CE PRN

PHARMACY CONTINUING EDUCATION FROM WF PROFESSIONAL ASSOCIATES

"Medication Adherence"

May 2016

Non-adherence is such an important consideration in today's healthcare environment. And as pharmacy professionals, we can and MUST take a lead role in improving adherence. The goal of this lesson is to focus on reviewing and updating strategies to improve adherence. This lesson provides 1.25 hours (0.125 CEUs) of credit, and is intended for pharmacists & technicians in all practice settings. **The program ID # for this lesson is 707-000-16-005-H01-P for pharmacists & 707-000-16-005-H01-T for technicians.**

Participants completing this lesson by April 30, 2019 may receive full credit. Release date May 1, 2016.

To obtain continuing education credit for this lesson, you must answer the questions on the quiz (70% correct required), and return the quiz. Should you score less than 70%, you will be asked to repeat the quiz. Computerized records are maintained for each participant.

If you have any comments, suggestions or questions, contact us at the above address, or call 1-847-945-8050. **Please write your name, NABP eProfile (CPE Monitor®) ID Number & birthdate (MM/DD) in the indicated space on the quiz page.**

The objectives of this lesson are such that upon completion participants will be able to:

Pharmacists:

1. Differentiate between adherence, compliance & persistence.
2. List factors that may impact adherence.
3. Describe the significance of motivational interviewing.
4. Discuss methods that pharmacy can use to promote increased adherence.

Technicians:

1. Define adherence.
2. List key factors that may impact adherence.
3. Discuss methods that may be employed when communicating with patients in order to improve adherence.

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NOTE: ONE OF OUR FUTURE TOPICS THIS YEAR WILL BE ON THE OPIOID CRISIS OF ABUSE.

INTRODUCTION

Medication non-adherence is a major public health problem.[1] In the United States it is estimated that increased morbidity and mortality due to non-adherence costs over $100 billion a year. The New England Healthcare Institute projected that non-adherence along with suboptimal prescribing, additional unneeded tests and diagnostic visits account for nearly $290 billion dollars in wasted healthcare expenditures.[2] This translates into 13% of total healthcare spending in the United States. Poor medication adherence can result in adverse outcomes such as hospitalization, development of complications, disease progression, premature disability, or death.[1] The World Health Organization (WHO) has described poor adherence as a worldwide problem of striking magnitude.[3] In a report published in 2003, the WHO further described the scope of poor adherence. Poor adherence affects both men and women of all ages and socioeconomic groups. As the nation continues to age, the risk of poor adherence in the elderly has become a significant concern. This group of Americans accounts for 30% for all prescription medications purchased. The regimens they take are often complex and confusing. The report also indicated that medication adherence is much higher in individuals with acute conditions compared to chronic diseases. **The goal of this lesson is to focus on reviewing and updating strategies to improve adherence in chronic diseases.**

TERMINOLOGY

A number of terms have been used to describe medication-taking behavior. Medication adherence is defined as the degree that the patient takes a specific medication according to the instructions that were agreed upon in conjunction with the healthcare provider.[4,5] This differs from the term medication compliance. Medication compliance is defined as the extent that a patient's behavior coincides with the recommendations of the healthcare provider. The term compliance disregards the patient's involvement in making decisions regarding drug therapy. The term medication compliance is being replaced with medication adherence since the patient's involvement in medication decisions is key to successful treatment.

Other terms that have been used to describe medication-taking behavior include persistence which is the duration from initial prescription filling to the ongoing taking and refilling of medication that defines a treatment continuum.[5]

INCIDENCE OF POOR ADHERENCE

Poor medication adherence is not a new problem.[6] For the past 20 years, the rate of non-adherence has been fairly consistent. It has been reported that adherence drops dramatically after the first 6 months of treatment.[2] One study found that for every 100 prescriptions that are written by a provider, 50 to 70 of those actually make it to the pharmacy for processing. Only 48-66 are actually filled and dispensed to a patient. Of those prescriptions, only 25 to 30 are taken correctly and only 15 to 20 of them are refilled.[7] There are a number of compelling statistics regarding medication adherence that have appeared in the literature.[8]

