Upon completion of this activity, the pharmacist should be able to:
1. Describe the different types of diabetes education in the independent pharmacy setting.
2. Explain the advantages of attracting a diabetes patient to an independent pharmacy.
3. List the ancillary services pharmacists can provide to diabetes patients in addition to education.
4. Discuss the different parts of the health care team and their role in the treatment of the diabetes patient.
5. Describe motivational interviewing and its role in diabetes education.
6. Explain the empowerment model and its advantages in communicating with the diabetes patient.
7. Describe the use of conversation maps and other techniques designed to enhance communication with the patient.

INTRODUCTION
One of the most important factors in diabetes management is patient education. When patients are first diagnosed with either type 1 or type 2 diabetes, they often know very little about their condition. In fact, most diabetes patients have questions about controlling their condition. From healthy eating to exercise and medications, persons living with diabetes are desperate for someone to explain the mystery of diabetes management.

Clinicians have also openly expressed a desire to further educate patients living with diabetes about their health. Many physicians prescribe diabetes education to both newly diagnosed patients and patients with a history of the disease that are not well controlled. As a result of their lack of knowledge about their condition, patients are often embarrassed and frightened about their future with diabetes. After being diagnosed with diabetes, many patients experience denial about the severity of their condition or feel helpless in managing it on their own. With the myriad of questions presented by patients, pharmacists can play a very important role in their diabetes education. Not only can pharmacists offer valuable services to assist patients in self-managing diabetes, but these services can also help to grow a pharmacy’s business and reputation within the community.

TWO DIFFERENT MODELS OF DIABETES EDUCATION
Diabetes education can be divided into two basic types: group and individualized. While both of these types of education are beneficial to patients, they may differ depending on the style the moderator is seeking to create. When trying to decide what type of education experience to offer, it is important to consider the individual patient’s wants and needs as well as insurance authorization. In addition, pharmacists should consider their current patient population and discover the best method to fit their specific needs.

There are many advantages to the individualized patient education approach. In this traditional one-on-one style, the pharmacist educates the patient over several visits or in longer sessions and is able to develop a trust-based relationship with the patient. The pharmacist meets with the patient individually or in small groups and reviews the patient’s lab values, identifies specific barriers to learning, and creates an action plan toward improving the patient’s condition. When meeting for education in small groups, the education method remains individualized. Also, using this method, the pharmacist is able to tailor each
session to be specific to the patient’s needs, education level, disease state, and medications. This intensive and individualized method is the preferred route of diabetes education whenever feasible. However, this type of education is not always possible due to several reasons, including insurance coverage, availability of a quality diabetes education program, and willingness of the patient to enroll in an intensive program.

From the standpoint of the pharmacy, several possible barriers may present themselves when attempting to create an individualized program. First, pharmacists must be willing to have a semi-private area located inside the pharmacy (unless the pharmacist is able to meet with patients at another location). Second, pharmacists must be able to charge for a private consultation to cover the costs associated with offering the individualized service. Finally, pharmacists must be able to effectively integrate a diabetes self-management education program in the usual workflow of the pharmacy. Each of these barriers, however, can be overcome with a proper game plan, which will be explained in greater detail later in this article. Many pharmacies have successfully created diabetes niches through this powerful and effective method of empowering persons living with diabetes.

In contrast to the individualized technique is education offered in a group setting. While the individualized setting may also be in small groups, group education is designed to educate a large number of patients. However, the pharmacist may choose not to create an individualized plan, nor will they identify barriers to learning or areas of improvement. Using this more open, less invasive style of education, a pharmacist is able to educate a large number of patients in a classroom-like setting. Patients often feel more comfortable and are encouraged to invite family and friends to the classes, which allows for an area of growth within the pharmacy. When a patient is able to invite someone to join them in a diabetes education class, the pharmacy is able to stir up interest and potentially bring in future patients. This approach is less likely to build a strong pharmacist-patient relationship, but allows for a greater amount of peer-support among the patients in the class. One of the disadvantages of this style of education is that many patients may feel the inability to discuss their personal condition in detail within the classroom approach. This style of education is typically not reimbursable by most major insurances. However, pharmacies may realize above-average growth due to attracting new diabetes customers to the pharmacy.

COSTS
The costs associated with diabetes are staggering. According to the National Center for Disease Prevention and Health Promotion’s *Diabetes at a Glance 2010*:

- **Total costs** (direct and indirect) of diabetes are $174 billion.
- **Direct medical costs** equal $116 billion.
- **Indirect costs** (related to disability, work loss, premature death) are $58 billion.

