

# To the root: An introduction to functional medicine and its potential in community pharmacies

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**Upon successful completion of this article, the pharmacist should be able to:**

1. Define functional medicine and its contributing components.
2. Determine opportunities for implementing functional medicine into an independent pharmacy.
3. Recognize the role of nutrition, supplementation, and alternative and complementary therapies in achieving health outcomes.

**Upon successful completion of this article, the pharmacy technician should be able to:**

1. Define functional medicine and its contributing components.
2. Assist in determining opportunities for implementing functional medicine into an independent pharmacy.
3. Identify opportunities to support pharmacists' recommendations for supplementation and alternative and complementary therapies in achieving health outcomes.



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## INTRODUCTION

As the prevalence of chronic diseases such as obesity, Type 2 diabetes, and hypertension continue to rise, it is apparent that the nation is suffering a systemic sickness that historical treatments can no longer adequately address. What was once thought of as “a pill for every ill” is proving less effective in treating complicated diseases. It is time there is a shift toward multifaceted treatment approaches that, along with medications, promote primary and secondary prevention strategies, holistic health modifications, and sustainable lifestyles. Functional medicine, a practice focusing on all aspects that contribute to a patient’s health in an individualized manner, is well-positioned to do just that. Matching the necessity for pharmacists to offer innovative services beyond dispensing with that of the nation’s desire to combat chronic diseases in new ways, functional medicine is perfectly situated to pivot upon current health care practices to address the needs of both.