- Approximately 125,000 people with treatable ailments die each year in the U.S. because they do not take their medication properly.
- Non-adherence accounts for 30-60% of all medication-related hospital admissions.
- Sixty percent of all patients cannot identify their own medications.
- Thirty to 50% of all patients ignore or do not follow instructions concerning their medication.
- Approximately one fourth of all nursing home admissions are related to improper self-administration of medicine.
- Twelve to 20% of patients take other people's medicines

TYPES OF ADHERENCE PROBLEMS

It is important to understand the different types of common adherence problems so that appropriate interventions can be employed. **The most common type of adherence problem is omission of doses.** Approximately one third of patients have reported missing doses occasionally, while another third report that they routinely take drug holidays.[9] These drug holidays can occur a few times a year or more frequently. **The next most frequent type of adherence problem is a delay in timing of doses.** Patients report that they sometimes have timing inconsistency with their medication. This is reported most often when patients are taking multiple medications at different times throughout the day. Adherence with four times a day dosing can be as low as 50%. **Another common adherence problem is termed "white coat adherence".** This is when patients are adherent to their medication regimens the week before and after their visit with the doctor. Some patients do this to try to "normalize" their condition before they see the doctor with the hopes of receiving positive news.

PREDICTORS OF POOR ADHERENCE

There are a number of indicators that a pharmacist can be aware of that may suggest a patient needs adherence interventions. Table 1 identifies major predictors of poor adherence that have been reported in the literature. Patients with these characteristics may need to be triaged to determine if an adherence intervention is appropriate. Since non-adherence can occur in any patient; the pharmacist should have a strategy for screening all patients.

Table 1- Predictors of adherence problems[9, 10]

- Depression
- Living alone
- Multiple physicians
- Cognitive impairment
- Lack of prescription drug coverage
- Low literacy
- Substance abuse
- Low socioeconomic status
- Asymptomatic disease (Hypercholesterolemia)
- Lack of understanding of illness
- Previous adverse reaction to medication
- Lack of trust with provider
- Complexity of treatment
- High medication cost or co-payment
- Missed appointment or refills
- Lack of belief in therapy
- Transportation and parking barriers

FACTORS THAT AFFECT ADHERENCE

There are a number of factors that can lead to poor medication adherence.[3] The World Health Organization has divided these factors into categories called the 5 Dimensions of Adherence. When assessing a patient's risk for non-adherence, it is appropriate to evaluate all of these dimensions.

Social and Economic

The social dimension combines social and cultural factors. The social dimension might include the patient's family and friend support system, their living situation and their work schedule. Cultural issues such as health literacy, English proficiency and attitudes towards medication use would fall into this category.

The economic dimension includes the cost of the medications and supplies as well as the cost of transportation to obtain the prescription drugs. Patients may not refill a prescription or may skip doses to stretch out a prescription. The continuing downswing in the economy has had a significant impact on how patients take their medications. A Harris Poll looked at the impact

of the financial crisis on medication-taking behavior.[11] As unemployment continues to be a problem in some parts of the United States, patients may be faced with making tough decisions about their healthcare purchases. The American Medical Association reports that with every $10 increase in co-pay, there is a 10% reduction in medication adherence.[12] Eliminating out-of-pocket costs can improve medication compliance rates by as much as 8%.

Healthcare system

This dimension really focuses on the relationship that a patient has with their healthcare provider. Does the patient have a high level of trust with the provider and are they able to communicate their concerns freely? Other factors in the healthcare system dimension include assessing services such as trouble scheduling follow up appointments or laboratory tests.

Condition related

There are a number of factors that fall into this category. These would include prescriptions for preventative therapy, treatment of an asymptomatic condition such as hypertension or the chronic use of a medication. In addition, individuals with conditions including developmental disabilities, depression, or mental illness may impact the ability to be adherent.

Treatment-related

The treatment-related dimension is focused on the complexity of the medication regimen, the duration of therapy required, number of medications needed, potential side effects and lack of immediate relief of symptoms. These factors can decrease a patient's success with medication adherence.

Patient-related

Patient related factors include physical limitations such as visual, hearing, swallowing, mobility or cognitive impairments. In addition, other factors such as the patient's ability to understand their condition and their willingness to change behavior fall into this category. Table 2 provides a list of patient-related barriers to medication adherence.