People with diagnosed diabetes also have medical expenditures that are about 2.3 times higher than medical expenditures for people without diabetes. By attracting a patient living with diabetes through innovative educational programs, the pharmacist is able increase foot traffic into the store. As a secondary windfall benefit to attracting new patients into the pharmacy, the pharmacy also typically increases their prescription volume as well as OTC and other ancillary supplies.

It is easy to see that there are advantages and disadvantages to each educational setting. Many pharmacies choose to use both of these methods in conjunction to find the perfect balance for their patients.

When creating an individualized diabetes self-management program, special attention should be paid toward utilizing communication methods designed to maximize patient encounters. There are many different education and counseling styles to take into consideration. These styles include motivational interviewing, the empowerment model, and the use of conversation maps.

**MOTIVATIONAL INTERVIEWING**

The concept of motivational interviewing was first introduced in the 1990s and is defined as “a directive, client-centered counseling style for eliciting behavior change by helping clients explore and resolve ambivalence.” This style
of patient counseling is goal-directed, allowing patients to educate the pharmacist about their goals while allowing the pharmacist to give advice. Motivational interviewing is centered around the acronym FRAMES, which stands for Feedback, Responsibility for change lying with the individual, Advice-giving, providing a Menu of change options, an Empathic counseling style, and enhancement of Self-efficacy. It is clear to see that using this approach allows the patient to be in control of the pace and direction of their education. There are a few counseling tools that are essential to have when using the motivational interviewing technique including open ended questions, affirmations, reflective listening, and the use of summaries.

Open-ended questions are designed to encourage patients to educate the pharmacist of their knowledge about their disease state and medications. The goal is to ask questions that will persuade the patient to answer with statements beyond “yes” and “no.” Examples include, “What brings you here today?” and “What have your doctors told you about your condition?” This type of conversation encourages the patient to be the speaker and the pharmacist to be the listener. These questions allow patients to reveal their goals to the pharmacist when they are comfortable and lead their own education. The forward movement is guided by the patient and allows the pharmacist to see what is most important from the patient’s perspective.

Affirmations are statements that confirm a patient’s strengths. These affirmations are important because patients are often embarrassed by their condition and believe that they are not able to change on their own. By using statements of affirmation the pharmacist builds patients up on their own strengths. This allows the patient and the pharmacist to develop a plan that uses the patient’s personal strengths as a focus, which leads to more patient-driven success.

Reflective listening is the cornerstone of the motivational interviewing method. The most important aspect of any conversation is active listening. By repeating and reflecting upon what the patient is sharing, the pharmacist is able to pinpoint sources of discouragement and encourage patients to expand upon what has not worked for them in the past. It is vital to show patients that you are listening to their feelings and concerns. By using sentences such as, “What I hear is that you have failed in managing your diabetes in the past and are weary to try again,” you are able to share the patient’s emotions and ensure that they are being understood.

The last tool in the motivational interviewing toolbox is the use of summaries. Counseling and education can be overwhelming to a patient, and using a summary to wrap-up the conversation allows the patient to leave with a few main points to focus on until the next meeting. Upon completion of the conversation, the pharmacist should decide on three to five of the most important points covered during the meeting and sum them up with the patient. This summary can be presented verbally, but it may be more beneficial for patients to have their goals in written form. This will give the patient a visual list of a few important things to use as goals until the next meeting. By focusing in on just a few goals, the patient will not leave overwhelmed and has a better chance of returning to the next meeting successful and able to tackle new challenges.

The goal of motivational interviewing is patient-guided forward movement in understanding their condition and beginning to manage it on their own. By using the few tools mentioned, pharmacists will create a relationship of trust with their patient, which will lead to open and goal-oriented counseling and education. This method of education is most beneficial in one-on-one, individual sessions that can be led by one patient.

THE EMPOWERMENT MODEL
Another effective method of patient education is the empowerment model. The idea behind this style of patient interaction is that “the individual is not blamed for his or her problems but is responsible for generating a solution.” The empowerment model is very useful in the health care setting because patients are not to be blamed for their condition or disease. This method allows a single patient or group of patients to be empowered to make their own choices. Much like motivational interviewing, patients are in control of the goals of their disease management and are responsible for applying these goals in their everyday life. The empowerment model is ideal for use in a self-management program such as diabetes education. It is centered
on patient involvement, and encourages patients to ask questions to further empower them to manage their own condition. Similar to motivational interviewing, the empowerment model is based in active decision making by the patient. This method of patient education could be applied effectively in either an individual or group setting.

