduced as health-oriented tools, enterprising providers saw the potential in these devices and began using them as tools to support decision-making.

In 2004, we began the “EHR Era,” when President George W. Bush appointed Dr. David Brailer to be the country’s first national health information technology czar, where he officially served as the National Coordinator for Health Information Technology. This office was responsible for national efforts to drive adoption and use of electronic health records in U.S. hospitals and clinics. Today, this office leads efforts for standards-based exchange of health information.

Now we are in the midst of the “Digital Health Era,” which the FDA describes as existing at the intersection of technology, connectivity, software, and sensors for health-related uses.

Now we are in the midst of the “Digital Health Era,” which the FDA describes as existing at the intersection of technology, connectivity, software, and sensors for health-related uses. Digital health is an umbrella term and includes commonly encountered technologies like mHealth, health information technology, telehealth, and sensors. Digital health also includes less commonly encountered technologies, namely personalized healthcare and digital therapeutics.

The Digital Therapeutics Alliance defines digital therapeutics as the delivery of “medical interventions directly to patients using evidence-based, clinically evaluated software to treat, manage, and prevent a broad spectrum of diseases and disorders” (<https://dtxalliance.org/understanding-dtx>). The Digital Therapeutics Alliance website provides a useful compendium of example technologies for a variety of conditions, including ADHD (attention-deficit/hyperactivity disorder), pain management, COPD (chronic obstructive pulmonary

disease), and depression. The spectrum of digital therapeutics tools is likely greater than most anticipate.

TWO OPTIONS

Among the most popular digital therapeutics devices are those for the management of diabetes. Like other digital therapeutics devices, those for the management of diabetes undergo regulatory review by the FDA. *ComputerTalk* readers likely know digital therapeutics devices for diabetes by their commonly used name, continuous glucose monitoring (CGM) systems. CGM systems consist of a sensor, transmitter, receiver, and software. The sensor typically inserts just below the skin and measures glucose. The transmitter sends glucose readings to the receiver, which is a small device that contains software to present readings and other information to the patient. Receivers can be devices dedicated solely to glucose monitoring, or in

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some cases, smart devices can present glucose data to patients.

Where is the CGM market headed? During the third quarter of 2021, the two primary players in the United States market reported substantial growth. Abbott reported adding 200,000 new users, while Dexcom reported 30% revenue growth compared to the third quarter of 2020. CGM devices are used by patients with both type 1 diabetes and insulin-dependent type 2 diabetes. Currently, there is 45% penetration in the type 1 market, with an anticipated peak of 74%. Penetration within the type 2 market is expected to peak at 55%.

With the popularity of CGM devices and the widespread prevalence of diabetes in the United States, pharmacists will (or already) have patients seeking advice on the potential role of CGM in managing their diabetes. There are many factors to consider for these patients. One of the first questions to consider is whether or not the patient wants a device that automatically sends data to the receiver, or a device that requires the patient to swipe the sensor to receive glucose data. The first group of devices, known as “real-time CGM (rtCGM)” continuously sends data from the sensor to the receiver, as often as every 5 minutes, or 288 times per 24-hour period. Patients with “intermittently scanned CGM (isCGM)” devices are encouraged to swipe the sensor at least once per 8-hour period.

As we consider patients with diabetes, what are other relevant features or functions? Cost to the patient is obviously impacted by insurance coverage. Considering the cash price, in general, rtCGM costs more than isCGM, with variation in price among the primary

rtCGM products. It is worth asking, however, if it is appropriate to directly compare prices between rtCGM and isCGM due to their differences in how data is sent to the receiver. rtCGM does not require any action by the patient to receive data, while isCGM requires deliberate scanning of the sensor by the patient to receive data. For those patients with better control and less need for close monitoring, isCGM may be a better choice.

Related, for patients who need integration with an insulin pump, rtCGM devices are the preferred choice. Note that not all rtCGM devices integrate with insulin pumps. Due to their intermittent nature, isCGM devices are not integrated with insulin pumps. Both rtCGM and isCGM devices provide visual depiction of glucose trends, real-time alarms, and customizable alerts. However, these features are not found across every device. Notably, rtCGM devices can provide predictive low glucose alerts, which can be extremely beneficial in avoiding hypoglycemic events.

This brings up the important role that pharmacists can play in helping patients select and optimize their use of a CGM device: education. Pharmacists have an opportunity to partner with their patient as a team to optimally

manage the patient’s diabetes. For example, depending on the device, some substances can interfere with proper function of the device. Acetaminophen is one such substance, and due to its widespread use, this is an important point of patient education.

