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**CMAG**

**CASE MANAGEMENT  
ADHERENCE GUIDELINES**

**VERSION 2.0**

Guidelines from the Case Management Society of America  
for improving patient adherence to medication therapies











June 2006

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# CASE MANAGEMENT ADHERENCE GUIDELINES

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# Medication Nonadherence- An Epidemic





# CHAPTER 1:

## MEDICATION NONADHERENCE AN EPIDEMIC

**In this Chapter we will review the following:**

- ✓ Define Adherence Terminology.
- ✓ Understand Statistics related to Adherence.
- ✓ Understand the Consequence of Medication Nonadherence.
- ✓ Identify the Factors related to Nonadherence.





## CHAPTER 1: MEDICATION NONADHERENCE - AN EPIDEMIC

Medication nonadherence is a multifaceted problem, especially for patients with chronic diseases. Increasingly, our society relies upon medications to prevent hospitalization and improve quality of life. Numerous studies have shown that medicines improve the clinical outcomes of morbidity and mortality. Despite such findings, many patients do not realize the full potential benefits of prescription therapies. Too often this situation is the result of their failure to take some or all of the medications prescribed by their physician. The consequence is a decrease in quality-of-life improvement derived from medicines and unnecessary increases in avoidable healthcare cost.



### **ADHERENCE-FACT:**

The #1 problem in treating illness today is patients' failure to take prescription medications correctly, regardless of patient age.

### **NOTES:**

Let's begin by defining the terminology surrounding medication non-adherence. Compliance, adherence, and persistence are all terms commonly used in the literature to describe medication-taking behaviors. Compliance is the traditional term but this term suggests a passive approach where the patient follows the advice and directions of the healthcare provider. Compliance implies a paternalistic viewpoint where the patient, often with little understanding, unquestionably follows the advice of the physician or other healthcare provider. A patient that consciously or unconsciously refuses to follow the advice of a healthcare provider is considered noncompliant.

Adherence is also a term used to measure medication-taking behavior. It is similar to compliance in that it suggests how well a patient is taking his or her medication regimen. The difference between adherence and compliance is that adherence implies a collaborative decision between the patient and the healthcare provider. Adherence implies a relationship where the patient and healthcare provider come to a consensus on the most appropriate treatment options for the patient. The following is the definition that the World Health Organization's working group on adherence to long-term therapies adopted as their definition of adherence: "the extent to which a person's behavior - taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider" (WHO, 2003).

With adherence the patient follows an agreed upon therapeutic regimen instead of just blindly following the advice of the physician. Utilizing the term adherence fosters patient ownership and responsibility for mutually agreed upon therapeutic regimens. Since patient buy-in to the treatment is an important factor that fosters appropriate medication taking,

**ADHERENCE-FACT:**

**32 million**  
Americans are taking  
three or more  
medications daily.

**NOTES:**

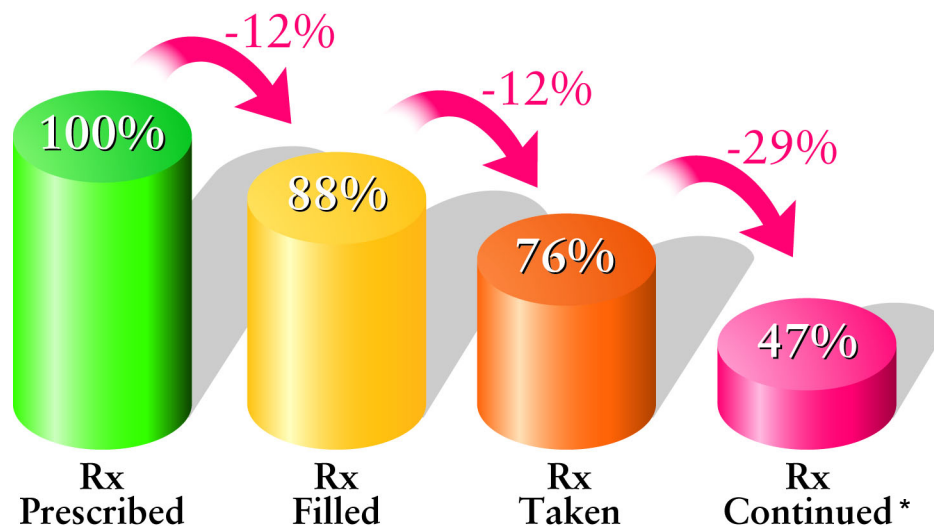
adherence is the now the generally preferred term to describe appropriate medication taking behaviors.

Persistence is a related term that describes the ability of patients to continue to take medications for their intended course. In the case of chronic diseases, the appropriate course of medication may be months, years, or even the patient's lifetime. In some cases, patients may take their medication as prescribed but not refill the medication after the initial prescription runs out. In this case the patient might be considered adherent while on therapy but not appropriately persistent. Discussing the intended course of therapy when patients are first started on therapy has been shown to be an extremely important factor in keeping patients persistent with a medication regimen.

So what happens after a prescription is written by the physician? How bad is the situation of medication nonadherence? Figure 1 illustrates some startling insights into the depth of this epidemic in the United States (AHA, 2002). Although the numbers are specific to cardiovascular medications, they are applicable to many disease states.

Initially, 12% of the patients fail to have their prescriptions filled. This group of patients ultimately perceives the prescription to be of little, if any, benefit in improving their health status.

Next, an additional 12% of patients obtain initial supplies of their prescription medications, but do not take them! In this group of patients, health-care dollars are not only lost on the office visit, but money is



\*22% of US patients take less of their medication than is prescribed.

**Figure 1. Medication-taking behavior (AHA, 2002).**

wasted on medications that will never be used. Unfortunately, this is only a fraction of the added cost burden to the healthcare system as a consequence of nonadherence.

Finally, 29% of the patients stop taking their prescription medications before supplies run out or before they have completed a course of therapy. It is hard to imagine that patients requiring a lifetime of therapy just stop taking their medications for no apparent reason. Unfortunately, this is a typical behavior in many disease states.

After the loss of patients who do not get their prescriptions filled, those who do not take their medications once a supply is obtained, and those



who make the choice to stop therapy, we are left with about 50% of any given patient population that continues taking their medication. Of these remaining patients, about 22% take less of their medication than is prescribed. They miss or skip doses and consequently lose the maximum potential benefits of therapy.

### **When are patients most likely to become nonadherent to therapy?**

Patients may become nonadherent to medications at anytime during the course of therapy, however, the greatest decline in adherence with most medications occurs early (i.e., first days to weeks) in the course of therapy. This may result from a number of factors including medication side effects or delayed onset of effect of the medications. This may also occur because patients do not believe that they have a disease or that the medication will be effective in allaying complications associated with their disease. Therefore, it is especially important for healthcare providers to be available to answer questions and address patient concerns whenever a new therapy is initiated. Early and frequent follow-up has been found to be an important factor in keeping patients adherent to therapy (Bull, 2002).