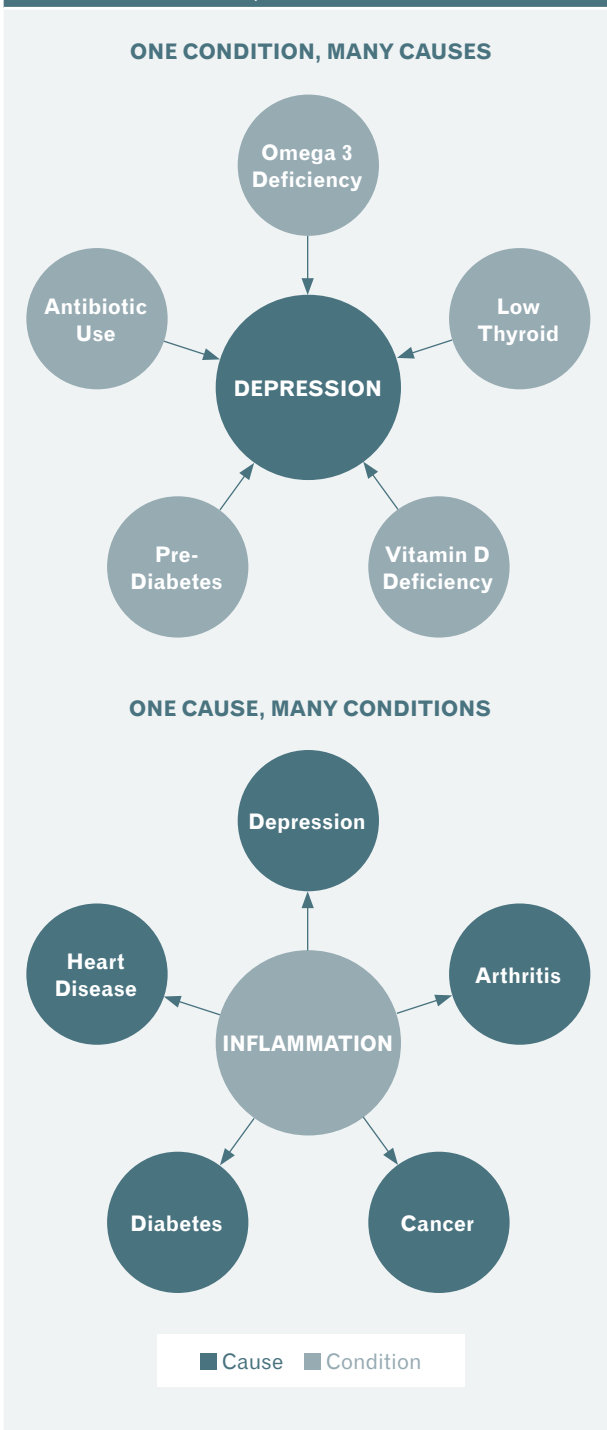
## CHRONIC DISEASE IN THE UNITED STATES

While the majority of diseases treated in the 20th century revolved around acute illnesses such as tuberculosis, typhoid, and pneumonia, currently seven out of 10 deaths are related to chronic diseases, including heart disease, kidney disease, and diabetes. With approximately 86 percent of health care dollars spent toward treating chronic diseases, it is evident that these disease states are difficult to manage, frequently require multiple medications, often last a patient’s lifetime, and are quite expensive. Additionally, these patients tend to have increased hospitalizations from complications and are non-adherent due to complicated medication regimens. Managing chronic disease in the current health care system is not sustainable and will inevitably bankrupt the United States if changes are not made soon.

## INTRODUCTION TO FUNCTIONAL MEDICINE

According to the Institute for Functional Medicine, functional medicine is defined as “an individualized, patient-centered, science-based approach that empowers patients and practitioners to work together to address the underlying causes of disease and promote optimal wellness.” The practice primarily focuses on personalized lifestyle and environmental factors, including sleep, relaxation, exercise, nutrition, stress, and relationships. Functional medicine focuses on treating the underlying causes of disease instead of prescribing medication for a collection of symptoms, and hones in on patient-specific factors and natural remedies. Treatment methods often include the addition of nutritional supplements, therapeutic diets, detoxification programs, and lifestyle modifications based on information obtained from patient consultations.

Figure 1. An illustration on how one disease can have many contributing factors and how one cause can be related to multiple conditions (Image courtesy of Institute for Functional Medicine.)



Laboratory tests are often leveraged in functional medicine to explore a patient’s condition and further understand an individual’s genetic, biochemical, and lifestyle

factors to direct personalized treatment plans. Tests may reveal that one disease has many different causes and, likewise, one cause may result in many different conditions — a point illustrated in Figure 1. As such, functional medicine targets the specific manifestations of disease in each individual.

While the principles of functional medicine date back to the age of Hippocrates, current practice and payment structures do not support this type of system. Health care is largely focused on treating diseases instead of preventing them. Many patients often fall into the conventional medicinal cycle as prescription after prescription is prescribed to treat symptoms of core issues instead of the core issues themselves. This is not to say that medications do not have their place but that following a simple algorithm of “disease A requires drug X” is not always optimal for managing chronic diseases or achieving optimal health. Functional medicine takes a deeper look into the patient’s lifestyle, disease, and environment to uncover the core issues and resolve them. A comparison of the differences between traditional medicine and functional medicine can be viewed in Table 1.

<b>Traditional medicine</b>	<b>Functional medicine</b>
Disease oriented	Health oriented
Doctor centered	Patient centered
Organ specific	Holistic
Specialized	Biochemical individuality
Diagnosis based on symptoms	Looks at underlying cause of disease
(Early) Detection of disease	Prevention approach

### **PHARMACISTS’ ROLE IN FUNCTIONAL MEDICINE**

Unfortunately, the current health care delivery model in the United States is not structured for providing holistic, patient-centered care. Although many physicians would like to work with patients for 30-60 minutes each appointment, average visits with doctors and medical residents are 12 and eight minutes respectively. In that short of a timeframe, it is nearly impossible to provide proper and all-encompassing care for multiple chronic disease states. Additionally, recent research by the Association of American Medical Colleges predicted that the current physician shortage experienced by the United States could increase up to a staggering amount of 120,000 physicians by the year 2030. Current shortages have led to patients waiting an average of 24 days for an appointment, a steep increase from the 2014 average wait time of 18.5 days.

