Abstract

Objectives: To outline the five key strategies of self-management support, as defined by Bodenheimer and Abramowitz, and describe how each self-management strategy is incorporated into the five core elements of medication therapy management (MTM).

Summary: The prevalence of chronic disease is quickly escalating, resulting in increased morbidity, mortality, and elevated health care costs. Currently, 60 million people suffer from at least one chronic disease, and by 2015 that number is expected to at least double. Chronic disease is the leading cause of disability, physician visits, and health care spending in the United States, accounting for 70% of total health care expenditures. Published literature supports that pharmacist involvement in providing direct patient care improves clinical outcomes of chronic diseases. Since the Medicare Modernization Act of 2003 (MMA), MTM principles have become common in pharmacy practice. However, as the prevalence of chronic disease increases, health care providers, including pharmacists, must think outside of traditional care models to help patients optimally manage their chronic diseases. Patient self-management, within the collaborative care model, has demonstrated a trend in improved health outcomes, including decreased glycosylated hemoglobin, low-density lipoprotein, and pain scores, as well as a decline in emergency department visits and hospitalizations.

Conclusion: Integrating self-management support into the health care system, specifically into the core elements of MTM, can affect how patients perceive and manage their chronic conditions considerably.

Keywords: Medication therapy management, self-management, self-care.

Incorporating patient self-management into medication therapy management
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Learning objectives
At the conclusion of this knowledge-based activity, the pharmacist will be able to:
■ Define the medication-related action plan (MAP) as it relates to patient self-management.
■ Explain the patient role in each of the four self-management tools.
■ Create an MAP for a patient using the elements of collaborative interaction.
Chronic diseases such as diabetes, dyslipidemia, asthma, heart failure, and hypertension are the leading cause of disability, physician visits, and health care spending in the United States, accounting for 70% of total health care expenditures.1 Approximately 25% of Medicare recipients have four or more chronic conditions, accounting for two-thirds of Medicare expenditures.2 Roughly 60 million Americans suffer from at least one chronic disease, and by 2015, this number is expected to grow to more than double, to 150 million.3 Pharmacists serve as an integral part of the health care team to manage patients with chronic diseases, improve outcomes, and reduce overall health care expenditures. The Surgeon General’s 2011 report supported a rational and logical justification for pharmacists to help bridge some of the gaps between the primary care and health care systems. Evidence-based data have provided exhaustive evidence that pharmacists within these health care models improve outcomes and contain costs.4

Medication therapy management (MTM) is a common method used by pharmacists to manage patients with chronic conditions and multiple medications in an outpatient setting. MTM is a distinct service (or group of services) that optimizes therapeutic outcomes for individual patients. MTM services are independent of but can occur in conjunction with the provision of a medication product.5 The American Pharmacist Association (APhA) has created a framework for MTM that consists of five core elements: (1) conducting medication therapy review (MTR), (2) creating the personal medication record (PMR), (3) establishing the medication-related action plan (MAP), (4) determining which intervention and/or referral should be made or obtained, and (5) documenting the visit with an established plan for follow-up.5 Through MTM services, the pharmacist actively manages and resolves medication-related problems such as drug interactions, duplicate therapies, and adverse drug events, in addition to proactively preventing future medication-related problems. MTM services in pharmacy practice are designed to facilitate collaboration among the pharmacist, patient, physician, and other health professionals to promote safe and effective medication use and achieve optimal patient outcomes.5 Although the five core elements provide a reliable and reproducible service model for health care providers to conduct MTM visits, the model does not describe how a pharmacist can most effectively interact with the patient. Bodenheimer and Abramowitz6 describe five clinical strategies that help support the collaborative efforts of the pharmacist–provider interaction to improve clinical outcomes with regard to self-management. The first strategy, collaborative decision making, allows the patient to establish the agenda for the health care visit. Second is the information-giving session, during which the provider uses an “ask, tell, ask” strategy so that the patient may obtain information specific to his or her needs. The third strategy also involves information giving, but this time, the provider “closes the loop” by assessing the information obtained from the ask, tell, ask session. The fourth and fifth strategies involve the collaborative decision-making process. The fourth strategy assesses the patient’s readiness to change, while the fifth strategy aims to help the patient with goal setting. Through these last two strategies, the health care provider is able to assess the patient’s readiness to change, resulting in the patient and provider working together to set specific goals for self-management.10 Successful MTM can be achieved by integrating these five clinical strategies within the five core elements of MTM to ensure that patients remain actively engaged in managing their chronic conditions (Table 1). This article will further outline how the MTM core elements correlate to the five clinical strategies to support the collaborative decision-making process in patient self-management.