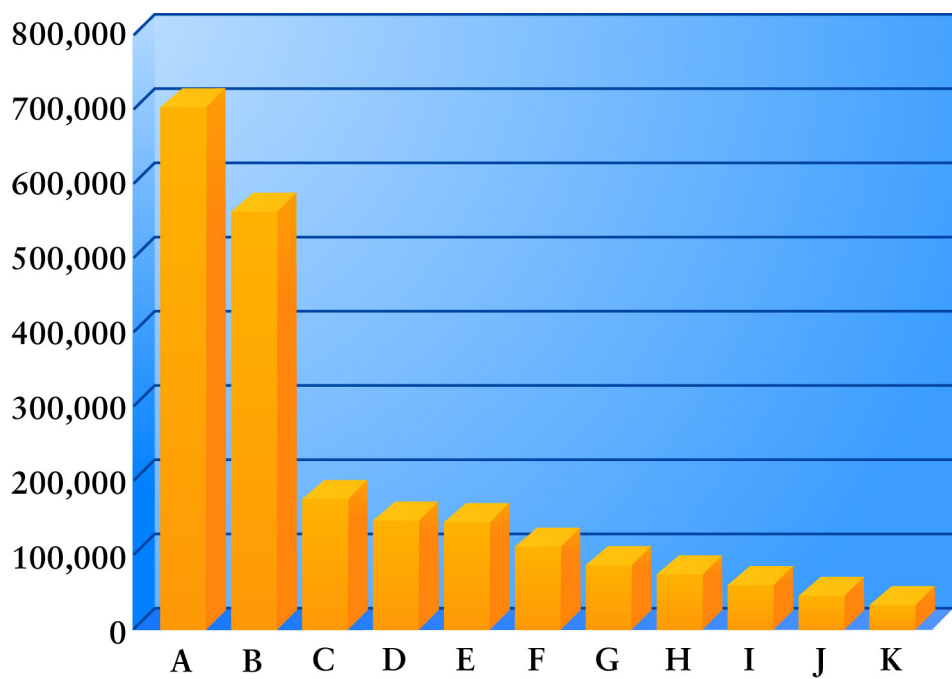
Many interventions designed to improve adherence do not occur until the patient is due for a medication refill, fails to return for a follow-up appointment or has already been otherwise identified as being nonadherent to therapy. In these cases the intervention has to try to change an already established pattern of behavior. The ideal time to consider adherence interventions is when therapy is first initiated. Some of these interventions may be as simply as discussing the positive health benefits of taking the medication and asking if the patient is willing to take a medication to treat their condition.

### **ADHERENCE-FACT:**

Approximately 125,000 deaths occur annually in the United States because of nonadherence with cardiovascular medications.

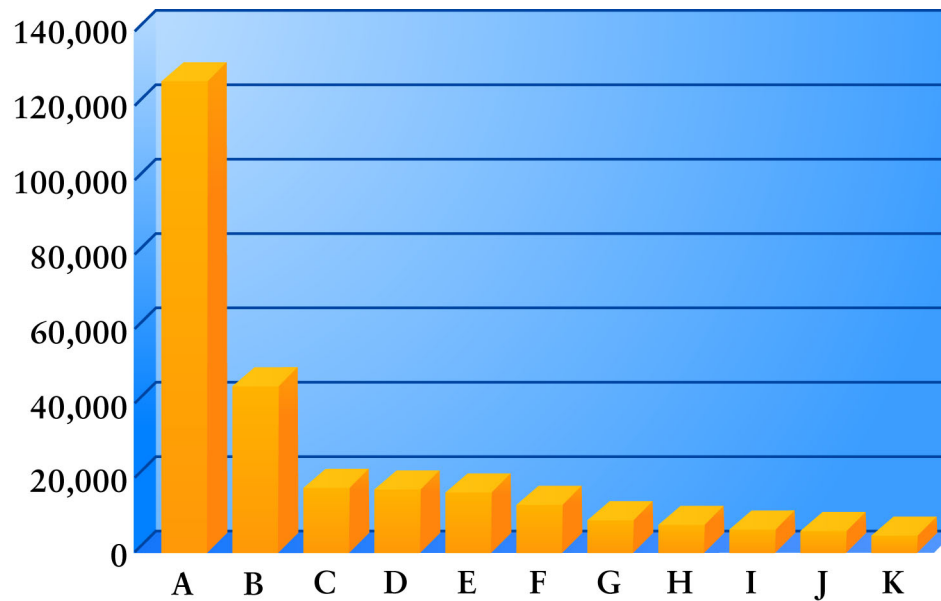
### **NOTES:**

# Causes of Death in the U.S.



Disease	No. of Deaths Per Year in the US
A. Heart disease	700,142
B. Cancer	553,768
C. Stroke	163,538
D. Medication nonadherence	125,000 (est)
E. Chronic lower-respiratory diseases	123,013
F. Accidents (unintentional injuries)	101,537
G. Diabetes	71,372
H. Influenza/Pneumonia	62,034
I. Alzheimer's disease	53,852
J. Nephrotic syndromes	39,480
K. Septicemia	32,238

**Figure 2. Causes of death in the United States (CDC, 2002; McCarthy, 1998).**



Disease	No. of Deaths Per Year in the US
A. Medication nonadherence	125,000 (est)
B. Motor vehicle/Traffic	42,443
C. Firearm suicide	16,869
D. Falls	15,019
E. Poisoning	14,078
F. Firearm homicide	11,348
G. Unspecified	7213
H. Suffocation suicide	6198
I. Unintentional suffocation	5555
J. Poisoning suicide	5191
K. Unintentional fire burn	3423

**Figure 3. Causes of accidental death in the United States (CDC, 2002; McCarthy, 1998).**



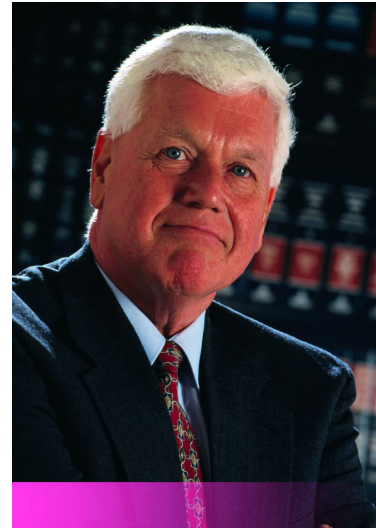
**ADHERENCE-  
FACT:**

**22 percent** of Americans take less of the medication than is prescribed on the label.

**NOTES:**

## What are the Consequences Associated with Medication Nonadherence?

In the context of a disease, medication non-adherence can truly be termed an "epidemic." Nonadherence does not just adversely affect the lives of many individuals. Patients who do not reach their therapeutic goals typically end up consuming greater healthcare resources than those who take their medications correctly. It is currently estimated that nonadherence costs the healthcare system an additional \$100 billion per year in the United States (Vermiere, 2001).



Ten percent of all hospital admissions (30% for those individuals aged >65 years) and 23% to 40% percent of all nursing home admissions are the result of nonadherence. Poor adherence clearly leads to an increase in avoidable acute healthcare resource utilization and cost as well as to poor patient outcomes (Vermiere, 2001).