With the current time constraints of physicians, pharmacists have the opportunity to fill this primary care void. Pharmacists are considered one of the most accessible and trusted health professionals, a point confirmed in 2017 Gallup results in which pharmacists ranked as one of the top five most trusted professions. They serve as a follow-up point of contact after a physician’s visit, and commonly are the last health care professional to check in with the patient and address any concerns or needs they may have. Often acting as the central coordinator for patients, pharmacists are already well situated to implement the principles of functional medicine into their practice.

Along with the physician shortage, the millennial generation presents a unique opportunity for practicing functional medicine. According to a recent article in the *Washington Post*, a large portion of millennials report that they do not have an established relationship with a provider. Specifically, the article noted that millennials are looking for quick, accessible, and convenient care. Pharmacists are well positioned to fill the void for patients not having a consistent health care provider, also helping decrease the aforementioned wait times. Moreover, as many millennials seek to focus on health, nutrition, and wellness, functional medicine presents a pivotal opportunity for pharmacies to reframe themselves as prevention centers in the eyes of younger generations.

The extensive training that pharmacists receive during their education, especially in the areas of biology and chemistry, situates them to successfully provide information to patients regarding nonpharmacologic treatment options, dietary supplements, and more. Achieving this paradigm shift would enhance pharmacy’s presence in the health care space, increase store traffic, and allow all generations to better understand the role a pharmacist can have in their care.

Beyond establishing and enhancing relationships with patients, the practice of functional medicine utilizes a collaborative practice model, connecting licensed providers such as medical doctors, nurse practitioners, and allied providers (such as trainers and physical therapists) together. Although pharmacists historically have not been recognized as providers, over the past several years, pharmacist responsibilities have expanded and will continue to expand. Increasingly, pharmacists are trained to administer immunizations, monitor blood glucose and blood pressure, perform bone density screenings, and more. Furthermore, pharmacists are apt to review and interpret clinical results and lab values to both understand the effectiveness of a patient’s drug

regimen and make recommendations to the physician. As public acknowledgement of pharmacists' value to the health care team continues to grow, functional medicine presents an opportunity for pharmacists to utilize these expanded roles, while simultaneously enhancing provider-pharmacist collaborations and the profession's integration into the health care team.

Specifically, independent pharmacists are well situated to incorporate functional medicine into their practice because of the flexibility they have to adapt their services to the needs of the communities they serve. Relying solely on filling and dispensing prescription medications is no longer sufficient for maintaining a business' success. By offering expanded services like those under the functional medicine umbrella, pharmacies can create niche spaces for themselves in their community. As patients continually seek new modalities for addressing their health, functional medicine creates an opportunity for patients to both better understand and improve upon their wellness. It allows pharmacies to act as both a prevention and treatment hub for their patients, while serving as a method for diversifying revenue.

### FUNCTIONAL MEDICINE TRAINING

While there are institutes and accrediting bodies that provide education and training in the principles of functional medicine, it is up to the individual pharmacist whether or not to pursue the certification path. Pharmacists are eligible to obtain certification through the Institute for Functional Medicine or the American Academy for Anti-Aging and Functional Medicine. Both

