



A PHARMACY CONTINUING EDUCATION PROGRAM

W-F Professional Associates, Inc. 400 Lake Cook Rd., Suite 207 Deerfield, IL 60015 847-945-8050

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## SEPTEMBER 2011 "MEDICATION ADHERENCE"

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**THIS MONTH**  
**"Medication**  
**Adherence"**

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Medication non-adherence is a major public health issue, and it is different from non-compliance. Our goals in this lesson are to: differentiate between these; and to define pharmacy's role within adherence. This lesson provides 1.25 hours (0.125 CEUs) of credit, and is intended for pharmacists in all practice settings. **The program ID # for this lesson is 707-000-11-009-H01-P. Pharmacists completing this lesson by September 30, 2014 may receive full credit.**

**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.

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**The objectives of this lesson are such that upon completion the participant will be able to:**

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1. Describe the difference between adherence, compliance & persistence.
2. Summarize factors that can impact medication adherence.
3. Explain the principles associated with motivational interviewing.
4. Provide examples of how pharmacists can promote medication adherence.

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## INTRODUCTION

Medication non-adherence is a major public health problem.<sup>1</sup> 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.<sup>2</sup> 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.<sup>1</sup> The World Health Organization (WHO) has described poor adherence as a worldwide problem of striking magnitude.<sup>3</sup> 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. This lesson will focus on strategies to improve adherence in chronic disease.

## 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.<sup>4,5</sup> 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.<sup>5</sup> The other term that has been employed is **concordance**. Concordance focuses on the patient and provider developing a shared health belief and then creating a plan of care based on that shared belief. Concordance assumes that the patient and provider have equal roles in medication decision-making.

## INCIDENCE OF POOR ADHERENCE

Poor medication adherence is not a new problem.<sup>6</sup> 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.<sup>2</sup> Over one-half of patients stop taking their medication within the first year. There are a number of compelling statistics regarding medication adherence that have appeared in the literature.<sup>7</sup>

- Approximately 125,000 people with treatable ailments die each year in the US because they do not take their medication properly.
- 14 - 20% of patients never fill their original prescriptions.
- 60% of all patients cannot identify their own medications.
- 30 - 50% of all patients ignore or otherwise compromise instructions concerning their medication.
- Approximately one fourth of all nursing home admissions are related to improper self-administration of medicine.
- 12 - 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.<sup>8</sup> 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

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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 alert to 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<sup>8,9</sup>**

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

**MEASURING ADHERENCE**

There are a number of tools that can be used to measure adherence. However, there is no gold standard for adherence measurement. The tools all have potential advantages and disadvantages. These tools be categorized as **direct** or **indirect** methods.<sup>8</sup>

The **direct methods** are the most objective and accurate measurements.<sup>8</sup> They also tend to be expensive or impractical to perform. These measures include direct observation of pill-taking, serum level sampling of the drug, or measurement of a biological marker. Direct observation is generally an impractical process. It requires the healthcare professional to watch the patient take each dose of medication. In addition to being impractical, the patient could hide the dose in their mouth and dispose of it later. This tool is used, however, in certain situations, particularly when complete adherence is critical. An example of the use of direct observation is the administration of tuberculosis drugs.

Although the measurement of drug serum levels is employed in some patients, it can be costly.<sup>8</sup> It is often used with drugs that have a narrow therapeutic index or where adherence is particularly important, such as with phenytoin to prevent seizures. The use of biological markers is commonly used in chronic diseases such as diabetes, where the hemoglobin A1c is used to assess adherence to diabetic medications. This is particularly useful in identifying patients who are only adherent right before the physician visit since this marker measures change over time.

**Indirect methods** of measuring adherence include interviewing the patient, counting pills and reviewing pharmacy refill rates.<sup>8</sup> Unfortunately, interviewing patients or caregivers may result in distorted responses. Patients often want to please the physician or pharmacist and will say what they think wants to be heard. When interviewing a patient about their adherence, it is important to use open-ended questions. Instead of asking if the patient takes their medication, ask the patient "how many times in the past 2 weeks did you skip your medication?"

Pill counts are easy to perform, but may not be accurate.<sup>8</sup> Patients may sometimes combine pills from previous refills, or dump the pills out of the container. The use of pharmacy refill data is a common tool used to determine adherence. Although this is an objective tool, it may not always be accurate. A patient may be refilling a prescription routinely

but not taking the medication properly. The refill of a prescription does not always mean the drug was taken. In addition, some patients may refill prescriptions at different pharmacies, and unless the patient uses a closed pharmacy system (Medicaid, Veterans Administration), the refill data may not be accurate.