A recently published study found that for a number of chronic medical conditions (Diabetes, Hypertension, Hypercholesterolemia, Congestive Heart Failure) that higher rates of medication adherence were associated with significantly lower rates of hospitalization. Increased adherence to medication was associated with a reduction in overall medical costs even when the higher costs of medications in more adherent patients were accounted for (Sokol 2005).

The World Health Organization (WHO) states that adherence to long-term therapy for chronic illness in developed countries averages 50% (WHO, 2003). In developing countries, the rates are even lower. This contributes to prolonged or additional illnesses. In the United States alone, 32 million patients are taking 3 or more prescriptions daily. As the number of daily medications increases, there is a corresponding decrease in adherence rates. Approximately 125,000 deaths occur annually in the United States because of nonadherence with cardiovascular medications (McCarthy, 1998). Reviewed against the Centers for Disease Control's most recent report on causes of death (CDC, 2002), this suggests that medication nonadherence is the fourth-leading cause of annual mortality in the United States (Figure 2).

If one considers death due to nonadherence as an accidental outcome of poor medication-taking behavior, it may be more appropriate to compare

nonadherence-related deaths to others causes of accidental death. It then becomes apparent that medication nonadherence is, by far, the number one cause of unintentional death in the United States (Figure 3). On an annual basis in the United States, 3 times as many people die from non-adherence than from motor vehicle-related accidents.

### **What factors contribute to medication nonadherence?**

Adherence is a complex behavioral process strongly influenced by the environments in which patients live, healthcare providers practice, and healthcare systems deliver care. It is related to the way in which a patient judges personal need for a medication against a variety of competing needs, wants, and concerns (adverse effects, stigma, cultural beliefs, cost, etc.). In fact, patients are not the only factor that affects adherence. Healthcare providers, complex medication regimens, and accessing and navigating the healthcare delivery system can contribute to the problem of nonadherence.

Table 1 lists some of the common factors that have been associated with medication nonadherence. It is important to recognize that a patient may have multiple risk factors for medication nonadherence. Also, factors that may influence a patient's medication taking behavior may change over time. Patients may experience side effects or loose insurance coverage which may decrease their willingness to take medications. It is therefore important to continually assess the patient's adherence to therapy.

### **How do we improve medication adherence?**

As discussed above, adherence to medications is a complex and multifaceted problem. Because there is no single reason for non-adherence, there can be no "one size fits all" approach to improving adherence.

Many of the interventions that have been conducted focus on making the medication regimen either easier to take (simplification of the dosage regimen) or easier to remember (adherence aids, refill reminders). This type of intervention can be extremely effective for specific patients but are only modestly effective when broadly applied to a population that may have a broad range of reasons for adherence (Krueger 2003). Simplifying a dosage regimen is likely to do little for a patient that does not believe that taking medications is important or that these therapies will improve their health.

#### **ADHERENCE-FACT:**

**12 percent** of Americans don't fill their prescription at all.

#### **NOTES:**

**Medication-related factors**

- Increasing number of daily doses
- Increasing number of concurrent medications
- Perceived or actual unpleasant adverse effects
- Long-term therapy, especially preventive therapy or therapy for asymptomatic conditions

**Patient-related factors**

- Mental illness
- Substance abuse
- Lack of financial resources to purchase medication
- Lack of social support
- Unstable living environment
- Very busy schedule
- Physical disability or lack of mobility
- Problems with literacy or fluency in the language of the healthcare provider
- Denial of illness
- Low perceived susceptibility to the disease (absence of symptoms) or its complications
- Low perceived or actual severity of illness
- No or few perceived benefits of therapy
- Belief that it is not important to follow the medication regimen
- Lack of confidence in ability to follow the medication regimen
- Negative expectations or attitudes toward treatment
- Significant behavior change required by treatment

**Healthcare provider-related factors**

- Poor healthcare provider-patient relationship
- Poor healthcare-provider communication skills (contributing to lack of patient knowledge or understanding of the treatment regimen)
- Disparity between the health beliefs of the healthcare provider and those of the patient
- No positive reinforcement from the healthcare provider

**Healthcare system-related factors**

- Lack of healthcare insurance
- High cost of medications
- High co-payments for medications or office visits
- Lack of access to medical facilities or pharmacy

**Table 1. Common Causes of Non-adherence**  
(Vermeire, 2001; Miller, 1997; Osterberg, 2005).



Interventions that have demonstrated to be most effective in improving medication adherence are those that are comprehensive and deal with multiple medication taking issues. Comprehensive interventions may address a variety of issues including patient education, motivation, social support and individualizing therapy based on patient's concerns and needs (Krueger 2003, McDonald 2002).

**NOTES:****Summary Points and the Role of the CMAG**

Medications are an integral part of the treatment for many acute and chronic diseases. Patients must remain adherent to their medication regimen in order to realize the full benefits of these therapies. Unfortunately, patients for a number of reasons frequently do not remain adherent to their medications.

- Nonadherence to medications is a common factor that prevents patients from achieving the full therapeutic benefit of their therapies. Studies have shown that adherence for most chronic therapies falls to less than 50% within the first year of treatment.
- Nonadherence is associated with significant morbidity and contributes to premature death in patients that fail to appropriately take their medications.
- Nonadherence increases the incidence of hospitalizations for many common chronic conditions.
- Nonadherence to medications increases total medical costs by increasing the number of hospitalizations and other interventions.

CMAG provides a comprehensive approach to addressing issues relating to adherence to chronic therapies. The guidelines focus on two key areas required for adherence, motivation and knowledge. The following chapters will provide tools to assess both motivation and knowledge and when necessary suggest tools for improving these key areas. The CMAG tracker is an electronic on-line version of the guidelines that can not only assist case managers in evaluating adherence but will also provide a tool for recording interventions and tracking outcomes.





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# Case Management Adherence Guidelines





# CHAPTER 2:

## CASE MANAGEMENT ADHERENCE GUIDELINES

**In this Chapter we will review the following:**

- ✓ Understand the CMAG Adherence Management Algorithm.
- ✓ Identify the Tools Used in CMAG Patient Assessments.
- ✓ Evaluate the Frequency of CMAG Patient Assessments.
- ✓ General guidelines For Interactions with Patients.



## CHAPTER 2: CASE MANAGEMENT ADHERENCE GUIDELINES

It is well known that an individual's knowledge, motivation, and attitudes toward drug therapy can significantly influence medication adherence. Recently, the WHO published a foundational model for medication adherence that is based on patient information, motivation, and behavior skill needs (WHO, 2002).

CMAG were developed from concepts presented by WHO to aid in the assessment, planning, facilitation, and advocacy of patient adherence. As such, the guidelines provide an interaction and management algorithm to assess and improve the patient's knowledge and his or her motivation to take medications as they are prescribed. The guidelines provide great flexibility in that individual patient needs can be taken into account.

### ADHERENCE FACT:

***“12 percent of Americans don't take medication at all after they buy the prescription.”***

CMAG (and associated tools) are designed to identify patient motivation and knowledge deficiencies that may be barriers to medication adherence. As potential deficiencies are identified, the guidelines will sug-

gest tools and interaction techniques that can minimize or remove barriers and improve medication adherence.