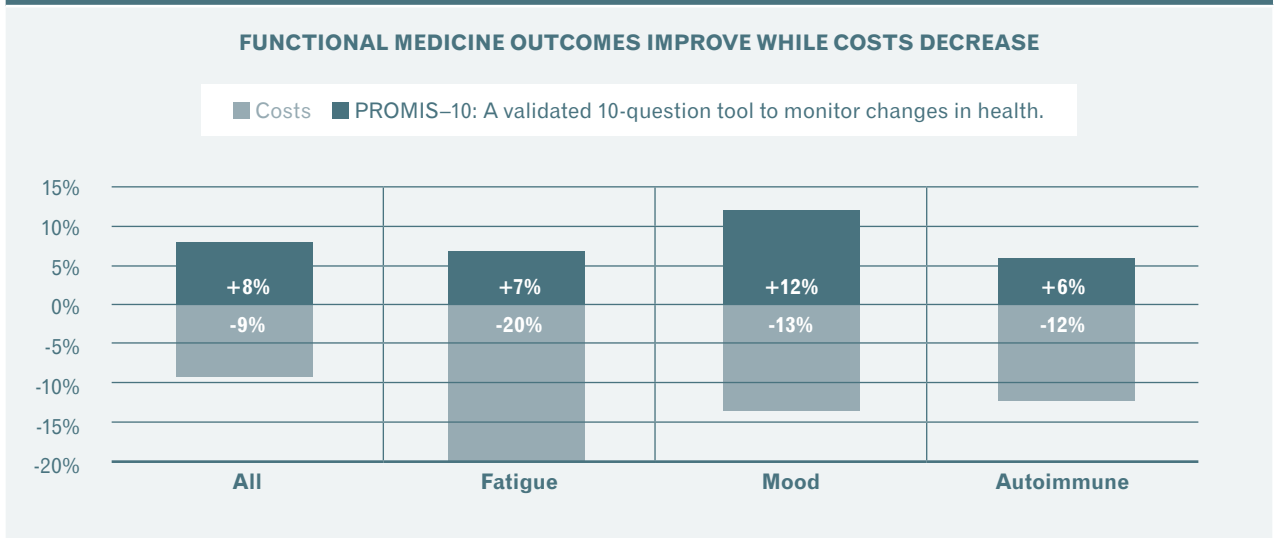
organizations offer membership and various education opportunities for knowledge expansion in functional medicine topics.

Training and certification can take months to years to complete and potentially requires a significant investment of financial resources. Both programs offer multiple training courses for certification, often surrounding topics such as autoimmune disorders, gut health, hormones, and cardiometabolic disorders, to a name a few. While each of the accrediting bodies offers their information in a different way, both run on the premise that thinking about an individual's disease state in its entirety is the key to achieving optimal health. Through these courses, pharmacists will learn the biological principles of the different disease states and important considerations with each.

### FUNCTIONAL MEDICINE PRACTICES

Pharmacists are often practicing functional medicine without even realizing it. When a pharmacist dispenses a drug that is known to commonly deplete a nutrient and concurrently recommends a supplement to counteract this depletion, they are utilizing principles of functional medicine. Pharmacists are armed to think critically about the root cause of a patient's symptoms and make logical recommendations because of their knowledge of specific disease states and associated biologic pathways, including an in-depth understanding of human processes at a cellular level. In turn, functional medicine tactics have led to self-identified disease state improvements with concurrent decreases in health care spending, a point exemplified in Figure 2.

**Figure 2. Results from a Cleveland Clinic study that show self-reported outcome improvements and decreased disease state costs after six appointments with a functional medicine provider. (Image courtesy of Institute for Functional Medicine.)**



### **Motivational interviewing**

Communication, including motivational interviewing and open-ended questions, is pertinent in functional medicine for providers to understand a patient's symptoms, goals, and motivations for improving their health. Communicating with patients in this way allows pharmacists to dig deeper into a patient's symptoms and better understand additional, less obvious factors that may be contributing to a patient's illness. Additionally, recognizing factors that are important and motivate a patient substantiates the pharmacist's recommendations and makes sustainability more likely.

### **Genomic testing**

In 2003, the Human Genome Project concluded with the complete sequencing of the human genome. This milestone accomplishment has been integral in the advent of various genetic tests that can identify potential risk for disease, inform nutrition recommendations, and give insight into the way an individual may process and respond to medications. Throughout the years, an increased focus on pharmacogenomics and nutrigenomics has thoroughly expanded the way in which we utilize an individual's DNA to understand and treat diseases. Specifically, pharmacists can utilize genomic tests to optimize treatments for their patients. For instance, by initiating a patient on a medication which, according to their genetics, they are more likely to respond to, the pharmacist can reduce standard trial and error practices while also mitigating adverse events and unnecessary health care spending. Along with enhancing the level of care and recommendations a pharmacist is able to provide, genomic testing is almost entirely a cash-based revenue opportunity at this time.

### **Point-of-care testing**

Point-of-care tests can also be integrated into a functional medicine consultation to assess an individual's disease state. Examples include cholesterol, INR, and HbA1c screenings to name a few. Offering these tests allows both the pharmacist and patient to monitor and track important data related to the patient's health. Many of these tests are already being performed in pharmacies and provide opportunities to collaborate with physicians and increase revenue.