**Collaborative decision making**

In a traditional patient–provider relationship, the health care provider decides on the education and skills patients need to manage their health. The focus of the traditional visit typically centers on the agenda of the health professional, with the patient in mind. Studies focusing on the traditional patient–provider relationship have identified several key bar-
motivation to make changes. Ultimately, patients are the

Collaborative decision making: Establishing an agenda

The issue is not whether patients are self-managing their dis-
to appropriately manage hyperglycemia or the importance of adherence to diabetes medication, M.C. may not have opened up about his financial problems due to feelings of shame or not wanting to disappoint his provider. Instead, by asking an open-ended question, “What would you like to discuss during your visit today?” the provider welcomed the opportunity to understand what is most troublesome to the patient. The pharmacist ultimately gained more information than the EMR could offer, allowing him to make a greater impact on improving health outcomes, as he now understands the root of the problem.

When the patient is given the freedom to establish the agenda throughout the visit, a partnership is made between the provider and patient. Trust is built, and genuine communication about the disease can occur. During the delivery of MTM, establishing an agenda occurs both at the beginning of the visit during the MTR and toward the end of the visit when creating an MAP. Allowing the patient to set the agenda during the MTR aids the pharmacist in compiling the list of disease- and medication-related discrepancies that are of greatest concern for the patient. The pharmacist must be flexible during the clinic visit, allowing the MTR to be comprehensive or targeted, depending on the patient’s concerns and agenda. During the MTR, the pharmacist should focus on the patient’s thoughts and feelings as they relate to medications and diseases, as well as the patient’s values and personal goals for disease management. During the MTR, the patient, with the help of the pharmacist, begins to prepare a plan to resolve the identified medication-related problems, which leads to the creation of the MAP. By definition, an MAP is a “patient-centric document containing a list of actions for the patient to use in tracking progress for self-management.”

During MTM, the pharmacist is used as a coach and mentor in creating the MAP—a process explained in detail below.

**Information giving: Ask, tell, ask and closing the loop**

As discussed previously, in the traditional model, disease-specific information is given to the patient at the discretion of the provider. Studies evaluating this type of patient education have revealed that patients often leave the physician’s office feeling underinformed and confused.

In collaborative interaction, where self-management support is the target, self-directed learning is encouraged. Self-directed learning allows the patient to initiate and take responsibility for the decisions that are made during clinical visits. Patients are empowered to manage their diseases by taking the lead on assessing and selecting how they will improve their health. Self-directed learning is most effective when the ask, tell, ask and closing the loop models are followed.

**Ask, tell, ask**

This technique allows the provider to educate the patient about disease-specific information, following the lead of the patient. After the agenda for the visit is established, the provider will ask a specific question related to the agenda. From the previous example, patient M.C. presents to his follow-up visit. The provider was able to find the patient a medication assistance program that will provide the patient with all diabetes medications and supplies until M.C. finds an alternative insurance plan. Today, the patient states that he has been taking his long-acting insulin (Lantus—Sanofi) every night; however, he occasionally skips his insulin aspart (Novolog—Novo Nordisk) injections due to fear of hypoglycemia. A sample dialogue between the provider and M.C., using the ask, tell, ask model, appears below.

Provider: “What concerns you most about hypoglycemia?”

M.C.: “I have never experienced low blood sugar, but my sister was found unconscious, and the paramedics said it was because of low blood sugar. I’m scared to take Novolog if my premeal blood sugar is under 150 mg/dL. I don’t want to be found unconscious because of low sugar.”

Provider: “Sounds like you were very worried for your sister, and you don’t want the same thing to happen to you.”

M.C.: “Yes, it was scary, and I never want to go through that.”

Provider: “Do you mind if we discuss what your blood sugar goals should be and also how to appropriately manage hypoglycemia if it should ever occur to you?”

M.C.: “Yes, I would like that.”

In the above discussion, the provider first opened the conversation by asking the patient to verbalize his primary concern regarding hypoglycemia, which allowed the provider to identify the patient-specific gaps in education. After the patient communicated his fear of hypoglycemia, the provider then reflected the patient’s feelings back to him and followed up with a question asking permission to provide further education related to blood glucose goals and hypoglycemia management. Of note, if the patient states that he or she is not interested in receiving information, the provider must respect the patient’s decision and attempt to address this topic at a later appointment.

**Closing the loop**

For successful self-management to occur, patients must fully understand and retain the education that is provided during the clinic visit. If patients are not able to apply the information to improve their care, the education was of no value. One study found that 47% of patients were not able to correctly recall the education information given to them by providers after the clinic visit. To improve patient understanding, the provider must close the loop. For our patient, M.C., after the provider delivers education information on blood glucose goals and appropriate management of hypoglycemia, the patient should be asked to repeat the information back to the provider so that the provider can assess content comprehension. Identifiable gaps in understanding are addressed during the clinic visit immediately; thus, the patient leaves the encounter with the ability to apply the learned information to daily disease management. A sample dialogue between
the provider and M.C., using the closing the loop model, appears below.