CONVERSATION MAPS
Lastly, a pharmacist can use the aid of conversation maps to educate their patients with diabetes about their condition. Conversation maps are supplied in a variety of shapes and sizes and cover many different topics related to health conditions, specifically diabetes. These colorful, interactive maps are used to introduce facts and tips relevant to the patient’s disease state that inspire conversation. Conversation maps actively engage small groups of patients in conversations, with the goal of creating strategies for disease management. As the group of patients begin the conversation, the map encourages discussion among them centered on a specific topic, such as education about the disease state, signs and symptoms, and medications. As the group journeys along the conversation map, they encounter some discussions that are led by question and answer cards, which are usually provided. The tabletop display promotes peer support within the group, which is a key difference between conversation maps and motivational interviewing or the empowerment model. The conversation map supports a discussion between patients, guided by the occasional aid of a pharmacist, whereas motivational interviewing and the empowerment model use the pharmacist in a more verbal role. For this reason, the conversation map is best used in a small-group setting. If a larger patient population is being approached, dividing the larger group into small groups, each having different conversation maps, is an effective way to utilize this useful tool.

There are a variety of different environments for patient education and many theories that can be employed to help a pharmacist counsel his or her patients. The most important thing to take into consideration when beginning to plan for a diabetes education program is the patient population. Population size, disease severity, patient personalities, and desired growth in the pharmacy are all factors to be thought out when designing a program.

THE BUSINESS OF ATTRACTION A DIABETES PATIENT
In the latest edition of Diabetes at a Glance 2010, the National Center for Disease Prevention and Health Promotion revealed that 23.6 million people living in the United States have diabetes. Pharmacists are playing a key role in assisting patients living with diabetes by offering the following:

- Medications
- Disease/medication education
- Durable medical equipment
- Over the counter (OTC) supplies
- Insulin pump training and supplies
- Medication therapy management (MTM)
- Weight management
- Cholesterol management
- Immunizations

As the health care system continues to evolve, the role of the pharmacist is evolving as well. Pharmacists are acting as health coaches and partnering with their patients to improve their health in each of the above-listed roles.

Medications
The traditional backbone of pharmacy practice, dispensing medications, remains the primary role of the pharmacist. Care should be taken, however, in this arena to ensure that pharmacists are maximizing their influence and knowledge with the patient. For example, pharmacists should monitor their patients’ adherence, offering encouragement, a healthy accountability, and consider reporting their findings to the physician. Pharmacists should also take an active role in counseling their patients on their medications, especially at the time of first fill. One tool to be considered is a Medication Reconciliation Form, which is a written document describing each medication a patient takes. This form is typically designed to be used at physician visits and should be utilized when ordering refills.

Disease/Medication Education
Pharmacists are highly trained and excel in disease management. From one-on-one consultations to large group presentations, pharmacists across the country are developing diabetes education programs designed to empower persons...
living with diabetes with the proper knowledge needed for adequate control. Many pharmacists have also decided to take the next step in disease education and are able to bill third party insurances including Medicare, for their efforts. In order to bill for the educational services, most insurances require recognition for their diabetes self-management education program through one of three governing bodies (see Table 1).

To be recognized by one of the above sources for diabetes self-management education, pharmacists must prepare for an application process that demonstrates their program meets the required standards, such as proper documentation and positive outcomes, just to name a few. Pharmacists desiring more information about attaining recognition from one of the above sources should visit their respective websites or contact the organization directly.

Pharmacists may also decide to utilize their knowledge of diabetes to attract new diabetes patients to their store. For example, many have created large group monthly diabetes education classes, often offered at no charge, in order to set themselves apart from their competition. By offering classes, the pharmacist is able to share key insights into living with diabetes to an audience that may not currently use their particular pharmacy. In return, the pharmacist also attracts a diabetes patient that has an above average pharmacy spend each year.

The cost of creating in-store or nearby diabetes educational classes is typically minimal. Pharmacies that offer one-on-one and small group classes should aim to attain recognition for diabetes self-management in order to bill third parties. Offering an intensive program without charging for the services is typically cost prohibitive, due to the time the pharmacist must spend away from the usual duties of filling prescriptions. However, once the pharmacy is able to bill insurances (or is able to charge the patient directly for educational services), the pharmacy should see a positive cash flow quickly due to direct reimbursement of the service. Alternatively, pharmacies that offer once-monthly classes in the large group setting are also maximizing their time by attracting a larger gathering at one time. Classes should last approximately one hour, which maximizes both the pharmacist’s and the patients’ time. These classes may be offered at no charge because new patients will be attracted to the class and may decide to begin using the pharmacy for their health care needs. With the time commitment for each pharmacist being approximately one hour per month, the pharmacist is able to offer an innovative program that sets him or her apart from the competition without adding staff or other significant costs.