### **Weight management**

The prevalence of obesity has increased exponentially in the last 30 years. Patients who are obese are at higher risks of developing chronic diseases, mortality, and enduring elevated health care spending. Moreover, obesity can impact an individual's mood, energy, and overall well-being. Since pharmacists often see patients on a monthly

basis, they are well situated to discuss weight loss goals with patients and act as an accountability resource. Utilizing cash-based appointment models, pharmacists can engage with patients regarding their weight loss goals as well as provide education on nutrition and physical activity. Additionally, pharmacists can examine drug regimens and disease states to determine their potential impact on an individual's ability to lose weight. Because many symptoms a patient experiences can derive from their weight and physical activity, weight management programs align with goals of functional medicine for treating symptom causes instead of the symptoms themselves.

### **Elimination diets**

Elimination diets set a foundation for patients to self-assess foods that may be underlying causes for symptoms they are experiencing. During an elimination diet, patients start by eliminating possible offending foods for multiple weeks. Most commonly, this will include dairy, wheat, gluten, and peanuts. Patients can also take food sensitivity tests to indicate specific foods they should consider avoiding. After certain foods have successfully been eliminated for multiple weeks, the patient may begin reintroducing one food at a time. When reintroducing foods and determining if it is symptom-causing, the patient should eat small amounts of the food and wait three days between each attempt. If the patient experiences symptoms after eating the food, it is recommended that it be further avoided. If the patient does not experience symptoms when eating the food, they can continue to reintroduce it in small amounts, eventually decreasing the number of days between retrials. This process is continued until all eliminated foods are retried.

Pharmacies can generate profits by selling food sensitivity tests, performing or assisting with sample collection, and offering consultations to the individual upon receipt of results. By utilizing these tests, pharmacists can help patients recognize and identify symptoms that they are experiencing in relation to certain food items that they may not have noticed before. Additionally, by selling the tests in store and offering cash-based appointments for review, pharmacists have an opportunity to generate additional revenue.

### **Nutrient deficiency, depletion, and the role of supplements**

Nutrition is fundamental for proper functioning of the human body. When not supported with proper and appropriate amounts of nutrition, the body adapts, often resulting in symptoms such as weight gain or low energy. This results from either nutrient deficiency, which is caused by inadequate dietary intake, or nutrient depletion, a loss

created by an outside influence. Many patients are at risk of developing a nutrient depletion in result to a medication's side effects or mechanism of action. This can, in turn, produce additional symptoms or adverse events for the individual. For example, antibiotics kill both good and bad bacteria, causing decreases in the microbiota lining the guts and intestines. This can further lead to antibiotic-associated diarrhea, poor nutrient absorption, and more. Thus, to combat this issue and replenish necessary bacteria for proper digestive health, patients are recommended to take probiotics in tandem to reduce antibiotics' impact on the gut.

Additionally, many biological processes rely on the presence of certain nutrients to function optimally. By asking questions to gain further insight into the patient's symptoms, pharmacists can make supplemental recommendations to optimize the performance of the individual's biology prior to or in lieu of introducing another medication. Due to their extensive education and training, pharmacists should be confident in their ability to make supplement recommendations based on assessing a patient's disease states, medications, and lifestyle. Also, since pharmacies are already selling vitamins in the front of their stores, enhancing pharmacist-to-patient education on supplements will improve profits from supplement sales.

### **Compounding**

Approximately 59 percent of pharmacies in the United States engage in some level of compounding, with 6 percent of this population reporting that more than half of their total prescriptions dispensed were compounds. Preparing compounded medications allows pharmacists to fulfill the goals of functional medicine by providing individualized care. Beyond its impact on patient care, offering this niche service enables pharmacies to differentiate themselves from their competitors.