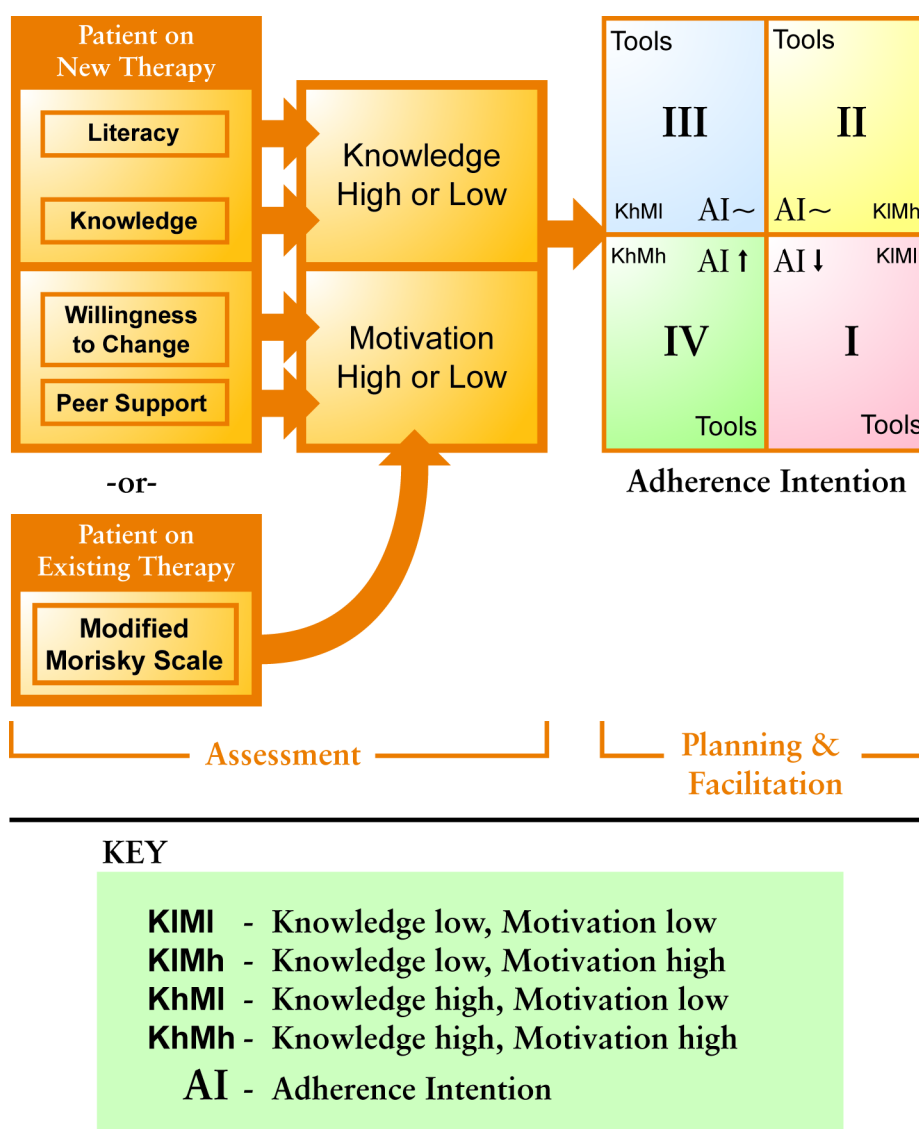
The ultimate goal of CMAG is to create an environment of structured interaction, based on patient-specific needs that will result in a high degree of knowledge and patient self-motivation to take medication appropriately. Although CMAG applies specifically to medications, the concepts and tools incorporated into the guidelines may be readily adopted to any situation where patient adherence to a therapeutic plan (e.g., exercise, weight reduction, smoking cessation, psychological therapy) is necessary to achieve therapeutic goals.

Figure 4 depicts the CMAG medication adherence algorithm. The model consists of 4 distinct quadrants of patient management that are based on the patient's health knowledge level (high or low) and present motivation status (high or low). Through periodic assessments (see below), patient interaction, and use of recommended adherence improvement tools, the goal is to maintain patients in quadrant IV (high knowledge/high motivation), with a high degree of adherence to all prescribed therapies.

### ADHERENCE-FACT:

**10 percent** of all hospital admissions are the result of patients failing to take prescription medications correctly.

### NOTES:



**Figure 4. CMAG adherence management algorithm.**

Through the use of several tools (described in detail in later chapters), it is possible to assess the patient's level of both knowledge and motivation relative to existing and newly introduced therapies. After assessments of the patient's knowledge and motivation levels are completed, the patient can be placed in 1 of the 4 "adherence intention" quadrants. Then an appropriate plan can be developed that draws upon a number of tools and techniques for patient interaction with the objective of continually moving a patient toward quadrant IV (high knowledge/high motivation). Once the patient reaches quadrant IV, the guidelines are designed to provide ongoing behavior reinforcement that will help sustain adherence to therapy.



As the patient's disease, living circumstances, therapies, and other adherence-related factors change, variability can be expected in both knowledge and motivation. Consequently, movement between quadrants can occur. CMAG can be used as often or as infrequently as the practitioner deems necessary to reassess the need for different approaches to improve or sustain adherent behaviors.

**NOTES:**

CMAG were developed to incorporate adherence into the regular case-management workflow. For patients new to a therapy or new to the case manager, knowledge and motivation can be assessed by executing the health literacy, knowledge, willingness to change, and social support tools. For patients who are already managed on an existing therapeutic regimen, the Modified Morisky Scale (MMS) may be used for quickly determining placement in the adherence intention quadrants for purposes of developing and instituting an adherence improvement plan. All of the tools (Table 2) used to perform a CMAG assessment are described in detail in the following chapters. Photocopy masters of each tool are included at the end of the associated chapter and in Appendix 2. All tools can also be downloaded from the CMAG web site at **[www.CMAGtracker.org](http://www.CMAGtracker.org)**.

Health Literacy	Rapid Estimate of Adult Literacy in Medicine (REALM-R) (Chapter 3)
Knowledge	Medication Knowledge Survey (Chapter 4)
Willingness to Change	Readiness Ruler (Chapter 5)
Social Support	Duke-UNC Functional Social Support Questionnaire (FSSQ) (Chapter 6)
Adherence Assessment (existing therapies)	Modified Morisky Scale (MMS) (Chapter 7)

**Table 2. Tools Used in CMAG Patient Assessments.**

After a patient's knowledge and motivation levels have been assessed, a CMAG Patient Assessment Summary Form (Appendix 2) is completed. The summary assessment form allows the case manager to determine an adherence intention quadrant appropriate to the patient's current level of knowledge and motivation.

CMAG also provides guidance for the application of a number of tools and interaction techniques specific to each adherence intention quadrant. Because many disease states and patient types (e.g., HIV, schizophrenia) may require modification of adherence improvement strategies, an entire chapter of the CMAG has been devoted to that subject. Chapter 8 provides the case manager with specific adherence plan recommendations for many patient types who may benefit from modified adherence improvement interactions.