For pharmacists desiring to partner with their patients in the patients’ CGM journey, the array of devices, features, and considerations can be a bit daunting. For support in your efforts, please refer to the *Personal Continuous Glucose Monitoring Implementation Playbook*, from the Association of Diabetes Care & Education Specialists, the American Pharmacists Association, and the APhA Foundation (see web address below). This guide was the source for many of the points discussed in this article. This article touches on several of the key considerations with CGM use, but the guide provides an extensive review of the complete list of features to consider. I would enjoy hearing your thoughts on the guide referenced above and CGM, in general. **CT**

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CGM Resources

Access the *Personal Continuous Glucose Monitoring Implementation Playbook* and more resources from the Association of Diabetes Care & Education Specialists at www.diabeteseducator.org/practice/practice-tools/app-resources/professional-cgm-playbook

The Pharmacist Will See You Now... and Treat You Now, Too



Patty Milazzo, R.Ph.
Logan Graham

THE U.S. NATIONAL VACCINATION EFFORTS

began in the spring of 2021, creating one of the fastest and largest operational shifts in pharmacy history. Retail pharmacies administered over 240,000 COVID-19 vaccinations in less than a year and have continued into 2022 with first and second boosters. Pharmacies were responsible for approximately 70% of all long-term care vaccinations and quickly became the nation's frontline strategy as the primary provider of vaccinations. The U.S. government now considers pharmacy a prominent player in the delivery of healthcare, as evidenced by the recently announced "test to treat" initiative.

In the 2022 State of the Union Address, President Biden announced a new COVID strategy. Described as "test to treat" by Biden and by the Office of the Assistant Secretary for Preparedness and Response (ASPR), it allows patients to receive a rapid COVID test and oral antiviral treatments for COVID at their community pharmacy. The president's goal is to create rapid access to the FDA (Food and Drug Administration)-approved COVID oral antivirals, Pfizer's PAXLOVID (nirmatrelvir tablets; ritonavir tablets) and Merck's LAGEVRIO (molnupiravir). The hope is that expanding and expediting access to these treatments may diminish the severity of COVID symptoms, reduce hospitalizations, decrease lost workdays, reduce long-term COVID impacts, and partially alleviate the enormous burden placed on primary care providers and hospital emergency departments. Unfortunately, even with accelerating vaccination rates and the availability of boosters, COVID cases continue to rise due to variants. The severity of a specific variant or subvariant widely fluctuates. Communities should be prepared to adjust mitigation strategies based on hospitalization increases. Retail pharmacy is a critical component of those mitigation strategies.

COVID care at pharmacies goes beyond vaccinations. The process of testing and treating patients in the pharmacy is more nuanced than the phrase "test to treat" suggests. Like the vaccination roll-out, operational, documentation, and technology requirements are not fully understood or yet implemented.

Legal and regulatory concerns exist that must be addressed, as well as a need for technological support to streamline and document test-to-treat interventions. Pharmacies that participate also have procurement and distribution requirements from federal and state agencies and their wholesaler. The treatments, and the test-to-treat program, are currently available at some pharmacy-based clinics and long-term care pharmacies, but not necessarily available at all pharmacies. Patients wishing to access "test to treat" can visit <https://covid-19-test-to-treat-locator-dhhs.hub.arcgis.com/> to find a pharmacy nearby that does this.

Despite the challenges, positive outcomes from the test-to-treat initiative could lead to expansion of similar community pharmacy services in the future. As described in our column in the last issue of *ComputerTalk*, on the topic of "Rethinking Pharmacy Business Models," pharmacy is rapidly evolving to include multiple types of healthcare functions.

One major hurdle to the test-to-treat initiative is the ongoing debate between pharmacists and physicians in parts of Europe, Asia, and South America. Currently the American Pharmacists Association offers a "Pharmacy-Based Test And Treat Certificate Training Program" for pharmacists. This includes hands-on training in throat swabs, oral fluid collection, nasal swabs, and finger-stick testing. Because pharmacists have played a key role throughout the COVID pandemic, patients, regulators, and payers should trust pharmacists to continue to contribute to the efforts to curb the virus. Some states have approved pharmacists to perform prescribing in limited circumstances. As an example, Oregon allows pharmacists who have completed their board-approved training program to "prescribe hormonal contraceptives to a patient pursuant to the Oregon "Self-Screening Risk Assessment Questionnaire and Standard Procedures Algorithm," where most states do not grant prescriptive authority of any kind to pharmacists.