Provider: “Please tell me how you would manage low blood sugar at home, if it should happen to you.”

M.C.: “Well, just like you told me. If my sugar is below 70 mg/dL, I will drink a half cup of juice, milk, or regular soda. I will also make sure to recheck my sugar in 15 minutes. I will continue to repeat these steps until my sugar is above 70 mg/dL. Is that correct?”

Provider: “Yes, that is excellent. Also, I can show you sugar tablets sold OTC to help treat low sugars. You can keep these in your car, for emergency purposes.”

M.C.: “That sounds good, thank you.”

The ask, tell, ask and closing the loop models can be easily incorporated during the MTM patient interview, particularly during the MTR and creation of both the PMR and MAP. The self-management support models described above assist pharmacists in allowing patients to lead in identifying medication-related problems during the MTR, selecting which education and training they are willing to accept, and assessing their level of understanding for successful implementation of the MAP. Information giving also is integrated in the creation and understanding of the PMR. Through ask, tell, ask, pharmacists are able to identify issues relating to patients’ medication lists and provide education on indication, dosing, and frequency. Closing the loop allows patients to communicate their understanding of all active medications to pharmacists, resulting in patients leaving the visit confident and comfortable with their prescribed medication regimen.

**Collaborative decision making: Assessing readiness to change**

In the traditional model, after advice is given, it is assumed that the patient will follow the recommendation. For example, the patient may be told, “Uncontrolled diabetes causes severe complications, such as amputations. If you don’t improve your glucose levels, you are at risk of these disease-related complications,” and “Smoking causes lung cancer; you need to quit smoking immediately, because it can save your life.” Clinicians usually provide these statements to make themselves feel better about the patient interaction. They feel less guilty about the limited time they have with the patient if they provide the patient with facts about the danger of their disease. However, the traditional model is lacking in acknowledging that patients have the choice to make the recommended lifestyle changes. Ultimately, the decision to make a change is dependent on the patient’s readiness to make changes. The health care provider must have a clear understanding of the patient’s level of readiness; otherwise, both patient and provider will be left frustrated with the interaction. Two popular models commonly are used by health professionals to assess readiness to change. The older of the two is the transtheoretical model (TTM), which centers on the following stages of change.10

- Precontemplation: Patient has no intention of making a change in the next 6 months; ignorance is bliss.
- Contemplation: Patient is thinking about making a change but is ambivalent.
- Preparation: Patient has intentions to make a change in the next month.
- Action: Patient is making a specific change.
- Maintenance: The behavior change has lasted at least 6 months to 5 years, and the patient is actively trying to prevent relapse.

TTM is beneficial when one specific behavior needs to be changed. Examples of such behaviors are weight loss, smoking cessation, or alcohol addiction. Readiness to make a change can be easily determined by the provider, and education can be tailored based on the patient’s response. TTM is not beneficial when the area of change is broad (e.g., medication nonadherence) or the patient’s agenda is to improve overall health status. For these broader topics, the second readiness-to-change model, motivational interviewing (MI), is more beneficial.

The theory behind MI centers on the equation: readiness = importance × confidence.2 The provider must determine whether the change has not occurred because the patient does not view it as important or if the patient is lacking the confidence to make the decision to change. The theory of MI is similar to the collaborative model discussed previously; therefore, MI often is discussed in conjunction with self-management. Similar to the collaborative model, MI also aims to build a partnership with the patient, focusing on the patient’s internal motivation to change versus external motivation such as pleasing the health care provider. MI works well within collaborative interaction because it allows patients to reflect on their own feelings about making a behavior change. In successful MI, the patient, rather than the provider, makes the argument to make a change. Unlike TTM, there are no specific stages of change. Rather, the health care provider engages the patient in an interview, similar to the example provided above with collaborative interaction; this interview is labeled “change talk” by MI experts. Change talk is very similar to the ask, tell, ask model in that it centers around open-ended questions that help assess the patient’s desire, reasons, and need for change. Examples of change talk-type questions are as follows:4 “In what way would it be good for you to … ?,” “If you decide to … how would you do it?,” “What would be the good thing about … ?,” and “Why would you want to … ?”

As discussed, during the MTM process, the medication- and disease-related problems are identified during the MTR. Also during the MTR, the patient, with the help of the pharmacist, creates the MAP (a plan to resolve each identified issue). Depending on the issue, TTM or MI can be used to assess the patient’s readiness to make a change.