### Frequency of CMAG Patient Assessments

The frequency at which CMAG assessments are performed will vary by patient. Recommendations for the minimum number of CMAG assessments are as follows:

- **All patients** - Full CMAG assessment annually, followed by determination of an adherence intention quadrant and development/implementation of an adherence improvement plan.
- **Patients new to the case manager** - Full CMAG assessment, followed by determination of an adherence intention quadrant and development/implementation of an adherence improvement plan.
- **Patients with a new diagnosis that results in new medication therapies and a CMAG assessment within the past year** - Medication Knowledge Survey for new medications *and* Readiness Ruler applied in context of behavior changes required to adequately self-manage the new disease state. Results from the most recent REALM-R and FSSQ may be used to complete the assessment, if available. Based on the results, a new adherence intention quadrant may be assigned, followed by development and implementation of a modified adherence improvement plan.

- **Patients maintained on existing therapies *and* receiving a CMAG assessment within the past year** - MMS at month 4 and month 8 post-assessment. Based on the results, a new adherence intention quadrant may be assigned, followed by development/implementation of a modified adherence improvement plan.
- **Patients with significant living circumstance changes that may adversely affect ability to self-manage disease** - Full CMAG assessment, followed by determination of an adherence intention quadrant and development/implementation of a modified adherence improvement plan. Examples of changes in living circumstances would include situations such as:
  - Death of a spouse, close family member, or other persons significant to the patient's social support network
  - Physical relocation to a new home
  - Change in finances that may be perceived to adversely impact the patient's ability to live life as desired.
  - Change in mental status (emerging depression, senility, etc.)
  - Physical relocation of person significant to the patient's social support network
  - Reduced ability to participate in activities and freedom of movement from which the patient derives enjoyment (driving, sewing, painting, hobbies, etc.)

CMAG are not intended to be "static." Case managers have the opportunity to participate in a Web-based Adherence Encounter Documentation Program (Appendix 5). This program is designed to capture information on adherence strategies and techniques employed by individual case managers for each adherence intention quadrant, and track improvements in patient adherence and outcomes. Through a continual analysis of information entered into the Adherence Encounter Documentation Program, evidence-based modifications will be made to future versions of CMAG.

#### **ADHERENCE-FACT:**

**23 percent** of all nursing home admissions are due to patients failing to take prescription medications accurately.

#### **NOTES:**

Listed below are the general guidelines for interaction based on patient placement in any given quadrant of the CMAG algorithm.

Adherence Intention Quadrant	Recommended Tools and Interaction
<p><b>Quadrant 1</b> Knowledge low - Motivation low</p> <p>Adherence intention is LOW</p>	<p><b>a.</b> Motivational interviewing. (*)</p> <p><b>b.</b> Disease-specific education and consequences of nonadherence. ( ▲ )</p> <p><b>c.</b> Medication regimen education.</p> <ul style="list-style-type: none"> <li>● Why medication is needed.</li> <li>● Dosage schedule and fit with patient's schedule/lifestyle.</li> <li>● What to do if doses are missed or delayed.</li> <li>● Common adverse effects that might occur. (◆)</li> <li>● Serious adverse effects that should be watched for. (◆)</li> </ul> <p><b>d.</b> "Teach back" - ask patient to repeat instructions.</p> <p><b>e.</b> Disease and medication education for spouse/family. (◆)</p>
Adherence Intention Quadrant	Recommended Tools and Interaction
<p><b>Quadrant 2</b> Knowledge low - Motivation high</p> <p>Adherence intention is VARIABLE</p>	<p><b>a.</b> Motivational support.</p> <p><b>b.</b> Reinforce/praise patient's efforts to adhere to prescribed therapies.</p> <p><b>c.</b> Disease-specific education and potential consequences of nonadherence. ( ▲ )</p> <p><b>d.</b> Reinforce medication regimen education.</p> <ul style="list-style-type: none"> <li>● Why medication is needed.</li> <li>● Dosage schedule and fit with patient's schedule/lifestyle.</li> <li>● What to do if doses are missed or delayed.</li> <li>● Common adverse effects that might occur. (◆)</li> <li>● Serious adverse effects that should be watched for. (◆)</li> </ul> <p><b>e.</b> Discussion on action to take BEFORE supplies of the present prescription run out.</p> <p><b>f.</b> "Teach back" - ask patient to repeat instructions.</p> <p><b>g.</b> Disease and medication education for spouse/family. (◆)</p>

Adherence Intention Quadrant	Recommended Tools and Interaction
<b>Quadrant 3</b> Knowledge high - Motivation low  Adherence intention is VARIABLE	<b>a.</b> Motivational interviewing. (★) <b>b.</b> Patient reminder systems. (Appendix 3) <b>c.</b> Social support plan. <b>d.</b> Family motivational assessment.
Adherence Intention Quadrant	Recommended Tools and Interaction
<b>Quadrant 4</b> Knowledge high - Motivation high  Adherence intention is HIGH	<b>a.</b> Continued knowledge and motivation reinforcement/support. <b>b.</b> Open-ended discussions to uncover any emerging concerns the patient may have about therapy or anticipated life-situation changes that may adversely impact ability to adhere to specific therapeutic plans.

\* In patients with low motivation and low knowledge, motivational interviewing should always be the first step in the adherence improvement process. This will allow the case manager to establish a level of rapport with the patient as well as an understanding of his or her motivational needs before any attempts are made to engage in knowledge improvement activities that may not yet be welcomed by the patient.

▲ If motivational interviewing and the Readiness Ruler reveal that the patient is not ready to change behaviors or is apathetic about his or her disease, discussions on the consequences of nonadherence should be deferred until a later date so as not to disturb rapport building.

◆ Information on adverse effects should always be tempered with a discussion of the benefits of prescribed regimens, so that the patient receives a "balanced" presentation of the risks and benefits of any prescribed therapy. Discussions of adverse effects should include expected duration of transient side effects and actions to be taken by the patient for unanticipated side effects that do not resolve in a timely manner.

❖ For newly diagnosed patients, one may consider an assessment of the family's acceptance of the patient's disease state and their willingness to change prior to engaging in disease and medication education.

★ The patient with a high disease and medication knowledge level combined with a low motivation level provides an additional challenge to the case manager in developing an effective adherence improvement strategy. There is often an attempt to "convince" these patients of a needed course of action, owing to the high level of knowledge required.

**NOTES:**

Such plans of action can easily alienate the patient from any suggestions for adherence improvement. A better initial strategy is to spend additional time with the patient participating in motivational interviewing to develop a rapport that will ultimately open him or her to new ideas and suggestions for improving self-management of disease. It is also vitally important that the case manager be honest and open regarding the intended goal of motivational interviewing (improvement of self-management), so that the high-knowledge patient does not feel "coerced" in the process, with consequent rejection of the plans and ideas offered to improve adherence.