### Durable Medical Equipment

Pharmacists can provide durable medical equipment (DME) services to diabetes patients to improve mobility and activities of daily living (ADL), just to name a few. DME services may include, but are not limited to, the following:

<table>
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<tr>
<th>Table 2</th>
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<tbody>
<tr>
<td>Diabetes footwear (therapeutic shoes)</td>
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<tr>
<td>Walkers/wheelchairs/mobility products</td>
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<tr>
<td>Diabetes testing supplies</td>
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### Diabetes Footwear (Therapeutic Shoes)

The addition of diabetes footwear to the pharmacy offering is extremely beneficial both to the patient as well as to the pharmacy’s bottom line. Diabetes footwear can reduce the amount of foot-related wounds due to poor fitting shoes, as well as improve foot support. With proper training, therapeutic shoe fittings are a service that pharmacists can use to attract a greater number of diabetes patients as well. The advantages of offering a therapeutic shoe niche include:

- Above-average direct revenue generation (for sales of therapeutic shoes and supportive inserts)
- Increased number of patients living with diabetes visiting the pharmacy

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Table 1. Pharmacies may receive recognition of their diabetes self-management educational programs from one of the following sources:

- www.diabetes.org
  American Diabetes Association (ADA)
- www.diabeteseducator.org
  American Association of Diabetes Educators (AADE)
- www.ihs.gov
  Indian Health Service (IHS)
• Increase in transferred prescriptions of diabetes patients to the pharmacy (due to attracting new diabetes patients to the pharmacy)
• Increased ancillary sales (due to increased traffic inside the pharmacy)

Pharmacists have the opportunity to quickly grow their base of diabetes patients by adding this valuable service.

**Walkers/Wheelchairs, other DME Products**
By attracting diabetes patients to the pharmacy, pharmacists can also expect to see an increase in their DME sales. From walkers and other mobility products to bathroom safety products, pharmacists should offer DME services whenever possible.

**Diabetes Testing Supplies**
One of the keys to controlling diabetes is through testing blood sugar. In doing so, the patient is able to identify hyper- and hypoglycemic events, determine which foods affect their blood sugar, and allow the patient to make adjustments to their lifestyle with an informed decision. Diabetes testing supplies should be offered in any pharmacy whenever feasible. Pharmacists, in particular, should assume the responsibility of counseling their patients on the proper use of testing supplies and assist them, when necessary, in choosing the best meter for their lifestyle. Pharmacists who do not offer diabetes testing supplies risk losing their patients to other pharmacies that offer such services. Community pharmacies should also take an active role in ensuring that patients receive their supplies from their local pharmacy and refrain from using mail order pharmacies.

**OTC Supplies**
Diabetes-related OTC sales were projected to reach $3.4 billion in 2010. This need represents an incredible opportunity for pharmacists to provide a valuable service that benefits both the pharmacist and the patient. Pharmacies should consider creative ways to demystify diabetes-related products and assist patients in choosing OTC items that are the most beneficial to persons living with diabetes. One creative idea many pharmacies utilize, for example, is to create a diabetes-specific section in the store. Located within the diabetes section are OTC items specific to diabetes care and are beneficial to healthy living. Such items may include:

• Sugar-free cough preparations
• Sinus relief medications that do not raise blood pressure/blood sugar
• Creams and lotions designed for the diabetes patient
• Heart-healthy OTC products, such as aspirin and fish oil
• Diabetes meters and supplies

The pharmacist should also be eager to answer questions from customers browsing in the diabetes OTC section of the store. In doing so, the pharmacist will solidify his place in the community as a resource for diabetes knowledge, education, and supplies.

**Insulin Pump Training and Supplies**
Pharmacists with extensive diabetes expertise may also consider offering insulin pump training, support, and supplies. This service, which has recently emerged as a growing niche market for pharmacists in the community setting, offers a myriad of benefits for both the patient and the pharmacy.

According to the American Diabetes Association, the benefits of insulin pumps include:

• Fewer daily injections
• Allows patients to adjust their insulin therapy to fit more closely with their personal lifestyle
• Delivers insulin more accurately than injections
• May improve A1C
• Usually results in fewer large swings in blood glucose levels
• Allows patients to be flexible about when and what they eat
• May improve the patient’s quality of life
• Usually improves large swings in blood sugar levels
• Eliminates unpredictable effects of intermediate- or long-acting insulin
• Usually simplifies diabetes management

There are several ways independent pharmacists can assist patients with insulin pumps.

*Pharmacists can initiate pump therapy*
Before pharmacists initiate pump therapy with a
patient, they should attain the proper credentials and be educated on intensive diabetes management using insulin pump systems. While insulin pump therapy can improve control of diabetes, there is also a risk of harming a patient if the patient uses the pump incorrectly.

Once a pharmacist attains the proper education for initiating insulin pump therapy, he will also need to be certified by each manufacturer of insulin pump devices he wishes to use. This certification will allow them to initiate pump therapy with that particular insulin pump device.