**Patient case: Assessing readiness to change**

L.D. is a 34-year-old Hispanic female presenting for an MTM consultation for management of dyslipidemia. During the visit, L.D. would like...
Collaborative decision making: Goal setting

The final strategy used in clinical practice for self-management within a collaborative decision-making model includes goal setting. In this context, goal setting is defined as an interaction between the health care provider and patient resulting in a concrete goal. The goal is very specific and detailed; it should include when the patient will begin making the change and the specific steps that will be taken.10

The overall aim of setting goals in self-management support is to improve a patient’s self-efficacy. Self-efficacy is defined as a person’s level of confidence that he or she can carry out a behavior necessary to reach a desired goal. When interviewing patients, ask them to rate their confidence on a scale of 0 (not confident at all) to 10 (very confident). This will assist in determining patients’ willingness to achieve the goal being set. Patients who rate their confidence greater than or equal to 7 are more prone to achieve the goals they have set. If patients’ confidence level is less than 7, consider restructuring the goal to make it more achievable. Over time, their improvement in self-efficacy is demonstrated by their ability to make healthier behavior choices. Researchers have found that patients with a variety of chronic conditions who attend self-management courses demonstrate improved outcomes as well as greater self-efficacy.15

When providing MTM, goal setting occurs throughout the patient visit as it relates to several of APhA’s core elements. During the MTR, the pharmacist must evaluate the patient’s personal goals for disease management, work with the patient to prepare a plan for each medication-related problem identified, and provide education on the importance of understanding each treatment goal. This ultimately leads to creation of the MAP, which is a physical document that the patient takes home, listing the medication- and disease-specific goals established during the MTM visit. This MAP, along with self-management support, incorporates a patient-centered approach that is strongly advocated by the Institute of Medicine and thereby has become a core element of MTM.1 They differ in that the MAP is focused on the patient’s medications, whereas the self-management action plan encompasses medications, diet, and exercise to improve health outcomes. The goals that are included in the MAP empower patients to have control over their diseases and encourage patients to have active participation in taking care of their own health. The goals should be documented and followed up at each visit to ensure that barriers are identified and patients are progressing toward achieving their goals.5

When creating the self-management action plan, providers should offer ideas that are concrete and achievable. It is not always important that the patient meets the goals established by a published guideline. For example, rather than setting a goal of a sedentary patient walking 150 minutes per week, as established in the guidelines, individualize the goal for the patient, such as walking 5 minutes during their lunch break. This may be more defined and realistic for the patient to implement into their lifestyle. Setting goals that are neither achievable nor concrete sets the patient up for failure, which decreases patient motivation to make healthy behavior choices. Patients should be given a copy of the written self-management action plan to take home. A copy should be kept with the practitioner as documentation for follow-up at the next visit.10

Patient case: Goal setting

K.T. is a 54-year-old morbidly obese black female with newly diagnosed dyslipidemia who presents for an MTM consultation. She has a new prescription for simvastatin but states that she does not like taking medications. Instead of taking the new medication, K.T. states that she will just lose 50 lb and her cholesterol will be normal again. Upon questioning, L.D. states that she hates exercising and loves eating out at fast-food restaurants. Her favorite meal is a double cheeseburger, large French fries, and a soft drink, which she has eaten about four times per week for the past 20 years. K.T. states that she does not want to stop eating her favorite meal but is willing to switch from a regular to a diet soft drink. Her most recent fasting lipid profile includes total cholesterol 302 mg/dL, triglycerides 201 mg/dL, low-density lipoprotein (LDL) 191 mg/dL, and high-density lipoprotein 38 mg/dL. Which of the following is the most appropriate method to set goals with K.T. for her self-management action plan?

a. Ask K.T. to rate her confidence in switching from a regular to a diet soft drink on a scale of 0 to 10.

b. Instruct K.T. to set goals listed within the guidelines, such as limiting saturated fats to less than 7%.

c. Set a goal for K.T., such as walking 150 minutes per week, based on the patient interview.

d. Be sure that the goals are detailed, complex, and only provided verbally.

Answer: a. The purpose of the action plan is to improve a patient’s self-efficacy. Regardless of the scope of the behavior change, the importance is placed on the fact that K.T. is successful. To increase the odds of success, K.T. must feel confident (at least 7 on a 10-point scale) that she can achieve her goals. If the level of confidence is low, the health care provider should suggest a more achievable goal. Instructing K.T. to set goals listed in the guidelines or making goals on K.T.’s behalf prevents her from being part of the decision-making process. This in turn may set K.T. up for failure if she does not feel the goal is achievable or is not in agreement with the goal. Setting goals should be a collaborative effort between the patient and provider.
Self-management tools