### **Hormone replacement therapies**

Specifically, in relation to hormones, data from the Centers for Disease Control and Prevention shows that about 74 percent of women who had both ovaries removed and 50 percent of women with a complete hysterectomy have utilized hormone replacement therapy. Additionally, 29 percent of women with natural menopause have used this treatment method. These statistics reveal an opportunity for pharmacists to not only educate patients on proper treatment following this dynamic life change, but also to provide the associated medications and adjust as appropriate. Similarly, men who need testosterone can benefit from hormone replacement therapies, including compounds or injections. Because hormones can play a large

role in an individual's weight, mood, and other disease states, utilizing functional medicine principles to better understand a patient's symptoms, and their connection to their hormones, is vital for providing appropriate care.

### **Complementary and alternative medicine**

Along with medicinal remedies, alternative and complementary therapies can be utilized to manage a patient's health and well-being, improve sleep, reduce stress, manage weight, and more. Common alternative therapies include meditation, yoga, exercise, aromatherapy, acupuncture, and massage therapy. Utilizing stand-alone alternative therapies or complementary treatment methods have both physical and psychological benefits to an individual's health and well-being. Offering these services or creating relationships with specialists in the community to refer patients, can enhance the pharmacy's presence and outreach in the community as well as help to reframe the pharmacy as the community's prevention and treatment hub.

## **IMPLEMENTING FUNCTIONAL MEDICINE IN THE INDEPENDENT SPACE**

Implementing functional medicine into a pharmacy can begin small and continually expand into a more developed and robust program. Ultimately, integrating functional medicine into the pharmacy is dependent on an individual pharmacy's needs and capabilities. Beginning with small changes initially can make introducing functional medicine into the pharmacy space more attainable and seamless. For example, recommending supplements for medications with known nutrient-depleting effects can be as simple as creating a drug alert and attaching a flyer to the prescription notifying a patient of the risk. Another opportunity includes promoting the physical well-being of patients by either starting a yoga class or collaborating with a local fitness organization to offer collaborative, health promotion events. From there, incorporating functional medicine can expand further into an appointment-based model where the pharmacist sits one-on-one with patients to discuss in depth their medications, symptoms, and improvement goals. Integrating functional medicine can occur in multiple steps and various ways, as there is no "one size fits all" plan. Each pharmacy must pursue what is best for its business and its patients.

### **Appointment-based model**

Appointment-based models are one way for pharmacists to incorporate functional medicine into everyday practice. Similar to how someone would schedule time to meet with a physician, dietitian, or physical trainer, the patient would do the same with the pharmacist. Utilizing an appointment model sets the stage for patients to value



their time with pharmacists to the same degree as other appointment-based specialties, and allows pharmacists to have designated, protected time for working with their patients. During appointments, the pharmacist and patient can discuss the patient's symptoms, medications, disease states, and health goals.

Along with providing protected time, using an appointment-based model allows the pharmacist to adequately staff the pharmacy to support their absence from the bench, anticipate and prepare for the consultation and concurrently solidify the pharmacist as a respected health care provider on the patient care team. An added benefit to this appointment style is that there is no pharmacy benefit manager or middleman to deal with as insurance is not commonly involved. This allows the pharmacy to set their own prices for their services and related products, which in turn provides the pharmacy with direct control over their profit margins. Ultimately, utilizing cash-based appointments both increases the pharmacy's revenue and promotes a patient to have ownership and investment in their health.

### **Staff utilization**

Staff members can be utilized in a multitude of ways to support integration of functional medicine into the pharmacy. Training staff members on over-the-counter products available to patients allows staff to help disperse important information and assist patients in finding the pharmacist's recommended products, as well as recognize when to triage the patient to the pharmacist. Additionally, support staff members can be used to direct phone calls appropriately, manage the pharmacist's appointment schedule, and more. While these may be tasks in which technicians and other staff members already engage, by truly recognizing areas where a pharmacist can transition their responsibilities to their staff members, the pharmacy as a whole will be more apt to adopt functional medicine practices. By expanding technician roles and responsibilities, as well as engaging them with functional medicine's adoption goals, pharmacists can better utilize and delegate their time to develop, promote, and pursue aspects of functional medicine within the pharmacy.