Table 2. Patient-related factors associated with poor adherence[3]

- Forgetfulness or confusion about instructions
- Receiving medications from multiple prescribers
- Apathy (lack of motivation)
- Concurrent alcohol or substance abuse
- Frequent changes in therapy
- Problems swallowing pills or opening container
- Visual impairment—Unable to distinguish color differences in pills
- Fear of addiction or adverse effects
- Denial of illness

PHYSICIAN-RELATED

Physicians can contribute to poor adherence because they may overestimate the patient's cooperation for a certain therapy.[5,9] Physicians are generally not well trained in counseling patients about medication adherence. They often have a limited amount of time and may not consider a patient's lifestyle when prescribing a specific therapy. It has been reported that patient-physician relationships that do not exhibit a high amount of trust may increase the risk for poor adherence. Other physician-related factors include limited office hours that prevent the patient from scheduling time with the doctor, and a lack of reimbursement for adherence counseling.

IMPROVING ADHERENCE

Improving medication adherence is going to take major changes in the attitudes and practices of physicians, pharmacists and patients. The National Council on Patient Information and Education (NCPIE) has developed a list of priority strategies.[5] **One of these strategies is to recognize poor medication adherence as a disease.** It has many of the same characteristics that medical disorders have. It can lead to increased morbidity and mortality; there is a lack of public awareness; adherence can be monitored and assessed and poor adherence is a major public health issue. Changing the approach to poor adherence may result in patients and providers looking at this issue in a new light.

Another strategy is making sure that the information conveyed to a patient is clear. Low health literacy is a major concern in the United States and should be considered when communicating medication information to consumers. The National Institute of Literacy reports that 32 million U.S. adults (14%) cannot read at all. An additional 48 million (21%) read below a 5th grade level.[13] Many consumers may be able to read the label "take one tablet three times a day" but they may not be able to explain how the medication should be taken. Reports have stated that up to 60% of patients cannot explain how their medication should be taken. When information can be reinforced with symbols or pictures, it may enhance the understanding for some patients. In addition, English may not be the first language of many of our patients. When appropriate, the pharmacist should make information available in a language that the patient understands. A number of companies offer patient medication information in multiple languages.

One of the most important ways that a pharmacist can address medication adherence is to talk to the patient. This can lead to insight about specific problems a patient may have with their medication regimen. **When talking to a patient about medication adherence, the technique of motivational interviewing can be quite useful.**

MOTIVATIONAL INTERVIEWING

Motivational interviewing is a patient-centered counseling style for helping patients explore and resolve ambivalence.[14,15] Motivational interviewing is well suited for use in pharmacies and clinics as it can be done in 10 to 15 minute sessions with the patient.[16] Motivational interviewing is derived from the trans theoretical model of change. This model assumes that **changes in behavior occur in 5 stages: precontemplation, contemplation, preparation, action and maintenance.[17]**

When a patient is in the **precontemplation stage**, they do not believe that they have a problem and do not intend to change their behavior.[16] **Contemplation** is the stage where a

patient realizes that their behavior is a problem and they need to make a change, but they do not want to change. **Preparation** is the period when the patient has decided to make the change and has a plan established. The **action phase** is when the patient actually changes their behavior. The **maintenance phase** is the period after the change has been made that requires continued action to keep the change in place. One area that this model of change has been used successfully by pharmacists is in conducting smoking cessation programs.

When a patient is informed that they have a medical condition that requires chronic medication, they may be overwhelmed by the changes they are facing.[14] It is not uncommon for the physician to try to persuade them to change by using logic. If the patient does not follow the recommendation, then the physician may try to be more firm in the recommendation without attempting to determine what the barrier to adherence may be. The use of motivational interviewing provides a different approach. Instead of trying to persuade or fix the problem, the pharmacist tries to establish the patient's readiness to change and reinforce the patient's motivation. They understand that the patient has to decide to change and work to identify the reason to change and motivate that behavior.

FOUR PRINCIPLES IN MOTIVATIONAL INTERVIEWING

Motivational interviewing is a skill that requires practice as every patient is different. It is actually a style of interviewing based on principles.[14] There are 4 principles in motivational interviewing:

- Express empathy
- Develop a discrepancy
- Roll with resistance
- Support self-efficacy

Express empathy

When expressing empathy, the pharmacist demonstrates that they understand the patient's situation and their ambivalence to change. Empathy is different from sympathy.