Various types of self-management tools are available to help patients achieve their specific health goals and can be incorporated into the MAP. Self-management tools can be divided into categories according to four different patient types: subordinate, structured, autonomous, and collaborative (Table 3). Patients who take on subordinate roles achieve their best results with self-management tools that require only modest patient involvement (e.g., video surveillance geared toward patient safety, sensors to track movement in patients at risk for falls). In the structured patient role, participants are more active in their self-management but within limits established in partnership with their health care provider. Autonomous patients use the literature as a method of determining their health care needs without the participation of their health care providers. Providers are able to provide clarification for patients on the most reputable literary resources. Patients in collaborative roles apply the information and resources collectively agreed upon through patient–provider interactions and education. Understanding the different patient types will lead to more effective patient–provider collaborations to use suitable self-management tools and help overcome barriers to patient self-management. Depending on patient confidence with managing chronic diseases, they may not fit one category specifically; however, the goal is to get those patients in the subordinate, structured, and autonomous roles to increase their collaboration with their health care providers to optimize patient care.

Barriers to self-management support

Ideally, self-management support is best placed in a clinical setting that fosters an ongoing patient–provider partnership.16 However, several barriers exist to the implementation of patient self-management support in the outpatient setting. From an organizational standpoint, trained personnel to provide self-management support may be lacking or accountability for services rendered may be missing. The infrastructure of the organization (community pharmacy or health system) may lack methods for documentation or referral processes. The perception of the benefit of self-management services offered among providers and patients may be diminished. Approaches to overcoming these barriers include (1) identifying populations that would benefit from self-management support, (2) deciding which evidence-based literature reinforces the value of self-management support, and (3) dedicating trained personnel to provide self-management support to patients.16 To decrease barriers to self-management, the concept has to be widely accepted and adopted by the government and academic institutions to expedite self-management support into the health care system.

Jerant et al.17 found that the major patient-specific barriers to active self-management include depression, obesity, fatigue, poor communication with physicians, lack of family/social support, pain, and financial burden. Barriers to self-management may occur separately or simultaneously and have been proven to decrease patients’ overall ability, confidence, and self-efficacy to manage their chronic conditions. Coleman and Newton2 found that comorbidities limit self-management, as one condition may aggravate the symptoms and treatment of another condition. To overcome patient-specific barriers to self-management, providers must ensure that all barriers with medical treatment options are identified and addressed. For example, depression often is underdiagnosed and often goes untreated, which is a major barrier to self-management. A low level of health literacy is another potential barrier to active participation, and addressing health literacy in chronic illness has been associated with better outcomes.

Table 3. Self-management tools

<table>
<thead>
<tr>
<th>Subordinate</th>
<th>Structured</th>
<th>Autonomous</th>
<th>Collaborative</th>
</tr>
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<tbody>
<tr>
<td>Video surveillance</td>
<td>Internet tools</td>
<td>Literature</td>
<td>Glucometers</td>
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<tr>
<td>Sensors</td>
<td>Home monitoring systems</td>
<td>Patient education materials</td>
<td>Home INR monitors</td>
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<tr>
<td>Remote patient monitoring systems</td>
<td>Virtual consultations</td>
<td>Package inserts</td>
<td>Blood pressure monitors</td>
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Abbreviation used: INR, international normalized ratio.

Patient case: Barriers to self-management

P.R. is a 65-year-old Hispanic male with a 10-year history of type 2 diabetes. He presents to the pharmacy for an MTM visit. P.R. states that he has run out of his short-acting insulin 7 days early because he has been using more insulin before meals due to feeling like his blood glucose is “high.” The patient states that he has been “down” lately and eating whatever he wants to put himself in a better mood. He drinks 2 L regular soft drinks per day and often snacks on cookies throughout the day, in addition to three meals each day that include a wide variety of food, including takeout for dinner most days. P.R. states that he has given up on weight loss and is done dieting because he is tired of feeling bad about himself every time he goes to his physician and finds that he has gained more weight. P.R.’s self-management is hampered by which of the following?

a. Depression
b. Low external motivation and depression
c. Low literacy and patient guilt
d. The patient does not have any barriers to self-management

Answer: a. P.R. states that he has been feeling “down,” which correlates with depression and may lead to his inability to make healthy food choices, lead to his inability to manage his diabetes effectively, and decrease his desire to lose weight and be active. He also is experiencing guilt because he has been made to feel badly about not losing weight when he goes to his physician. Also, the physician may have overestimated the patient’s willingness to lose weight.