Overall, initiating pump therapy can also be a great alternative revenue stream for the pharmacy. Pharmacists who offer this service are usually paid for pre-pump training (such as carbohydrate counting classes) along with time spent educating the patient on the use of the pump.

Pharmacists can offer post-pump training classes
Patients who begin using an insulin pump device usually benefit from additional training after they have had the opportunity to use the device for a specified amount of time. Pharmacists can provide small group post-pump training classes as well to assist these patients. The manufacturers of insulin pump devices may also cover the cost of these classes.

Pharmacists can offer supplies to insulin pump patients
For pharmacists who do not wish to offer intensive training on insulin pump devices (and for pharmacists who wish to offer both training and supplies), supplies such as infusion set tubing can provide a niche market to the pharmacy, thus preventing the patient from using a large mail order company for services. Patients looking for insulin pump supplies may drive long distances due to the fact that few pharmacies and DME companies offer the needed supplies. Once again, however, pharmacies that offer insulin pump supplies also have an opportunity to gain the customer pharmacy patient as well.

Medication Therapy Management
One of the greatest advances in pharmacy practice over the past decade has been medication therapy management (MTM). Through intensive reviews of patient records, pharmacists are able to improve outcomes, reduce poor outcomes associated with medication-related issues (such as drug interactions), and maximize communication between all health care providers through feedback mechanisms. Diabetes patients, in particular, should be offered MTM services whenever possible. This is not only due to the increased number of prescriptions seen with a diabetes patient (a diabetes patient fills approximately 44 prescriptions per year on average), but also because of the depth of education needed for adequate control.

During an MTM session with a diabetes patient, pharmacists should use their clinical skills and knowledge to improve patient care and efficient medication delivery.

Weight Management
Pharmacists have also begun partnering with their customers, including type 2 diabetes patients, to lose weight. Diabetes patients who lose weight realize several benefits, including:

• Improved insulin resistance
• Lower insulin need
• Improved blood pressure (if elevated)
• Improved blood glucose levels

Pharmacists choosing to offer weight loss programs will undoubtedly attract diabetes patients to their pharmacy practice. Such programs may include diet and exercise plans, and should also include an accountability portion to ensure success in meeting self-defined health goals. There are several plans that pharmacists may adopt as a weight loss program. However, careful attention should be given to any weight loss plan to ensure healthy weight reduction. Also, many plans educate their patients to minimize carbohydrate intake, which may alter insulin or other medications needed for diabetes management.

Pharmacists who enter into a weight reduction niche market should also consider using other health care disciplines, such as registered dieticians, as resources and in design of the program. In doing so, patients will realize the benefits of each discipline.
Cholesterol and Hypertension Management
Diabetes carries a number of co-morbidities along with it. In fact, approximately two out of three adults living with diabetes also have hypertension. As a result, many pharmacies are addressing this need by offering cholesterol and hypertension education and management.

Screening
One of the greatest ways to offer cholesterol and hypertension management is to educate patients by using their own personal cholesterol and blood pressure values. Many pharmacies offer cholesterol screenings inside the store, either by performing the test themselves (after obtaining a CLIA waiver) or by contracting with another entity to perform the screening. Once the results are known, the pharmacist can then educate the patient on lifestyle modifications as well as proper medication adherence to encourage patients to reach their physician-driven health goals. Barriers to cholesterol screenings typically involve cost. Each pharmacy should also check its state regulations to ensure they have proper clearance to perform the service.

Blood pressure screenings are typically easier to perform and are usually minimal in overall cost. Consider using a pharmacy student, nurse, or other health care provider to offer the service and maximize your time. Pharmacists should refer patients to their doctor if a high reading occurs.

Patient Education
Pharmacists should also consider offering large group educational programs based on cardiovascular risk reduction, which also serves to aid the patient in learning key insights into lifestyle modification. Again, pharmacists who perform a large group educational program will maximize their time while offering education beyond simple flyers or booklets.

Immunizations
Diabetes patients are also in need of vaccinations and are considered by the CDC as high risk. Pharmacists have played a key role in immunizing the general population, including diabetes patients, with influenza, pneumococcal, and other immunizations. Pharmacists should offer immunizations at their locations if feasible.