Develop a discrepancy

This is when the pharmacist tries to help the patient see inconsistencies between their unhealthy behavior and personal goals so that the patient may be willing to change.

Roll with resistance

The pharmacist should not argue with the patient when they are resistant, but rather help them to see a new idea or approach.

Support self-efficacy

Encourage the patient and state your confidence that the patient can make the change.

FOUR SKILLS OF MOTIVATIONAL INTERVIEWING

There are 4 skills that are used in motivational interviewing:[16]

Reflective listening

Reflective listening is when the pharmacist paraphrases back to the patient what they said. Reflective listening accomplishes 3 goals; it clarifies and verifies what the patient said. Paraphrasing back to the patient helps to confirm that you heard what they said correctly. It also decreases the patient's resistance to change. By affirming what they said you make it clear that you understand how they feel. Finally, reflective listening encourages more discussion of why the patient may not want to change.

Ask open questions

During motivational interviewing, the patient should do most of the talking. Using open questions results in the patient answering with more than a yes or no response.[16] Some examples of open questions would be:

- What concerns you most about your diabetes?
- What is the worst thing that could happen if you don't take your medication?
- What have you been told about how to take this medication?

Affirming

Affirming is an important tool to build trust with your patient, recognize positive behavior and reinforce the patient's efforts.[16] Say things like: "Thank you for coming in to discuss this today" or "thank you for your honesty in telling me that you missed your evening dose of medication this past week" or " I know taking this medication is new to you; thank you for talking about your fears with me".

Summarizing

Near the end of your open questions, it is important to summarize back to the patient in 2 to 3 sentences what you heard.[16] In summarizing the comments, the pharmacist tries to focus on the areas where the patient is willing to change. At the end of the summary statement, it is helpful to state "What else?" to signal the patient that they may continue the discussion.

These techniques are designed to focus on building the patient's intrinsic motivation for change. Once the pharmacist is confident that the patient is ready for change, it is important to provide additional information to them. One technique that supports the motivational interviewing process is the ask-provide-ask approach. In this technique, the pharmacist may identify an opportunity to provide examples or suggestions. The pharmacist should first ask permission to provide additional information.

> **Example:** Patient expresses concern that she will not be able to take her medication twice a day as prescribed. She really wants to take her medication correctly but she is busy with her work and her kids.
>
> **ASK:** There are several strategies that many patients have used to help them remember to take the medications. Can I share these with you?
>
> **PROVIDE:** Pharmacist explains some strategies that apply to the patient situation.
>
> **ASK:** What do you think about the strategies I have explained?

Let's take a look at another example of a conversation between a patient and a pharmacist.[16]

Speaker	Motivational principle
Patient: There is no way I am going to be able to remember to use this new asthma inhaler twice a day! I already carry the rescue inhaler around with me; now I have to carry 2 inhalers! And I work late so I have to take my evening dose at work.	Patient is resistant. She is sure she is not going to be able to adhere to this complex regimen.
Pharmacist: Right now it is too difficult for you to remember to take both the new medication inhaler as well as your rescue inhaler. I am glad you are letting me know about this today. It shows that you have a concern about your health.	The pharmacist provides a reflective statement and rolls with the resistance. It is really easy now for the pharmacist to want to persuade or scare her into using the new inhaler, but that generally does not help the situation.
Patient: Yes, I am concerned about my health and I do not want to have an asthma attack. But I feel like I am carrying a medicine cabinet in my purse.	Patient describes her objections or barriers to taking the new inhaler. She is also affirming her desire to stay healthy.
Pharmacist: You are concerned about your health, you feel like you have so much medicine you have to carry around, and you have to use your inhaler at your work.	The pharmacist through reflective statements highlights both sides of the patient's arguments.
Patient: I know I need to take this medication; I don't want to stop breathing and die. I guess I am just frustrated about having to carry all this stuff around.	Patient states reason she needs to take the medicine, but still frustrated.
Pharmacist: You feel stuck. What do you see as a solution to this problem?	Pharmacist reflects ambivalence and then asks open question to explore patient's ways to change
Patient: Well I guess I could leave one of the new inhalers at work and one at home. Then I can take the morning dose before I leave for work and the evening dose at work in the locker room.	Patient generates ideas for how she can solve this problem.
Pharmacist: I think that is a great idea. It seems like this may solve your problem of having to carry 2 inhalers in your purse. You can continue to just carry your rescue inhaler. I think this can be a successful solution for you. Would it be all right if I call you in a week or so and see how things are going?	Pharmacist affirms patient's willingness to solve problem and summarizes the major points. Pharmacist also asks for permission to check on the patient's success in a week.