# CMAG Patient Assessment Summary Form

Patient Name: \_\_\_\_\_

Date of Assessment: \_\_\_\_\_ Age: \_\_\_\_\_

## KNOWLEDGE ASSESSMENT:

Realm-R Score: \_\_\_\_\_ Low ( $\leq 6$  correct) High ( $>6$  Correct)

Medication Knowledge Survey:                      LOW                      HIGH (potential modifier to REALM-R)

OVERALL KNOWLEDGE ASSESSMENT:    LOW                      HIGH

## Motivation Assessment: Readiness Ruler



**Not Prepared  
to Change**

**Already  
Changing**

FSSQ (Average): \_\_\_\_\_ (mean = 3.0) (potential modifier to Readiness Ruler)

OVERALL MOTIVATION ASSESSMENT:    LOW                      HIGH

## Modified Morisky Scale

Knowledge Domain Score (questions 3,4,& 5):                      LOW                      HIGH

Motivational Domain Score (questions 1,2,& 6):                      LOW                      HIGH

Possible Modifiers: \_\_\_\_\_

CMAG Placement (circle one):

Quadrant 1    Quadrant 2    Quadrant 3    Quadrant 4

KNOWLEDGE PLAN/TOOLS: \_\_\_\_\_

MOTIVATION PLAN/TOOLS: \_\_\_\_\_

Follow-Up Date: \_\_\_\_\_



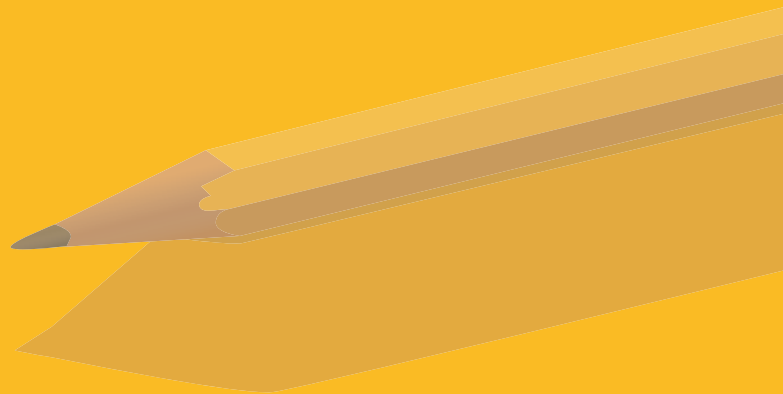




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3

Health Literacy





# CHAPTER 3: HEALTH LITERACY

**In this Chapter we will review the following:**

- ✓ Define Health Literacy.
- ✓ Describe the use of the REALM-R to assess Health Literacy.



## CHAPTER 3: HEALTH LITERACY

Active patient cooperation is essential to the success of most medical treatments. Patients have become the health provider's most important allies in the delivery of quality care. Today, patients are responsible for adhering to medication administration, for changing their daily routines in diet and exercise, and for other actions to prevent and control chronic diseases. Understanding instruction is the first step in improving medication adherence.

**Health literacy is defined as the ability to read, understand, and act on health information.**

Poor health literacy results in medication errors, impaired ability to remember and follow treatment recommendations, and reduced ability to navigate within the healthcare system. Additionally, poor health literacy puts patients at an increased risk for hospitalization compared with patients who have adequate health literacy (Bass, 2003).

### Assessment of Health Literacy - the REALM-R (Bass, 2003)

The Rapid Estimate of Adult Literacy in Medicine Revised (REALM-R) is a brief screening instrument used to assess an adult patient's ability to read common medical words. It is designed to assist medical professionals in identifying patients at risk for poor literacy skills. The REALM-R is a word recognition test consisting of 8 items. Words that appear in this tool are:

<b>Fat</b>	<b>Anemia</b>
<b>Flu</b>	<b>Fatigue</b>
<b>Pill</b>	<b>Directed</b>
<b>Osteoporosis</b>	<b>Colitis</b>
<b>Allergic</b>	<b>Constipation</b>
<b>Jaundice</b>	

*Fat*, *Flu*, and *Pill* are not scored and are positioned at the beginning of the REALM-R to decrease test anxiety and enhance patient confidence. The following steps describe the approach that can be utilized to execute the test:

1. The case manager should give the patient the list of REALM-R words.
2. In the case manager's own words, introduce the REALM-R to the patient. **Note that the words "read" and "test" should be avoided when introducing and administering the REALM-R to the patient.** These words may make the patient feel uncomfortable and unwilling to participate. The following can be

### ADHERENCE-FACT:

At any given time, regardless of age group, up to 59 percent of those on five or more medications are taking them improperly.

Low Health Literacy costs the Healthcare system as much as \$58 Billion a year.

### NOTES:

utilized to introduce the REALM-R:

*"Sometimes in healthcare we may use medical words that patients aren't familiar with. We would like you to take a look at this list of words to help us get an idea of what medical words you are familiar with. It will help us know what kinds of patient education to give you. Starting with the first word [point to 1st word with pencil], please say all of the words you know. If you come to a word you don't know, you can sound it out or just skip it and go on."*

3. If a patient takes more than 5 seconds on a word, they should be encouraged to move on to the next word (eg, say "Let's try the next word"). If the patient begins to miss every word or appears to be struggling or frustrated, tell the patient, *"Just look down the list and say the words you know."*
4. Scoring: The REALM-R Examiner Record (Appendix 2) is used to record the outcome of the test. Count as an error any word that is not attempted or is mispronounced. Place a check mark ("✓") next to each word the patient pronounces correctly and an "X" next to each word the patient does not attempt or mispronounces. Those patients scoring 6 or less correctly ("✓") should be considered to be at risk for health literacy issues.
5. Telephonically administered REALM-R: If it becomes necessary to administer the REALM-R remotely by telephone, the following procedure should be employed.
  - a. Ask the patient to obtain a piece of paper and pencil.
  - b. Explain the purpose of the REALM-R to the patient as described in step 2.
  - c. *Slowly* spell each word and ask the patient to write it down on the piece of paper.
  - d. Ask the patient to pronounce the word.
  - e. Proceed with the next word and continue until the examination is complete. Score the REALM-R and record the result on the Patient Assessment Summary Form (Appendix 2).

**ADHERENCE FACT:**

***"Approximately 40 to 44 Million adults in the US are functionally illiterate."***

**Special considerations when using the REALM-R**

**1. Examiner Sensitivity**

Many low-literacy patients will attempt to hide their deficiency. Ensure that you approach each patient with respect and compassion. You may need to provide encouragement and reassurance. A positive, respectful attitude is essential for all examiners. (Remember, many people with low literacy feel ashamed.) Be sensitive.

## 2. **Visual Acuity**

If the patient wears glasses, ask him or her to put them on for this test. The REALM-R is designed to be read by persons with 20/100 vision or better. The patient word list should be set in a font size of 18. In the studies utilizing the REALM-R, patients with worse vision were excluded. The REALM (long version of the REALM-R) has a visually impaired version using a font size of 28.

The REALM-R is produced here in font size 18 and can be found in Appendix 2.

## 3. **Pronunciation**

Dictionary pronunciation is the scoring standard.