Other indirect methods that may be considered include electronic medication monitors which download information each time the prescription container is opened.<sup>8</sup> This is an expensive system and requires the patient to return to the pharmacy to have the information downloaded. Various measurements including blood pressure and heart rate can be used to determine if the patient has achieved the therapeutic endpoint. Although these are objective measurements, other factors can influence the results of these measurements.

**FACTORS THAT IMPACT ADHERENCE**

There are a number of factors that can lead to poor medication adherence.<sup>3</sup> These can be divided into 4 categories; those related to the **patient, physician, medication and pharmacy.**

***Patient-related***

Table 2 provides a list of patient-related barriers to medication adherence. The areas that are most critical to success in overcoming poor adherence are information, motivation and behavioral skills. The most important of these areas is motivation.

**Table 2. Patient-related factors associated with poor adherence**<sup>3</sup>

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 adherence to a certain therapy.<sup>5,8</sup> Physicians are generally not well trained in counseling patients about medication adherence. They often have a limited amount of time and do 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.

***Medication-related***

The primary adherence barrier related to medication is the cost of the prescription or the co-pay.<sup>5,8</sup> Patients may not refill a prescription or may skip doses to stretch out a prescription. The recent downswing in the economy has had a significant impact on how patients take their medications. A recent Harris Poll looked at the impact of the financial crisis on medication-taking behavior.<sup>10</sup> Approximately one-half of the respondents reported an increase in medication cost hardship since 2008. As high unemployment continues to plague the United States, patients may be faced with making tough decisions about their healthcare purchases.

***Pharmacy-related***

Although the community pharmacist is in the best position to improve medication adherence, there are pharmacy-related barriers.<sup>5</sup> These include attitudes, knowledge level of the pharmacist, and pharmacy operations. The attitudes of patients and physicians about the role of the pharmacist may not include a role for adherence counseling. Some physicians may believe the pharmacist is impinging on the patient-physician relationship. In addition, some pharmacists believe that they are responsible only for filling a given prescription and instructing the patient on the proper way to take the medication. They may expect the patient will just follow their instructions. In order for pharmacists to effectively counsel patients regarding medication adherence, they must be knowledgeable about both the disease states and drug therapy. Currently there is a wide variance in knowledge among pharmacists. In addition, many pharmacists are not well-trained in motivational interviewing which is a key component to effective medication adherence counseling. The operational aspects of the community pharmacy may also have a negative impact on medication adherence. Some

pharmacies do not have adequate space for private counseling, the pharmacist may be too busy filling prescriptions to counsel patients, or they may not have the support of management for these counseling sessions.

### **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.<sup>5</sup> 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. 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. When talking to the patient the pharmacist can learn 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.<sup>11,12</sup> Motivational interviewing is well suited for use in pharmacies and clinics.<sup>13</sup> Motivational interviewing is derived from the transtheoretical model of change. This model assumes that changes in behavior occur in 5 stages: precontemplation, contemplation, preparation, action and maintenance.<sup>14</sup>

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.<sup>14</sup> 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.<sup>11</sup> 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.<sup>11</sup> 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:<sup>11</sup>

**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.<sup>11</sup> 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.<sup>11</sup> Saying 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.<sup>11</sup> 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.<sup>11</sup>

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.	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**

For the pharmacy practitioner, 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 is 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 for teaching low-literacy patients.

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 to create a plan for change. The pharmacist may choose to plan follow up telephone interviews to motivate positive behavior.

The pharmacist may need to 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 the prescription.

The pharmacist may want to create an adherence report that is shared with the physician to ensure that they are aware of the barriers that exist for a specific patient. The physician can use this information to reinforce any action that the pharmacist has taken to encourage adherence.

**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 08/01/11	30	60 TAB	1 PO BID	Dr. Jones
Glyburide	10 mg	13 days ago 08/01/11	30	60 TAB	1 PO BID	Dr. Jones
Simvastatin	40 mg	74 days ago 5/30/11	30	30 TAB	1 PO QHS	Dr. Marsh
Aspirin	81 mg	1 day ago 08/12/11	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 are remembering 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.