Clinical and economic impact

Nationwide, MTM services have been shown to improve clinical and economic parameters. Multiple studies, including the Asheville Project and the Diabetes Ten City Challenge, have demonstrated clinical and economic benefits of providing MTM services. Both studies demonstrated an improvement in clinical parameters such as glycosylated
hemoglobin (A1C), blood pressure, and cholesterol values. Further, the Asheville Project demonstrated a reduction in total mean direct medical costs compared with baseline. In addition, a relatively recent study based in Minnesota evaluated the impact of MTM interventions on clinical and economic outcomes. The study concluded that with MTM involvement, a majority of patients (77%) achieved glycemic control. Overall, a robust literature demonstrates the positive impact of MTM services.

The impact of providing self-management support, as it relates to health outcomes, has demonstrated a trend toward improved outcomes. Typically, outcomes that are measured include self-efficacy, objective outcomes such as A1C or blood pressure values, and self-reported health-related behaviors including diet and exercise. Self-management skills have shown to improve patient self-efficacy and health outcomes in certain diseases. Many programs have been developed for individualized chronic diseases in order to support self-management skills. However, because interventions are not standardized, generalizing data about the impact of self-management education on clinical outcomes and cost is difficult.

A Medline search from 1993 to 2001 identified 18 studies reviewing arthritis self-management. Of the 18 studies, 12 found improvement in clinical outcomes in patients provided with self-management support versus a control group. The most widely known self-management program in arthritis, the Arthritis Self-Management Program (ASMP), was developed by Stanford University and disseminated by the Arthritis Foundation. Patients in the program were involved in six 2-hour sessions that educated patients on how to manage their medications, problem solve, and use community resources. The results demonstrated that in 4 years, patients had a 17% reduction in pain despite a 9% increase in measured physical disability. Further, of the 401 patients who participated in the ASMP, their visits to the physicians were more than 40% below the baseline rate. This program demonstrated a strong correlation between the patients’ perceived self-efficacy and confidence to cope with their arthritis and the patients’ health outcomes.

Improvement in health outcomes after education on self-management skills have been demonstrated through a multitude of studies in patients with diabetes. Approximately 1,100 patients with type 1 diabetes who participated in self-management education found a reduction in AIC of 1.2% and a reduction in the risk of severe hypoglycemia from 0.35 to 0.16 cases per patient-year. The self-management techniques went beyond traditional diabetes education strategies by enabling patients to choose their own therapeutic strategies and treatment goals. Further, a 6-year study conducted in approximately 500 patients with type 2 diabetes found that nonfatal outcomes and mortality were similar between patients with self-management education and those provided with usual care. However, AIC, fasting plasma glucose, systolic blood pressure, and cholesterol concentration were found to be lower in the intervention compared with the usual care group. Overall, they concluded that self-management skills, such as individualized goals with education support, reduce the risk for diabetes complications. A model developed by UNITE health center in New York City delivered self-management support for patients with diabetes, asthma, hypertension, and dyslipidemia. The model provided self-management through a collaboration between providers and health coaches. Health coaches spoke the same language and were culturally similar to their patients. They were trained by providers and were less expensive than certified diabetes educators or registered nurses. Within a 4-year span, more than 500 patients with diabetes demonstrated a statistically significant increase in achieving goals such as A1C less than 7%, LDL less than 100 mg/dL, and blood pressure less than 130/80 mm Hg. The number of patients that met all three goals increased from 13% to 36%. Health spending decreased by 17%, and emergency department visits were 50% lower.

Typically, self-management programs are viewed as a cost to the system in respect to added expense of personnel and time; however, they also have potential to provide cost savings by improving care of chronic diseases. Cost analysis found an increase in costs, particularly pharmacy costs resulting from increased medication adherence. However, these programs are designed to reduce the long-term consequences of chronic diseases and further reduce hospitalizations and emergency department visits, which provide direct cost savings to individual payers. The 7-week Chronic Disease Self-Management Program had fewer hospitalizations during a 6-month period than the control group, resulting in a 6-month net savings of $750 per patient. Programs such as Project Dulce have found self-management education services to be cost neutral, in that the savings found by reducing inpatient stays were sufficient to pay for the entire program. Private practices have found that they can bill and collect for self-management support through a fee-for-service model. Emerging payment opportunities include pay-for-performance and patient-centered medical home models. Some Medicaid programs and commercial insurers are making per-member per-month payments on top of fee for service within the patient-centered medical home model. These two payment opportunities may enable self-management support to be financially sustainable.

MTM services coupled with self-management may provide additional benefits in improving patient care because individually, both of these services have demonstrated an improvement in clinical and economic parameters. Both have been shown to improve multiple clinical parameters, including A1C and blood glucose. Multiple studies have shown that these services result in positive patient outcomes. In addition, reimbursement opportunities are available to provide a financial incentive. Self-management has definitively improved self-efficacy in patients, thereby improving their confidence in managing their health. MTM enables patients to have a better understanding of how to manage their medications. Overall, data support a potential
benefit for further research and a need for standardization of self-management programs, along with the benefits of incorporating MTM services.