AN INTERDISCIPLINARY HEALTH CARE APPROACH TO DIABETES MANAGEMENT
According to the American Association of Diabetes Educators (AADE) poorly controlled diabetes is the leading cause of adult blindness, end-stage renal disease, and non-traumatic lower-limb amputations in the United States. It also doubles the risk of stroke and heart disease. Taking these facts into consideration, it is important that care of the diabetes patient involves an entire health care team to assist in prevention and treatment. The diabetes health care team may include, but is not limited to:

- Primary care physician
- Pharmacist
- Diabetes educator
- Endocrinologist
- Nephrologist
- Podiatrist
- Psychologist
- Dietician
- Ophthalmologist
- Dentist

Many diabetes patients suffer from co-morbid conditions, including nephropathy, neuropathy, heart disease, eye complications, complications with the skin or other infections, oral health problems, and even mental health imbalances. In many situations, pharmacists are the most accessible members of a patient’s health care team. This creates a setting that allows a pharmacist to see a clear picture of the different health care providers a patient may be visiting and ensure that each patient with diabetes is being seen by a collaborative group of health care practitioners to manage each of the possible complications seen in most patients with diabetes.

Primary Care Physician
In addition to the patient themselves, the primary care physician, who is most commonly in a family practice or an internal medicine physician, is the head of the health care team. The primary care physician directs each of the other members of the team and ensures the diabetes patient has the proper support for optimum care. Special care is always taken to also ensure that the patient’s other co-morbid conditions are
treated appropriately. One of the most common co-morbid conditions treated in the diabetes patient is heart disease.

**Pharmacist**

The role of the pharmacist in the diabetes health care team has grown quickly over the past decade. In addition to the usual dispensing of medications, community pharmacists now offer diabetes self-management education programs. From intensive educational programs to in-depth drug utilization reviews (DURs), pharmacists play a key role in the diabetes health care team.

One of the greatest interventions pharmacists can make for the diabetes patient is in the area of heart disease. The Centers for Disease Control and Prevention (CDC) reported in 2004 that heart disease was noted on 68 percent of diabetes-related death certificates among patients age 65 and older. Stroke was noted on 16 percent of diabetes-related death certificates in the same year. With such high numbers, it is easy to see how important heart health is for a patient with diabetes. Not only can pharmacists play a vital role in heart healthy education, but it is also very important to ensure that every diabetes patient is being seen regularly by their primary care physician to screen for signs of heart disease.

Many diabetes educators teach their patients to know the ABCs of heart disease, which can help them remember three important numbers to keep track of when visiting their primary care provider. By keeping the ABCs controlled, patients can help to lower their risk of heart disease and stroke.

**A** — The A in ABCs of heart disease stands for A1C. A patient’s A1C reflects their average blood glucose reading over the past three months. According to the American Diabetes Association (ADA), a reading lower than 7 percent should be the goal for all diabetes patients. An A1C can be checked by a pharmacist, but should also be checked at least twice a year by the primary care physician.

**B** — B is for blood pressure. An estimated two out of three adults with diabetes also has hypertension. The ADA and National Institutes of Health (NIH) recommend a blood pressure of less than 130/80 mmHg for all patients with diabetes.

**C** — C stands for cholesterol. A complete lipid panel or profile run by the patient’s primary care physician will include low-density lipoprotein (LDL), high-density lipoprotein (HDL) cholesterol, total cholesterol, and triglycerides. All four of these values are important for a patient with diabetes to understand and follow.

Not only can a pharmacist educate a patient about the medications used to control the ABCs of heart disease, but the pharmacist can also play a vital role in conjunction with the patient’s primary care physician to encourage diet, exercise, and lifestyle changes to better control blood glucose, blood pressure and cholesterol. A pharmacist should encourage patients to communicate with their primary care physician to know their numbers and better manage their risk for heart disease and stroke.

**Diabetes Educator**

The diabetes educator role may vary depending on the setting and available health care staff. This critical piece of the health care team, which is typically a nurse, nurse practitioner, pharmacist, or dietician, explains the process of living with diabetes. The diabetes educator may also utilize other members of the team to explain different portions of the curriculum. For example, the diabetes educator may ask the pharmacist to educate patients on medications while the dietician teaches the basics of carbohydrate counting.

**Endocrinologist**

Endocrinologists are also a key part of the diabetes health care team. From implementing intensive insulin therapy to improving glycemic control, endocrinologists provide critical insights and direction for the diabetes patient.

**Nephrologist**

Hyperglycemia and hypertension can lead to kidney damage. Many of the symptoms of renal failure are not specific and hard to diagnose. For this reason, it is important to support a patient’s health care provider in regularly testing for microalbuminuria, hypertension, and hyperglycemia. Along with medications such as ACE inhibitors, which have been shown to protect the kidneys, regular testing for signs of nephropathy can aid in prevention.
Despite efforts of prevention, many diabetes patients will progress to worsening kidney disease. In 2005, diabetes was the leading cause of kidney failure, accounting for 44 percent of newly diagnosed cases. When diabetes nephropathy is diagnosed, it is important to add a nephrologist to a patient’s health care team.