ROLE OF THE PHARMACIST

As a pharmacist there are numerous opportunities to implement medication adherence programs. The question is how to start an organized approach to identifying patients and conducting interviews. Sometimes it is difficult to determine where to start the process. **One approach is to identify patients who are at highest risk of non-adherence. This can include patients who have diseases with a high risk of morbidity if medication is not taken regularly, such as hypertension, diabetes and asthma. Another high risk population are patients with asymptomatic diseases. This includes hypertension, high cholesterol or secondary prevention of heart attacks and stroke. A third at-risk population includes the elderly patients who may be taking complex regimens or who may have physical or mental limitations that can affect adherence. And finally those patients who are low-literacy.** The pharmacist may need to employ specific tools to ensure low-literacy patients understand how to take their medication.

This may include the use of medication information sheets in low-literacy format or those in other languages, or the use of icon or picture-based tools.

One report provided adherence rates for specific disease states. This may be another approach to consider when trying to identify patients at risk. **Table 3** below summarizes the results of that study.

Disease State	Adherence rate
HIV disease	83.3%
Cancer	79.1%
Cardiovascular disease	76.6%
Infectious disease	74%
Diabetes	67.5%
Sleep disorders	65.5%
Osteoporosis	51%
Asthma	50%
Gout	37%

The pharmacist may generate a list of patients who fit into these categories and review their medication refill history for the previous year. It is important to look back at least 6 months since it has been shown that many individuals stop taking their chronic medications after 6 months. The pharmacist can then review the medication refill history to determine if there are any gaps in refill periods or if they have not refilled certain prescriptions at all. These patients may make up the initial group of patients that are targeted for adherence interventions.

Another approach is to flag patients in the computer who are late to refill their prescriptions. The pharmacist may then schedule an appointment with the patient to interview them and determine what the barriers are and create a plan for change. The pharmacist may choose to plan follow up telephone interviews to motivate positive behavior.

Finally, you can have your patients complete the Morisky 4-Item Self-Report Measure of Medication-Taking Behavior (MMAS-4) or the Morisky 8-Item Self-Report Measure of Medication-Taking Behavior (MMAS-8).[18] These tools consists of 4 or 8 questions that can provide you with information about potential adherence barriers. You can then stratify patients that require an intervention. For every question answered as a yes, score 1 point. The tools and their scoring chart are shown in Table 4.

Table 4. Measuring Non-Adherence[18]

Morisky 4-Item Self-Report Measure of Medication-Taking Behavior (MMAS-4).
1. Do you ever forget to take your (name of health condition) medicine?
2. Do you ever have problems remembering to take your (name of health condition) medication?
3. When you feel better, do you sometimes stop taking your (name of health condition) medicine?
4. Sometimes if you feel worse when you take your (name of health condition) medicine, do you stop taking it?

Morisky 8-Item Self-Report Measure of Medication-Taking Behavior (MMAS-8).
1. Do you sometimes forget to take your pills?
2. People sometimes miss taking their medications for reasons other than forgetting. Thinking over the past two weeks, were there any days when you did not take your medicine?
3. Have you ever cut back or stopped taking your medicine without telling your doctor because you felt worse when you took it?
4. When you travel or leave home, do you sometimes forget to bring along your medicine?
5. Did you take all your medicine yesterday?
6. When you feel like your symptoms are under control, do you sometimes stop taking your medicine?
7. Taking medicine every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your treatment plan?
8. How often do you have difficulty remembering to take all your medicine? ___A. Never/rarely ___B. Once in a while ___C. Sometimes ___D. Usually ___E. All the time

Adherence	MMAS-4 Score	MMAS-8 Score
High adherence	0	0
Medium adherence	1-2	1-2
Low adherence	3-4	3-8

The pharmacist can employ medication pillboxes or develop medication calendars for some patients. In addition, there may be a need to generate telephone reminders that alert patients when prescriptions need to be refilled. If patients do not refill prescriptions in a timely fashion, there needs to be some specific follow up. Pharmacists can no longer sit passively and wait for the patient to make a decision to refill a prescription.