**Conclusion**

Each day, patients with chronic conditions are faced with self-management decisions regarding their health. Pharmacists who use self-management support in MTM, incorporating the five clinical strategies of self-management, may help patients achieve better disease outcomes for chronic conditions. Providers conducting MTM should consider intertwining self-management support strategies and tools within the MTM framework in order to facilitate a collaborative interaction between the patient and provider. The collaborative interaction will allow for a patient–provider relationship that enhances communication, education, and the decision-making process. Ultimately, self-management support should lead to patients being more engaged in managing their chronic conditions. Self-management support empowers patients to identify and act on their problems, understand consequences of their chronic conditions, have increased self-efficacy to enhance quality of life, and improve clinical outcomes. Implementing self-management has its challenges, which may include time, lack of trained personnel, and provider support. Despite barriers that can be encountered, integrating self-management support into the patient care process can generate more beneficial outcomes to provide patients with the necessary skills to manage their chronic conditions. Self-management does not have to occur separate from the patient–provider interaction but should in fact be the driving force of the patient–provider collaboration in efforts to improve clinical outcomes.

Pharmacists providing MTM services are in the optimal position to build collaborative relationships with patients by providing self-management support through the five clinical strategies of self-management, with the goal of improving patient outcomes associated with chronic diseases.

**References**

CPE assessment

Instructions: This exam must be taken online; please see “CPE information” for further instructions. The online system will present these questions in random order to help reinforce the learning opportunity. There is only one correct answer to each question.

1. The most accurate definition of self-management is that it
   a. Helps improve patient outcomes by using health professionals to solely make the decisions regarding the patient’s chronic conditions.
   b. Teaches patients to manage life with their chronic conditions, increase skills, build confidence in their skills, solve problems, and make day-to-day decisions regarding the management of each disease.
   c. Includes knowledge-based instructions for a specific disease given to a patient by a health care provider.
   d. Changes behaviors, increases knowledge, and uses specific tools such as care plans and patient handouts to improve clinical outcomes.

2. A common patient perception that can be a barrier to a good patient–provider relationship is that the health professional
   a. Has limited time for patient visits.
   b. Will tell others about the patient’s problems.
   c. Is not knowledgeable about the patient’s problem.
   d. Has a condescending attitude.

3. Which of the following is the best example of a traditional patient–provider interaction?
   a. The provider gives information to a patient based on what the patient would like to discuss during the visit.
   b. The provider and patient identify ways to improve the patient’s outcomes.
   c. The provider determines the patient’s problems and recommends solutions.
   d. The patient decides on the goals for therapy, and the provider acts as a partner to help modify goals for achievement.

4. Using the philosophy of self-management support, which of the following statements is most appropriate for a provider to make when trying to establish a patient’s agenda for a clinic visit?
   a. “I would like to discuss your high blood sugars and diet to see whether you have made any improvements.”
   b. “Would it be alright if we discuss your high blood sugars and diet? I would like to see how you are doing.”
   c. “Can you show me your blood sugar and food logs? I’d like to evaluate your improvement.”
   d. “Based on everything that is happening with your health, including your high blood sugars and diet, what would you like to discuss today?”

5. Which of the following is the best example of giving information using the “ask, tell, ask” method?
   a. Provider: “What concerns you most about having high blood pressure?” Patient: “Having a heart attack like my father.” Provider: “It sounds like that was a frightening experience and something you would like to prevent.” Patient: “Yes.”
   b. Provider: “You have high blood pressure.” Patient: “Yes, I do.” Provider: “It needs to be treated with medication.” Patient: “What medication do I need to take?”
   c. Provider: “Did you know you had high blood pressure?” Patient: “Yes, I did.” Provider: “Well, we are going to have to treat you with medication.” Patient: “I do not want to take medication. I will change my diet.”
   d. Provider: “Do you have family members with high blood pressure?” Patient: “Yes, my father and it caused him to have a heart attack.” Provider: “Your blood pressure is high and we need to prevent you..."
from having a heart attack with medications.” Patient: “I do not understand why my blood pressure is high.”

6. A patient tells you, “The doctor said I have high cholesterol, but I feel fine and I’m not interested in taking any medication for it.” Which of the following stages in readiness to change would best characterize this patient?
   a. Precontemplation  
   b. Contemplation  
   c. Action  
   d. Maintenance

7. A 50-year-old female patient with hypertension is seeing you for medication therapy management. The patient has a limited income, and her diet consists mainly of prepackaged foods like soup, canned meat, and bologna. The patient drinks 5 cups of coffee and smokes one-half pack of cigarettes daily. Using the self-management support method to develop goals with the patient, which of the following is the most likely achievable goal for the patient?
   a. Change all prepackaged foods to fresh meats and vegetables. Her confidence level is a 6.
   b. Start a nicotine patch and stop smoking in 2 weeks. Her confidence level is a 5.
   c. Decrease coffee intake to 2 cups per day. Her confidence level is a 7.
   d. Start running 15 minutes per day. Her confidence level is a 2.