Podiatrist
Hyperglycemia can cause blood vessel injury and eventually lead to nerve damage. About 60 percent to 70 percent of people with diabetes have some form of nervous system damage, with the majority reporting impaired sensation of the feet. Decreased sensation in the feet can lead to unrecognized injuries, which can progress into infection and possibly the need for amputation. In fact, according to the CDC, more than 60 percent of non-traumatic lower-limb amputations occur in patients with diabetes. This can be prevented. Pharmacists can promote good foot care and assist patients in purchasing specialty diabetes shoes, but it is also very important to encourage an annual visit to the podiatrist to perform a monofilament foot exam.

Psychologist
Persons with diabetes are also at a higher risk of developing symptoms of depression. Psychologists assist in this condition by working through barriers, preconceived notions, and fears. Psychologists on the diabetes health care team should be familiar with the usual needs of the diabetes patient to properly relate to the patient.

Dietician
One of the primary ways to attain proper glycemic control is to eat properly and learn which foods affect blood sugar values. Dieticians should be involved in every diabetes health care team and should also be strongly considered when developing a diabetes self-management education program. Dieticians also develop individualized meal plans based on total caloric need, co-morbid conditions (such as kidney failure), and the need for weight loss, just to name a few.

Ophthalmologist
Diabetes can cause many different complications of the eye including glaucoma, cataracts, and retinopathy, which can all lead to a degree of blindness. Many patients with diabetes are justly concerned about the risk of blindness associated with their disease seeing as diabetic retinopathy alone causes 12,000 to 24,000 new cases of blindness each year. However, an ophthalmologist can treat all three of the aforementioned complications and prevent blindness. All diabetes patients should schedule a dilated eye exam with an ophthalmologist at least once a year to check for any signs of retinopathy.

Dentist
Emerging research suggests that diabetes and periodontitis, a gum disease, go hand-in-hand. Diabetes can put patients at risk for having periodontitis, and at the same time, poor oral hygiene can lead to poor blood glucose control. In a recent CDC report, it was found that patients with an A1C greater than 9 percent were nearly three times more likely to have severe periodontitis than those without diabetes. For this reason, it is imperative to recommend that all patients with diabetes schedule a check-up with a dentist every six months.

CONCLUSIONS
Pharmacists play a key role in improving patient outcomes in the diabetes patient. Through diabetes education, pharmacists empower the patient to utilize lifestyle modifications, medication management, and other techniques to improve diabetes control. Pharmacists should ensure maximum learning during appointments by using communication techniques such as motivational interviewing. Pharmacists also play a key role in the diabetes health care team. With the patient at the helm, each member of the team is vital to improving glycemic control as well as outcomes. By offering different forms of diabetes education as well as ancillary products needed by persons living with diabetes, pharmacists can also improve the bottom line of their pharmacy.

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CONTINUING EDUCATION QUIZ

Select the correct answer.

1. You are finishing a diabetes education session with a newly diagnosed patient. What would be the most effective method to summarize the session?
   a. End the discussion with one very important take-home point or goal.
   b. Pre-print a list of 10 goals that every patient with diabetes should be focusing on all the time.
   c. Re-emphasize three to five important points covered during the session for the patient(s) to use as goals until the next meeting. Encourage them to write them down.
   d. Do not summarize the session with your patients. This will only make them feel overwhelmed.

2. An example of a beneficial open-ended question is:
   a. “Do you understand what diabetes is?”
   b. “What do you do when you feel that your blood sugar is low?”
   c. “Have you felt any signs or symptoms of hypoglycemia this week?”
   d. “Has anyone in your family ever been diagnosed with diabetes?”

3. Pharmacists and other health entities may receive recognition for diabetes self-management education through:
   a. American Diabetes Association
   b. American Association of Diabetes Educators (AADE)
   c. Indian Health Service (IHS)
   d. All of the above

4. The benefits of insulin pump therapy include:
   a. Increased A1C values
   b. Increased weight loss
   c. Fewer daily injections
   d. Fewer blood sugar checks per day

5. In the latest edition of Diabetes at a Glance 2010, the National Center for Disease Prevention and Health Promotion revealed that __________ people living in the United States have diabetes.
   a. 10 million
   b. 15.5 million
   c. 23.6 million
   d. 50 million

6. People with diagnosed diabetes also have medical expenditures that are about __________ higher than medical expenditures for people without diabetes.
   a. 2 times
   b. 2.3 times
   c. 4.5 times
   d. 5.1 times

7. The benefits of holding an educational class on a regular basis include:
   a. Increasing the number of new patients filling prescriptions at the pharmacy
   b. Setting the pharmacy apart from the competition by offering programs for persons living with diabetes
   c. Increasing OTC sales through increased foot traffic inside the store
   d. All of the above