### REFERENCES

- Brown MT, Bussell JK. Medication adherence: WHO cares? *Mayo Clin Proc* 2011;86(4):304-314.
- New England Healthcare Institute. Thinking outside the pillbox. A system-wide approach to improving medication adherence for chronic disease. [www.nehi.net/publications/44/thinking\\_outside\\_the\\_pillbox\\_a\\_systemwide\\_approach\\_to\\_improving\\_patient\\_medication\\_adherence\\_for\\_chronic\\_disease](http://www.nehi.net/publications/44/thinking_outside_the_pillbox_a_systemwide_approach_to_improving_patient_medication_adherence_for_chronic_disease). Accessed August 2, 2011.
- World Health Organization. Adherence to long-term therapies: evidence for action. [http://www.who.int/chp/knowledge/publications/adherence\\_report/en/index.html](http://www.who.int/chp/knowledge/publications/adherence_report/en/index.html). Accessed: August 3, 2011.
- Kreps GL, Villagran MM, Zhao X, et al. Development and validation of motivational messages to improve prescription medication adherence for patients with chronic health problems. *Patient Educ Couns*. 2011, doi:10.1016/j.pec.2011.04.029.
- National Council on Patient Information and Education. Enhancing prescription medicine adherence: a national action plan. [http://www.talkaboutrx.org/documents/enhancing\\_prescription\\_medicine\\_adherence.pdf](http://www.talkaboutrx.org/documents/enhancing_prescription_medicine_adherence.pdf). Accessed: August 5, 2011.
- Granger BB, Bosworth HB. Medication adherence: emerging use of technology. *Curr Opin Cardiol*. 2011;26(4):279-287.
- Wertheimer AI, Santella TM. Medication compliance research: still so far to go. *J Appl Res*. 2003;3(3):254-261.
- Osterberg L, Blaschke T. Adherence to medication. *N Engl J Med*. 2005;353(5):487-497.
- Touchette DR, Shapiro NL. Medication compliance, adherence, and persistence: Current status of behavioral and educational interventions to improve



outcomes. *J Manag Care Pharm* 2008;14(6):S2-S10.

Piette JD, Rosland AM, Silveira MJ, Hayward R, McHorney CA. Medication cost problems among chronically ill adults in the US: did the financial crisis make a bad situation even worse? *Patient Pref Adher*. 2011;5(1):187-194.

Levensky ER, Forcehimes A, O'Donohue WT, Beitz K. Motivational interviewing. *Am J Nurs* 2007;107(10):50-58.

Rollnick S, Miller WR. What I motivational interviewing? *Behav Cogn Psychother*. 1995;23(4):325-334.

Resnicow K. Motivational interviewing in medical and public health settings. In: Miller WR, Rollnick S. ed. *Motivational interviewing preparing people for change*. 2<sup>nd</sup> Ed. New York (NY): Guilford Press;2002.

DiClemente CC, Prochaska JO. Self-change and therapy change of smoking behavior: a comparison of processes of change in cessation and maintenance. *Addict Behav*. 1982;7(2):133-42.

## TOPICS FOR BALANCE OF 2011

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In the 2<sup>nd</sup> paragraph of explanation beneath TOOL KIT, click on the word "here." A full explanation will pop up.

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**SEPTEMBER 2011 "MEDICATION ADHERENCE" Volume 33 Number 9**

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Fill in the information below, answer questions and return **Quiz Only** for certification of participation to:  
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**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?

Describe the difference between adherence, compliance & persistence Yes No

Summarize factors that can impact medication adherence Yes No

Explain the principles associated with motivational interviewing Yes No

Provide examples of how pharmacists can promote medication adherence Yes No

2. Was the program independent & non-commercial Yes No

	Poor		Average			Excellent	
	1	2	3	4	5	6	7
3. Relevance of topic							

4. What did you like most about this lesson? \_\_\_\_\_

5. What did you like least about this lesson? \_\_\_\_\_

**Please Select the Most Correct Answer(s)**

1. Which of the following is often inter-changed with adherence.

- A. Compliance
- B. Persistence
- C. Concordance
- D. Agreement

2. Concordance is generally used as a way to define the treatment continuum from the initial prescription fill to the ongoing taking & refilling of the drug.

- A. True
- B. False

3. Directly observed therapy as a means of medication adherence is impractical in most clinical situations.

- A. True
- B. False

4. A patient with a recently diagnosed seizure disorder has adequate initial control. Recently she's had an increase in # of seizures. Her MD suspects non-adherence. What is recommended?

- A. Measure phenytoin blood level
- B. Directly observe therapy
- C. Pill counts
- D. Prescription refill rates

5. According to the NCPIE, the co-pay of a prescription can have an impact on medication adherence. This is an example of a medication-related factor.

- A. True
- B. False

6. Which of these represents consequences of poor adherence?

- A. Improved patient safety
- B. Less favorable health outcomes
- C. Increasing health costs
- D. B & C

7. Which of these are patient-related factors associated with poor adherence?

- A. Denial of illness
- B. Prescription from multiple prescribers
- C. Knowledge of the pharmacist
- D. A & B only

8. Pharmacists can play a role in which of these strategies to improve adherence?

- A. Patient education
- B. Refill reminders
- C. Motivational interviews
- D. All of these

9. The transtheoretical model of change consists of 5 phases. The preparation phase is the period when the patient decides to change & establishes a plan.

- A. True
- B. False

10. Pharmacists may use the following with patients to improve adherence:

- A. Medication pillbox
- B. Continuing education programs
- C. Medication information sheets
- D. A & C only

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