## 4. **Dialect, Accent, or Articulation Problems**

Count a word as correct if it is pronounced correctly and no additions or deletions have been made to the beginning or ending of the word. For example, a patient who says "jaundiced" would not receive credit for the word "jaundice"; "directs" would not receive credit for the word "directed"; "colon" would not receive credit for "colitis." Words pronounced with a dialect or accent should be counted as correct, provided there are no additions or deletions to the word. Particular attention should be paid to patients who use English as a second language.

## 5. **Patients that are unable to read English**

Patients whose primary language is not English represent an additional challenge when assessing health literacy. The REALM-R should not be simply translated into other languages in which it has not been validated. There are alternative tests that can be utilized for patients that read Spanish. Two validated tests that can be rapidly administered to Hispanic patients are the Short Assessment of Health Literacy of Spanish Adults (SAHLSA) (Lee, 2004) and the Third Vital Sign (Weiss, 2005).

Once you have assessed if a patient is at risk for health literacy issues keep the following in mind.

### **What can I do to help my patients with low health literacy?**

Awareness is the first step to addressing this pervasive problem. Keep

#### **ADHERENCE-FACT:**

"Literacy skills are the strongest predictor of an individual's health status."

#### **NOTES:**

**NOTES:**

in mind that as many as half of your patients may be affected by low health literacy. (adapted from the American Medical Association: Low health literacy: A serious issue for physicians and patients.)

Here are 5 simple steps you can take to help your patients with low health literacy:

**1. Help patients avoid feeling ashamed**

Encourage your patients to ask questions. Offer to help them with paperwork. Reassure them that many people have difficulty understanding healthcare information and that you can help.

**2. Use simple language**

Speak slowly and cover only two or three concepts at a time. Read written material aloud to your patient and underline key points. Studies have shown that even people who are college educated and can understand complicated words prefer to have medical information stated simply.

Use Pictograms for patients with low-literacy (Dowse, 2001). Graphics and other visual devices are often used to replace or supplement text in health information communications. Patient educators may use pictograms as part of patient education handouts, or as stickers. Pictograms are thought to be particularly useful for communicating information to consumers who speak English as a second language and to those with lower reading abilities. (Institute of Medicine. Health Literacy: A Prescription to End Confusion)

**3. Use the teach-back method**

Simply asking a patient if he/she understands is not enough. Instead, ask them to paraphrase what they will do and how they will do it when they are at home.

**4. Suggest bringing a friend or relative**

Ask patients if they would like a friend or relative to join them during the counseling and planning portion of the appointment.

**5. Talk with your staff**

Schedule an in-service with your staff to discuss low health literacy and to ensure that everyone is working together to be on the lookout for the problem.



Additional information on dealing with patients with low health literacy can be found in Chapter 8: "Factors that Influence Adherence to Pharmacotherapy and Interventions for Special Patient Populations".

**NOTES:****Web Resources:**

1. <http://www.amafoundation.org/go/healthliteracy>  
Accessed 12/28/2005.
2. <http://www.clearhealthcommunication.com>  
Accessed 12/28/2005.
3. [http://www.pfizerhealthliteracy.com/pdfs/Pfizers\\_Principles\\_for\\_Clear\\_Health\\_Communication.pdf](http://www.pfizerhealthliteracy.com/pdfs/Pfizers_Principles_for_Clear_Health_Communication.pdf)  
Accessed 12/28/2005.
4. <http://nces.ed.gov/naal>  
Accessed 12/30/2005.

# REALM-R Examiner Record

Fat

Flu

Pill

Allergic \_\_\_\_\_

Jaundice \_\_\_\_\_

Anemia \_\_\_\_\_

Fatigue \_\_\_\_\_

Directed \_\_\_\_\_

Colitis \_\_\_\_\_

Constipation \_\_\_\_\_

Osteoporosis\_\_\_\_\_

Fat, Flu, and Pill are not scored. We have previously used a score of 6 correct or less to identify patients at risk for poor literacy.

## Word List

Fat

Fatigue

Flu

Directed

Pill

Colitis

Allergic

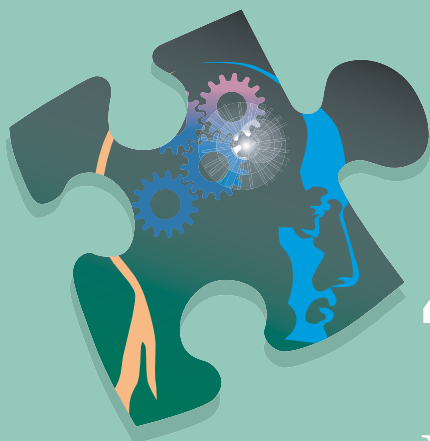
Constipation

Jaundice

Osteoporosis

Anemia





CMAG

4

Medication Knowledge





# CHAPTER 4:

## MEDICATION KNOWLEDGE

In this Chapter we will review the following:

- ✓ Understand the Medication Knowledge Survey.
- ✓ Importance of the patient or caregiver to have all medication with them.
- ✓ Scoring of the Medication Knowledge Survey.





## CHAPTER 4: MEDICATION KNOWLEDGE

In addition to the REALM-R, the Medication Knowledge Survey (Appendix 2) is used to assess the patient's knowledge and ability to read and comprehend information necessary for appropriate medication use. The Medication Knowledge Survey is considered as a potential "modifier" of the final assignment of a patient to a high or low knowledge category. A patient who scores highly on the REALM-R may not necessarily understand vital information for appropriate medication use. Thus, a low score on the Medication Knowledge Survey combined with a high health literacy score would likely result in the case manager placing the patient in the low knowledge category when constructing an adherence improvement program.

**On the day that the Medication Knowledge Survey is to be conducted, patients should be asked to have all of their medication bottles readily available in one place for purposes of discussion.** The case manager should also review any prior documentation of the patient's current medication regimens before conducting the medica-



tion survey. This may reveal any "oversights" on the patient's part, as well as streamline the entire survey process. Sources of documentation may include the physician's records and/or claims, and medication payment information available through the patient's healthcare provider.

Before beginning the Medication Knowledge Survey, the case manager may wish to sort medications into 2 categories - "routine use" and "as needed" (prn) medications. Although it is important to uncover any potential overuse of prn medications, agents typically falling into this category are of lesser concern when performing a medication knowledge assessment. Also, some patients take so many medications that the depth of medication knowledge often becomes readily apparent by limiting the survey to "routine use" medications.

Additionally, before beginning the Medication Knowledge Survey, **it is important for the case manager to ascertain that he or she is speaking to the person who takes (or will take) responsibility for the patient's medication administration and management.**

### **ADHERENCE-FACT:**

More than half of all Americans with chronic diseases don't follow their physician's medication and lifestyle guidance.