8. According to the American Association of Diabetes Educators (AADE), poorly controlled diabetes is the leading cause of:
   a. Adult blindness
   b. End-stage renal disease
   c. Non-traumatic lower-limb amputations
   d. All of the above

9. In a recent CDC report, it was found that patients with an A1C greater than 9 percent were nearly __________ more likely to have severe periodontitis than those without diabetes.
   a. Two times
   b. Three times
   c. Four times
   d. Five times
10. Pharmacists should help promote good foot care in diabetes patients by:
   a. Offering to cut toenails
   b. Offering foot spas to patients while waiting for prescriptions
   c. Offering diabetic footwear
   d. None of the above

11. What is the goal of motivational interviewing in diabetes education?
   a. For pharmacists to use motivational interviewing in their diabetes educational programs to teach their patients how they can set goals for themselves and help them meet their self-defined goals
   b. For pharmacists to plan out their own goals for each of their patients and have them follow the goals they have set for them to achieve.
   c. For pharmacists to use motivational interviewing as a patient-guided forward movement in understanding their condition and beginning to manage it on their own.
   d. To cheer patients on to better health by giving them a written teaching plan of preset goals for the patient to meet.

12. What might be one downfall of individual patient education?
   a. The store would attract new customers by offering this individual teaching service.
   b. The pharmacist is away from the prescription counter and will need another pharmacist to cover prescription-filling duties.
   c. The likelihood exists that the store would increase the number of prescriptions after offering individual teaching services.
   d. The store would scare off new patients by offering an individual teaching service.

13. Which is NOT an example of motivational interviewing?
   a. Using the acronym “FRAMES” which stands for Feedback, Responsibility for change lying with the individual, Advice-giving, providing a Menu of change options, an Empathic counseling style, and enhancement of Self-efficacy.
   b. The use of open-ended questions during the interviewing process and the use of affirmations during your conversation with the patient and the interview process.
   c. The use of summaries at the end of the interview process with at least 10 to 15 main points used for a closing and the use of non-reflective listening.
   d. The use of reflective listening during the interview process and the use of summaries with five main points at the end of the interview process.

14. Choose the best example of the empowerment model?
   a. This style of patient interaction is that “the individual is given a guideline of goals and the pharmacist uses daily calls or e-mails to empower the patient and keep them on track with their goals.
   b. This style of patient interaction is that “the individual is placed in a group of diabetics with similar health problems and through group encouragement the patient is empowered to take on their own health goals.”
   c. This style of patient interaction is that “the individual is given some motivational empowering books to read about how to take back their health outcomes by using friends and family to help them meet their goals.”
   d. This style of patient interaction is that “the individual is not blamed for his or her problems but is responsible for generating a solution.”

15. What is the key difference between conversation maps and the use of motivational interviewing or the empowerment model?
   a. Conversation maps are best used one on one where as the motivational interviewing is best used in a group setting.
   b. The conversation map supports a discussion between patients, guided by the occasional aid of a pharmacist and mainly the use of peer support for affirmation and guidance.
   c. The empowerment model is different mainly because the group comes up with a solution for every diabetes patient attending the class, and the conversation map is used best just between the pharmacist and the patient.
   d. The motivational interviewing process involves
all diabetes patients in a class to affirm each other for support and guidance whereas the conversation map is used as a tool for the individual diabetes patient to review on their own.

16. Which is not an advantage of attracting a diabetes patient to an independent pharmacy through innovative educational teaching?
   a. The pharmacist is more likely to increase foot traffic into the store.
   b. The pharmacy typically increases its prescription volume
   c. The pharmacy typically increases its OTC product sales and other ancillary supplies.
   d. The pharmacy decreases its prescription volume

17. Advantages of having a pharmacist on the diabetes health care team include:
   a. Having a medication expert available for consultation for prescribers
   b. Having a very accessible member of the health care team available for the diabetes patient
   c. Having a member of the health care team available for educational consultations
   d. All of the above

18. Diabetes can cause many different complications of the eye including:
   a. Glaucoma
   b. Keratopathy
   c. Episcleritis
   d. All of the above

19. Members of the diabetes health care team may include, but are not limited to:
   a. Dietician
   b. Pharmacist
   c. Family practice physician
   d. All of the above

20. An estimated _________________ adults living with diabetes have hypertension.
   a. One out of five
   b. Two out of three
   c. Three out of four
   d. One out of four

21. Is this program used to meet your mandatory C.E. requirements?
   a. yes b. no

22. Type of pharmacist: a. owner b. manager c. employee

23. Age group: a. 21–30 b. 31–40 c. 41–50 d. 51–60 e. Over 60

24. Did this article achieve its stated objectives? a. yes b. no

25. How much of this program can you apply in practice?
   a. all b. some c. very little d. none

How long did it take you to complete both the reading and the quiz? ______ minutes