### **Marketing**

Because functional medicine is a paradigm shift in the way chronic disease states are treated and managed, pharmacies integrating functional medicine into their practice will need to adequately educate the public and local health care providers on their services and potential. For decades, pharmacies have been viewed primarily as drug dispensaries. While dynamic changes of pharmacists' roles and offerings in the community space have

aided in evolving the perception of pharmacists, the majority of the public are still not fully aware of pharmacists' education and capabilities, including their ability to serve as a resource for health care. Additionally, pharmacies are most commonly associated with treatment, not prevention. This point further emphasizes the need for pharmacists to educate the community and their patients that a pharmacy's role in providing health care begins before a disease or its symptoms even begin. Repositioning and aligning pharmacies as both a prevention and treatment center in an individual's health journey is critical not only for improving perceptions regarding pharmacists' capabilities, but also for the success of pharmacies in a market where simply filling prescriptions is no longer enough.

## **CONTROVERSIES SURROUNDING FUNCTIONAL MEDICINE**

Because functional medicine is an innovative way to address chronic issues, research supporting the integration of this practice into community pharmacy is limited. Due to this, some may hesitate to fully accept functional medicine as a viable practice model. Although functional medicine is a new avenue for pharmacists to pursue, much like diabetic counseling or immunization administration, adopting it into practice would allow pharmacists to perform to the top of their degree and significantly impact patient health outcomes. Further, as addressed previously, many pharmacies are already practicing functional medicine principles without even realizing it.

### **Accurate information**

Similar to the misinformation that exists with many fad diets, it is equally important that patients are receiving accurate and proven information regarding supplements and alternative therapies. As pharmacists look to integrate functional medicine methods into their practice, it is important that they ensure the information they are providing their patients with has been researched and proven. Pharmacists can address concerns associated with misinformation by educating themselves on disease states that most commonly affect their patient population. Focusing on one disease state or pathway at a time and becoming an expert in that area allows pharmacists to ensure their recommendations are accurate, appropriate, and data-driven.

### **Provider acceptance**

Another potential difficulty includes gaining provider acceptance. To combat questioning of pharmacy in this space, it is important for pharmacists to educate physicians on the services they are providing and communicate with their local providers about the purpose of integrating functional medicine into pharmacies. Creating an open dialogue between pharmacists and practitioners will aid

in providers' understanding the role of functional medicine in the treatment cascade. Ultimately, in proving the value of this service and its intention to create collaborative practice engagement between professions, pharmacists are more likely to receive support for pursuing functional medicine in their communities.

### Patient cost

One of the barriers patients face is the out-of-pocket cost for a consultation or other cash-based services. This cost can be justified by analyzing the benefits provided. For example, use and selection of high-quality, standardized supplementation leads to decreased medication costs, resolution of chronic symptoms, and a reduction in doctor visits and medication requirements, in turn lowering overall health care costs. Additionally, pharmacists' unique position as one of the most accessible health care providers puts them within easy reach of patients if they have questions or concerns. It is important to note that not all services have to be cash based. Pharmacists should work with their patients to understand and identify services that can be covered by insurance or billed for in another way, such as through a patient's provider.

### CONCLUSION

As the prevalence of chronic diseases continues to rise and patient desires for different treatment modalities increase, independent pharmacies are positioned to dive into this niche space and make it their own. With extensive training and understanding of biological processes that medications work on, pharmacists possess the skills necessary for addressing a patient's disease state in its entirety. Utilizing functional medicine principles, pharmacists can increase revenue through recommendation of supplements and nutrients, pursuit of an appointment-based model for consultations, and, most importantly, they can help their patients to achieve health outcomes that before may have been unobtainable. Diseases impact each patient differently, and it is time that this is fully acknowledged and that patients are recognized and treated as the individuals they are. ■

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## Continuing Education Quiz

Select the correct answer.

Use the following case to answer questions 1-3  
JD is an independent pharmacist who just learned about functional medicine. She is not planning to pursue a functional medicine certification but is interested in expanding her knowledge. JD has set a goal to implement an appointment-based model at her pharmacy in the next six months. She is currently creating a business plan for communicating her goals with her staff and educating her local providers about the opportunity.