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President and CEO of the National Association of Chain Drug Stores, Steven C. Anderson, says the federal government should “recognize pharmacists to perform the test-to-treat function, much like nurse practitioners are recognized to provide routine care for other disease states.” Recognition of the capabilities of pharmacists to provide point-of-care testing and obtain a diagnosis will help a patient to receive treatment sooner. That difference in time could be the difference between being in the window for antiviral therapy or not.

DOCUMENTING AND SHARING

Once federal and state documentation requirements are known, pharmacies will require the necessary technology to document and share electronically the point-of-care testing results. Patient electronic health records will require documentation of diagnosis and treatment. Some pharmacies, such as certain Walgreens and CVS locations, have prescribers and pharmacists all under one roof but not necessarily a fully integrated workflow. Walmart uses Epic software in its health centers to share information with providers. Walgreens has partnered with VillageMD to use its primary care-centered operating system, docOS, in their Village Medical clinics. This system was designed to extract clinical data elements from multiple EHRs (electronic health records) and practice management systems, including hospitals and skilled nursing facilities, to make them available to clinicians. These communication methods are more feasible for the larger chain pharmacies, but the explosive need for pharmacy clinical documentation should drive multiple vendor options soon.

Pharmacies may need to enhance current technologies or purchase ancillary software to support clinical services like test to treat. One solution for documentation of patient test results may be to use the medication therapy management (MTM) platform. MTM systems may lack connectivity with the pharmacy practice management system and the ability for pharmacists to share information directly with patients’ providers. While not a requirement for test to treat, if expansion is to happen, information exchange between community pharmacists and providers needs to improve. Currently, pharmacists are often in the dark when it comes to lab values and diagnoses. Pharmacies can use their own systems to document notes about patients’ test results, which may be sufficient for use with collaborative practice agreements.

Pursuant to a collaborative practice agreement, some states allow pharmacists to test for and treat minor health conditions. Florida grants pharmacies the ability to enter into a collaborative practice agreement to test and treat “minor non-chronic health conditions” such as streptococcus infections, influenza, lice, and minor skin infections such as ringworm and athlete’s foot. This type of practice may become more commonplace in community pharmacy, if successful implementation of test to treat for COVID can pave the way. So far, no technology has emerged as an ideal candidate to allow for widespread seamless information exchange between community pharmacies and providers, though limited applications such as chain and clinic partnerships do exist.

The federal government’s recognition of the benefits of test to treat in the community pharmacy could open the door for future expansion. One possibility is the management of patients whose physician has already diagnosed an episodic or chronic condition, such as migraines or diabetes. Pharmacists have the clinical knowledge to adjust the pharmacotherapy of these patients based on subjective and objective criteria, such as patient assessments or blood glucose readings. While pharmacists may not currently have the authority in all states to adjust the therapies of patients with diabetes, it may be a real possibility to expand the scope of pharmacy practice.

Overall, test to treat is not without its challenges. The lack of current funding is affecting resources for COVID treatment. The federal government is expected to reduce state shipments of monoclonal antibody treatments by 30%, and the U.S. supply could be depleted soon. The challenge of rethinking the role of a pharmacist, as well as passing legislation that enables pharmacists to use their training, is still a hurdle, despite pharmacy’s national participation in COVID vaccination efforts. The technology support required for test to treat, once established, will open new opportunities for pharmacists to use their knowledge to create positive patient outcomes, reduce the overall healthcare system costs, and improve a community’s COVID situation. These outcomes can become more of a possibility through advocacy for the expansion of the role of pharmacists in test to treat. **CT**

Patty Milazzo, R.Ph., is senior consultant, and Logan Graham is pharmacy intern at Pharmacy Healthcare Solutions. The authors can be reached at pmilazzo@phsrx.com and lgraham@phsrx.com.

Reaching Across Borders

MY TRAVEL ADVENTURES OVER

THE YEARS HAVE provided me the opportunity to stop in and visit with pharmacy colleagues across borders, regardless of where I may be headed. I am always curious how the pharmacy looks, where it is located and the physical footprint, what products the pharmacy carries, and what it's able to provide over the counter and behind the counter. I also try to make a purchase to help the business side of my colleague's endeavors. And while there may be some differences in the practice, the common elements across all my visits are the practice's focus on the patient and its core place as a health center in the community. These themes are the common language that bind us together no matter our country.