8. Which of the following would be the best self-management tool to use with a patient who is using collaborative self-management support?
   a. Purchasing a medical alert bracelet that can be activated when the patient is in distress.
   b. Using a 24-hour cardiac monitor to evaluate when the patient is in supraventricular tachycardia.
   c. Purchasing a blood pressure monitor and checking blood pressure daily, then bringing the log to the health care provider.
   d. Having the patient read and follow information on the American Diabetes Association website to help manage his or her diabetes.

9. When evaluating the economic impact of self-management support, which of the following will most likely result in cost savings?
   a. Increasing medication adherence
   b. Reducing hospitalizations and emergency department visits
   c. Eliminating unneeded personnel
   d. Shortening patient visits and increasing the number of patients seen

10. Which of the following is the best match regarding use of the five clinical strategies of self-management support with the American Pharmacists Association’s five core elements of medication therapy management?
   a. Medication therapy review and self-management: all five clinical strategies
   b. Personal medication record and self-management: goal setting
   c. Documentation, follow-up, and self-management: establishing agenda
   d. Intervention, referral, and self-management: goal setting

11. In a motivational interviewing model, which of the following best defines a patient’s readiness to change?
   a. Importance × confidence
   b. External motivation × confidence
   c. Importance × trust
   d. Trust × external motivation

12. Which of the following is a possible barrier to implementing self-management support?
   a. Patients requiring self-management
   b. Lack of trained health care providers
   c. Transportation for patients to come to appointments
   d. Absence of health care provider motivation to provide self-management

13. Which of the following best describes a provider “closing the loop?”
   a. A provider telling a patient how much sodium the patient should consume on a daily basis
   b. A patient asking what kind of adverse effects he or she can expect from a new medication
   c. A patient telling a provider that his or her chief complaint is lower-extremity edema
   d. A provider asking a patient to repeat instructions given about using a blood glucose meter

14. Which of the following best describes the five strategies for patient–provider self-management support outlined by Bodenheimer and colleagues?
   a. Collaborative decision making; ask, tell, ask; closing the loop; provider readiness to change; and provider goal setting
   b. Patient decision making; ask, tell, ask; closing the loop; provider readiness to change; and patient goal setting
   c. Provider decision making; ask, tell, ask; patient closing the loop; patient readiness to change; and provider goal setting
   d. Establishing the agenda; ask, tell, ask; closing the loop; patient readiness to change; and patient goal setting
15. Which of the following best defines the American Pharmacists Association’s five core elements of providing medication therapy management?
   a. Medication therapy review, personal medication record (PMR), medication-related action plan (MAP), intervention and/or referral, and documentation
   b. Medication therapy review, PMR, MAP, interview, and documentation
   c. Medication therapy review, patient–provider relationship, MAP, intervention and/or referral, and documentation
   d. Medication reconciliation, PMR, MAP, intervention and/or referral, and documentation

16. When establishing an agenda with a patient, how would a provider most likely benefit from asking a question such as, “What would you like to discuss today?”
   a. Taking the pressure off the provider to determine what needs to be discussed
   b. Obtaining information that is not in the medical record to understand the patient’s core concern
   c. Eliminating the need for the provider to evaluate the medical record to review what was discussed at the last visit
   d. Allowing the patient to have some extra time with the provider to improve the patient–provider relationship

17. Which of the following best describes what “ask, tell, ask” allows a provider to do?
   a. Provide education regarding patient-specific disease information following the lead of the patient
   b. Develop open-ended questions that obtain more information from the patient
   c. Focus on any of the patient’s emotional or psychological issues
   d. Talk with patients who have low health literacy about medications and diseases

18. Which of the following self-management tools is best used for a “collaborative” patient type?
   a. Medication package insert
   b. Asthma action plan
   c. Telehealth visits
   d. Self-monitoring blood glucose meters

19. Which of the following questions is an example of “change talk”?
   a. “Why don’t you just stop smoking?”
   b. “What would I have to do to get you to stop smoking?”
   c. “What might your life look like in 5 years if you do not stop smoking?”
   d. “Do you think that you family likes that you smoke?”

20. Which of the following best describes the technique of asking a patient to repeat information given by a provider?
   a. Establishing an agenda
   b. Assessing readiness to change
   c. Collaborative decision making
   d. Closing the loop