There are web-based applications that may be useful for some patients. Applications like www.care4today.com or www.scriptyourfuture.org will allow patients to input their medication lists and receive reminders to their cellphone or allow them to document on the "app" that they took their doses. There are also devices such as Medminder, which is a smart pill box. It connects via satellite and has trays for different medications. It will alert the patient (and family member) if a medication is not taken. This tool can send text messages, phone calls or emails to family members to alert them if a dose is not taken. There are also technology tools for specific disease states. One example is CareTRx. This is a platform for chronic respiratory disease management that combines a sensor device that connects to most inhalers, a data analytics platform, an accessible user interface, and behavioral triggers to help asthma and COPD patients manage their condition. Originally designed for parents to track their child's inhaler use, it is now available with applications for adults with respiratory conditions. All of these adherence tools will generate reports for the patient that can be shared with their physician or pharmacist.

The pharmacist may also want to alert physicians to non-compliant patients. This can prevent the physician from prescribing additional medications because they think the medication is not working.

Employing these web-based applications and other screening tools can be used to market pharmacy services to prescribers in the area. By promoting a commitment to medication adherence, many prescribers will benefit from improved outcomes for their patients. Sharing some general examples in marketing materials can increase business from prescribers.

CASE STUDY

Background

You have implemented an alert with the pharmacy computer system that will identify patients who have not refilled prescriptions for cholesterol lowering agents. You receive an alert that LP, a 62-year-old Caucasian male who has a diagnosis of hyperlipidemia and diabetes has not filled his prescription for simvastatin. His refill records show the following:

Medication	Strength	Last Fill	Days Supply	Quantity	Sig	Prescriber
Metformin	1000 mg	13 days ago 03/01/16	30	60 TAB	1 PO BID	Dr. Jones
Glyburide	10 mg	13 days ago 03/01/16	30	60 TAB	1 PO BID	Dr. Jones
Simvastatin	40 mg	74 days ago 12/13/15	30	30 TAB	1 PO QHS	Dr. Marsh
Aspirin	81 mg	1 day ago 03/12/16	30	30 TAB	1 PO DAILY	Dr. Marsh

You call LP and ask him to come in to discuss his medications today, which he agrees to do.

The patient arrives at the pharmacy and you begin the interview process.

Pharmacist: *How are you doing today Larry? I wanted to talk to you about your diabetes and high cholesterol. I noticed that you have not gotten your cholesterol medication refilled in a while. Have you visited with your doctor recently?*

LP says he is doing great. He has not taken the simvastatin because when he last saw his doctor, she said his cholesterol is perfect and his diabetes is really well-controlled. He takes his diabetes medication every day because he knows that is important.

LP does not understand that the cholesterol was likely controlled **BECAUSE** of the medication and that he will need the medication long-term.

Pharmacist: *It is great that your diabetes is under control. It is really important that you take the diabetes medication every day. I am glad to see you remember to take it every day. Like your diabetes, it is important to take your simvastatin every day as well. The simvastatin has brought your cholesterol level down, but in order for you to keep it down you need to keep taking this medicine. Can you help me understand why you stopped taking it?*

LP says he understands how important his diabetes medicine is, but when the doctor told him his cholesterol was good, he thought he could stop taking the simvastatin. He comments on the fact that he really wants to take as little medication as possible.

Pharmacist: *Larry thanks for helping me understand why you stopped taking the cholesterol medication. Just like your diabetes, in order to keep your cholesterol levels normal, you need to keep taking the simvastatin. Would you be willing to start back on the simvastatin again?*

LP states that he did not understand that the simvastatin was a chronic medication. Although he is not happy that he has to keep taking it, he really wants to stay healthy so he can enjoy time with his 3-year-old grandson, Tyler. So he agrees to have the prescription filled and restart the medication.

Pharmacist: *I am glad that you are serious about improving your health. Your diabetes has been well-controlled. Starting back on the simvastatin will help keep you healthy so you and Tyler will have plenty of time to spend together. Would it be okay if I give you a call in a few weeks to see how things are going?*

LP agrees that it would be fine for the pharmacist to contact him in a few weeks. The pharmacist summarizes his intervention with LP and makes a note to contact him in 3 weeks to see how he is doing on the simvastatin.