My interest in international pharmacy started as a student at the University of Minnesota College of Pharmacy. Dean Lawrence Weaver was an internationally respected scientist who became a leader in innovative pharmacy practice. His knowledge was sought by many, and the university developed a special relationship with King Fahd University in Saudi Arabia. Dean Weaver was a frequent traveler abroad and shared learnings from these trips with students in a variety of ways.

As a pharmacy resident with the American Society of Health-System Pharmacists (ASHP), then-CEO Joseph Oddis was tapped to help build a solid foundation for the International Pharmaceutical Federation, or FIP. His legacy of leadership is made obvious by the extent to which American

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Marsha K. Millonig
B.Pharm., M.B.A.

pharmacists are involved throughout FIP's many sections and the abundant leadership roles that they have served. A quick look at the FIP sections shows nearly 20 U.S. pharmacists in leadership positions today. Countless more have already served and made their way through leadership chairs. I enjoy keeping up with the lifelong international relationships they have made through social media.

THE BACKGROUND

FIP was founded in 1912, and since my early involvement in the late 1970s it has grown by leaps and bounds. FIP is the global body representing pharma-

cy, pharmaceutical sciences, and pharmaceutical education. They have 146 national organizations, academic institutional members, and individual members, representing over 4 million pharmacists, pharmaceutical scientists, and pharmaceutical educators around the world. FIP's vision is "a world where everyone benefits from access to safe, effective, quality and affordable medicines and health technologies, as well as from pharmaceutical care services provided by pharmacists, in collaboration with other healthcare professionals," and their mission is to "support global health by enabling the advancement of pharmaceutical practice, sciences and education." You can find more about FIP at www.FIP.org.

While I have not attended an FIP World Congress in decades, I continue my FIP membership as a means to keep up with my international colleagues. Many countries have made advances

continued on next page

beyond those in the United States in pharmacist-provided patient care, but others lag. But the common element is the focus on the patient and pharmacist-provided care, and the well-being of the pharmacy team. A scan of recent FIP news headlines confirms this (see box below).

From a technology standpoint, FIP has also addressed interoperability as a key to successful digital health, and has launched a course to address gaps in digital health education. Its programs address humanitarian efforts and other global issues as well, such as climate change, air pollution, public health threats, and the COVID-19 pandemic. Having a formal, international pharmacy organization provides a structure to advance the profession globally.

Yet as individuals, having a formal leadership position in FIP is not necessary to build international bridges with colleagues. Each of us can advance global understanding and relationships through grassroots activity — making time to stop in and visit with colleagues where you travel.

Most recently, I visited with a pharmacist in Philipsburg, St. Maarten (top photo, at right). The pharmacy was in a bustling part of the town center, easily accessible for international travelers. The pharmacist was kind enough to show me the

A sample of International Pharmaceutical Federation (FIP) news headlines

FIP publishes information to support countries to take pharmacists and pharmacy technicians from Ukraine into their health workforce

Pharmacists' impact on global vaccination rates is growing, according to new FIP report

World Pharmacist Day 2022 to underline importance of professional unity

Latest handbook from FIP gives pharmacists guidance on supporting self-care

FIP emphasizes pharmacists' wider medication review roles in update of its medicines use review toolkit

New resource from FIP supports pharmacists in tackling public health threat of diabetes

FIP publishes competency framework for pharmacists working in the humanitarian arena



pharmacy's setup. They had a similar behind-the-counter format as many U.S. pharmacies and had a great selection of front-end merchandise. I was able to find an OTC remedy that one of our group members needed for a sudden-onset malady.

In 2018, I stopped in to meet the pharmacist and pharmacy technician team in Senggigi, on the island of Lombok in Indonesia (at left, middle). The focus was on the behind-the-counter medicines with a very small front-end section. They were delighted to learn a bit about U.S. pharmacy.

My pharmacy visits have been happening for many years. A memorable one was in Shanghai, China, in 2004 (at left, bottom). The focus here was on traditional Chinese medicine and herbals, with less of a focus on finished-good pharmaceuticals. It would be interesting to see how Chinese pharmacy has changed since then and with the onset of COVID.

As the world reopens and travel begins anew, it is a good time to think about

reaching out to our colleagues in other parts of the world. I encourage you to take a minute to visit a pharmacy wherever your travels take you. Bon voyage and safe travels. **CT**
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