1. JD is not certified in functional medicine, but can she still offer functional medicine?
  - a. No, to offer functional medicine, JD is required to obtain her certification first.
  - b. No, JD can begin offering basic functional medicine services but only if she is enrolled in a certification program.
  - c. Yes, but if JD begins offering functional medicine services without a certification, she can't change her mind and get her certification later.
  - d. Yes, JD does not need to be certified to offer functional medicine in her practice and is eligible to pursue certification at any point.
  
2. JD is looking to implement an appointment-based model for offering functional medicine consultations in six months. What can she do in the meantime to introduce functional medicine into her pharmacy?
  - a. Recommend a weekly yoga session at the studio next to the pharmacy.
  - b. Educate patients and local providers on the services she is planning to offer.
  - c. Use her computer software to populate supplement recommendations with specific medications.
  - d. All of the above.
  
3. When talking with providers about functional medicine, JD should highlight that:
  - a. Through functional medicine, pharmacists will start diagnosing patient disease states.
  - b. The goal of functional medicine is to enhance collaboration between professions and allow the provider to focus on more complicated patients.
  - c. Functional medicine is intended to increase the number of prescriptions a patient takes.
  - d. Pharmacists are not interested in using functional medicine practices to increase collaboration with other health care professions.



4. By 2030, it is estimated that the United States' physician shortage will be:
- 50,000 physicians.
  - 120,000 physicians.
  - 200,000 physicians.
  - 350,000 physicians.
5. Which of the following statements is correct?
- Millennials present an opportunity for functional medicine because many are just getting off of their parents' insurance and need to take care of their own health care.
  - Millennials present an opportunity for functional medicine because many do not have a primary health care provider and desire quick, accessible, and convenient care.
  - Millennials present an opportunity for functional medicine because many pharmacists are millennials themselves.
  - Millennials do not present an opportunity for functional medicine; this practice is intended for treatment of chronic disease in older generations.
6. Functional medicine differs from traditional medicine in that it:
- Is health oriented.
  - Is holistic.
  - Looks at underlying causes of disease.
  - Is all of the above.
7. Incorporating functional medicine into a community pharmacy will help define the pharmacy as:
- A treatment hub for patients.
  - A prevention hub for patients.
  - A prevention and treatment hub for patients.
  - Primarily a drug dispensary.
8. According to the Institute for Functional Medicine, functional medicine is defined as
- An individualized, doctor-centered, science-based approach that empowers patients and practitioners to work against each other to address the underlying causes of disease and promote optimal wellness.
  - An individualized, patient-centered, science-based approach that empowers patients and practitioners to work together to address the underlying causes of disease and promote optimal wellness.
  - A disease-oriented, doctor-centered, "everyone is treated the same" approach that empowers patients and practitioners to work together to address the underlying causes of disease and promote optimal wellness.
  - A disease-oriented, doctor-centered, science-based approach that empowers patients and practitioners to work together to address the underlying causes of disease and promote optimal wellness.
9. Functional medicine leverages laboratory tests to further understand what patient factor(s)?
- Current medications and adherence to those medicines.
  - Genetic, biochemical, and lifestyle influences.
  - The influence of an individual's past disease states.
  - Drug interactions between current medications.
10. Improper nutrition can be caused by:
- Inadequate dietary intake.
  - Depletion by external forces.
  - Both A and B.
  - None of the above.
11. In functional medicine, which communication technique is best for pharmacists to use with patients?
- Motivational interviewing.
  - Influential and dominant speech.
  - Negotiation.
  - Passive conversation.
12. Resolution of chronic symptoms through functional medicine will lead to:
- Reducing overall health costs.
  - Reducing doctor visits.
  - Increasing overall quality of life.
  - All of the above.
13. Training staff on OTC products allows staff to:
- Help disperse important information about these products.
  - Assist patients in finding the recommended products in the store.
  - Triage the patient to the pharmacist when appropriate.
  - All of the above.