SUMMARY

Poor medication adherence is a national public health issue that contributes to increased morbidity, mortality, hospitalizations, and healthcare costs. Although poor medication adherence occurs in all patient types, certain patient populations are considered to be at an increased risk including the elderly, those with asymptomatic conditions, those with low-literacy and those with high risk medical conditions. Determination of suboptimal adherence may be evaluated through a variety of direct and indirect methods, but there is no gold standard tool.

Pharmacists can become more involved in addressing medication adherence by implementing motivational interviewing techniques with their patients. These principles may be new to many pharmacists and will require a change in the approach taken towards patient counseling. Pharmacists can play a key role in improving adherence due to their knowledge of drug therapy and access to patients in a community setting.

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2016 FUTURE TOPICS

- New – Approved Drugs
- Validation of Pain Medication Rxs
- Pharmacogenetics
- Hyperlipidemia
- Pharmacy Considerations Regarding the Opioid Crisis of Abuse
- Vaccines---Truths, Myths, Hesitancy, Controversies
- Update C. diff---do probiotics and/or yogurt help?

Fill in the information below, answer questions and return **Quiz Only** for certification of participation to: CE PRN®, 400 Lake Cook Road, Suite 207, Deerfield, IL 60015.

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NAME_____**CE PRN I.D.#**(if you have this)_____
ADDRESS _____CITY _____STATE _____ZIP _____
I am a Pharmacist ☐ **I am a Technician** ☐

CPEMonitor ID _____**Birthdate (MM/DD)** _____
ARE YOU LICENSED IN FLORIDA? IF YES, FL LIC # _____
EMAIL Address (REQUIRED) _____

LESSON EVALUATION

Please fill out this section as a means of evaluating this lesson. The information will aid us in improving future efforts. Either circle the appropriate evaluation answer, or rate the item from 1 to 7 (1 is the lowest rating; 7 is the highest).

1. Does the program meet the learning objectives?
   - Differentiate between adherence, compliance & persistence YES NO
   - List factors that may impact adherence YES NO
   - Describe the significance of motivational interviewing YES NO
   - Discuss methods that pharmacy can use to promote increased adherence YES NO

	Low Relevance						Very Relevant
3. Relevance of topic	1	2	3	4	5	6	7

4. What did you like most about this lesson?_____
5. What did you like least about this lesson?_____

Please Mark the Correct Answer(s)

1. **Which of these is often interchanged with adherence, but does not include the patient's involvement in decision making?**
   A. Compliance B. Persistence
   C. Concordance D. Agreement
2. **Of the following terms, which is generally used as a way to define the treatment continuum from the initial prescription fill to the ongoing taking & refilling of a medication?**
   A. Adherence B. Compliance
   C. Persistence D. Concordance
3. **Which of these represent(s) consequences of poor adherence?**
   A. Improved patient safety
   B. Less favorable health outcomes
   C. Increasing healthcare costs
   D. B & C
4. **A study reported by the AMA found that for every $10 increase in co-pay, there is a:**
   A. 5% reduction in adherence
   B. 10% reduction in adherence
   C. 10% increase in adherence
   D. No significant change in adherence
5. **The transtheoretical model of change consists of several phases. The preparation phase is when the patient has decided to make the change & has a plan established.**
   A. True B. False
6. **One study found that for every 100 prescriptions written, how many are actually filled & dispensed to a patient?**
   A. 50 – 70%B. 15 – 20%
   C. 34 – 55% D. 48 – 66%
7. **Which of these are patient-related factors associated with poor adherence?**
   A. Denial of illness
   B. Prescriptions from multiple prescribers
   C. Knowledge of the pharmacist
   D. A & B
8. **Pharmacists can play a role in promoting adherence by participating in which of these strategies?**
   A. Patient education
   B. Refill reminders
   C. Motivational interviews
   D. All of these
9. **You are routinely conducting MMAS-8 screening on all of your patients who take 2 or more chronic medications. You have a patient who scores a '6' on the MMAs-8. This indicates low adherence.**
   A. True B. False
10. **Pharmacists may use the following tools with patients to improve adherence.**
    A. Medication pillbox
    B. Continuing professional education programs
    C. Medication information sheets
    D. A & C

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