### **NOTES:**

**NOTES:**

Referring to the Medication Knowledge Survey form (Appendix 2) and each container of medication, ask the patient the following questions about every one of their medications:

- a. Name of the medication? (Can the patient read the label? Note: Incorrect pronunciation is not considered a failure on the patient's part to identify medication.)
- b. Why is the medication being taken? (for what disease or condition?)
- c. How much medication (number of pills) are to be taken each time?
- d. When is the medication to be taken? (morning, before meals, twice a day, etc.)
- e. What effects should the patient be looking for ? (both positive and negative)
- f. Where is the medication kept? (to ascertain special storage conditions needed)
- g. When is the next refill due? (and plan or methods for obtaining refills of the medication)

As the question-and-answer session with the patient or caregiver progresses, list the medications being reviewed in the left-hand column of the Medication Knowledge Survey form. Place check marks in the boxes relative to each question when the patient adequately responds.

The mathematical scoring for the Medication Knowledge Survey is the ratio of total checked questions to total possible questions on a 0-8 scale. There are a total of 8 answers for each medication. For example if your patient was receiving 3 medications there could be a total of 24 correct responses ( $8 \times 3 = 24$ ). The score for the Medication Knowledge Survey is calculated by dividing the total number of correct responses (let's say 12) by the total possible responses (24). The overall Medication Knowledge Survey score would be 50% or 4 of 8.

A Medication Knowledge Survey score of  $<5$  of 8 is typically classified as low medication knowledge. A score of  $\geq 5$  is classified as high medication knowledge. It is important to keep this mathematical score in perspective with your impression of the patient's knowledge as you discuss their medication.

For those areas where the patient does not have knowledge about their medication, you may want to spend more time discussing these aspects of their care. You should initially focus on How much to take and When to Take each medication. As a general rule, if all but one box for each medication can be checked as the patient successfully reads and reports to you, the patient appears to be relatively knowledgeable about their medication. If only one or two boxes can be checked as successful, the patient has limited knowledge about their medication.

The questions are designed to provide insight regarding the patient's medication knowledge level, and ability to read and comprehend medication information. In the process of completing the Medication Knowledge Survey, gaps in medication knowledge across multiple medications (e.g., how often to take) will become readily apparent and can serve as the basis for a focused CMAG knowledge improvement plan.

## Medicine Knowledge Survey -Assessment Form

Check all boxes patients can successfully read and fill in the information they provide to you about each of their medications.

Medication	Name of Medication	Why are you taking the medication	How much to take each time?	When to take the medication?	Effects to look out for P                      N	Where do you keep the medication?	When is the next refill? Record date.

P = Positive effects of taking medication, N = Negative effects of taking medication

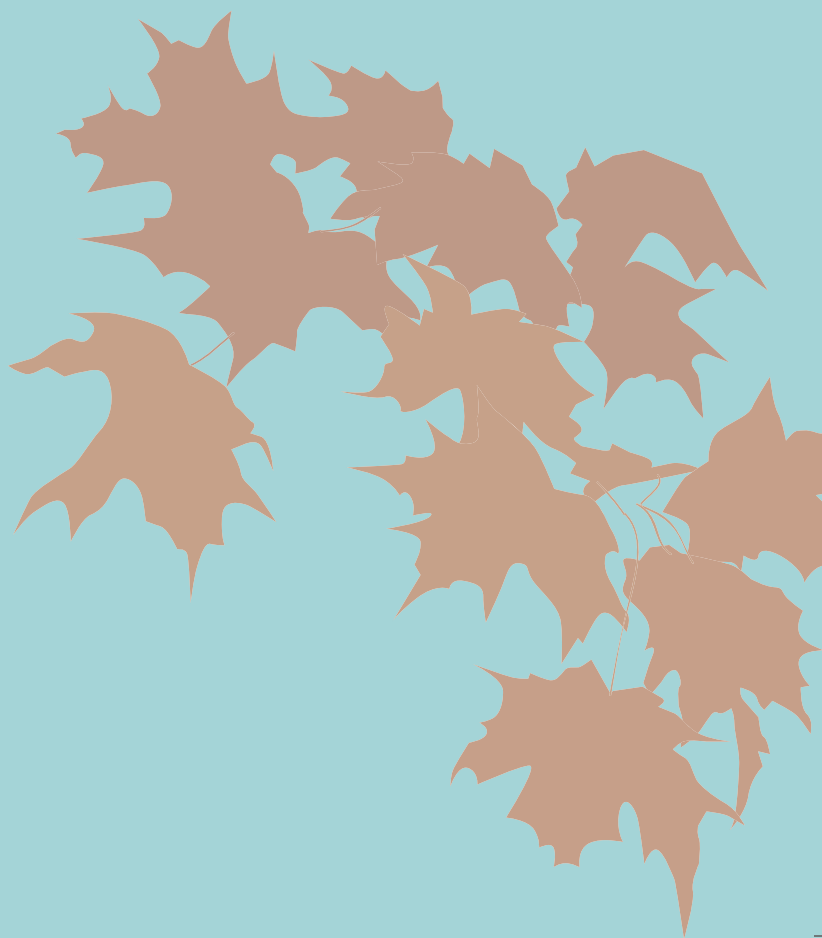




CMAG

5

Willingness to Change








# CHAPTER 5:

## WILLINGNESS TO CHANGE

**In this Chapter we will review the following:**

-  The Concept of Willingness to Change.
-  The Stages of Change.
-  The Use of the Readiness-to-Change Ruler.





## CHAPTER 5: WILLINGNESS TO CHANGE

Very often, the case manager is faced with a dilemma. The patient knows that a change in lifestyle or habits is needed to improve health, but is unwilling to do so. Smoking is a prime example. All of the convincing arguments that the case manager can provide regarding the benefits of not smoking will be in vain if the patient is not willing or ready to change (motivation). The same is true of medication-taking behavior.

Some research suggests that traditional biomedical information-based efforts to convince patients to lead healthier lifestyles may do more harm than good. Typically less than 20% of patients are ready to take action and too many interventions are action oriented (Prochaska 1998). If the patient is not willing or ready to change a specific behavior,



arguments to change that behavior may damage rapport between the patient and the case manager. The unintended consequence can often be psychological reinforcement for continuing the behavior in the patient's mind. When talking about change, if the patient's responses mostly begin with words such as "Yes...but..." followed by reasons for not changing, this is a sign that the patient is probably not yet ready or willing to change his or her behavior.

When patients contemplate change, it typically happens in a sequence that ranges from not thinking about change at all (ambivalence or precontemplation), to consideration of the pros and cons of making a change, ultimately making small steps to "test the waters" regarding a change, and finally the actual change, where it becomes a sustainable part of the patient's life. Sometimes, patients need to "relapse" or "fall off the wagon" several times before completely committing to and adopting a lifestyle change. It is important for the case manager to be able to identify where the patient is on the stages of change continuum at any given point in time to appropriately match an adherence improvement plan to the patient's willingness to adopt that plan (Figure 5) (DiClemente, 1998).

The case manager must also recognize that the decision by a patient to change behavior can happen at any time. Change often happens for reasons that are not always clearly understood by anyone but the patient. In addition, a patient's level of readiness may vary depending on the identified behavior change. For example, a patient may be very ready to start exercising, but is not at all ready to stop smoking. When assessing

### ADHERENCE-SUGGESTION:

Readiness to change is assessed based on a specific behavior.

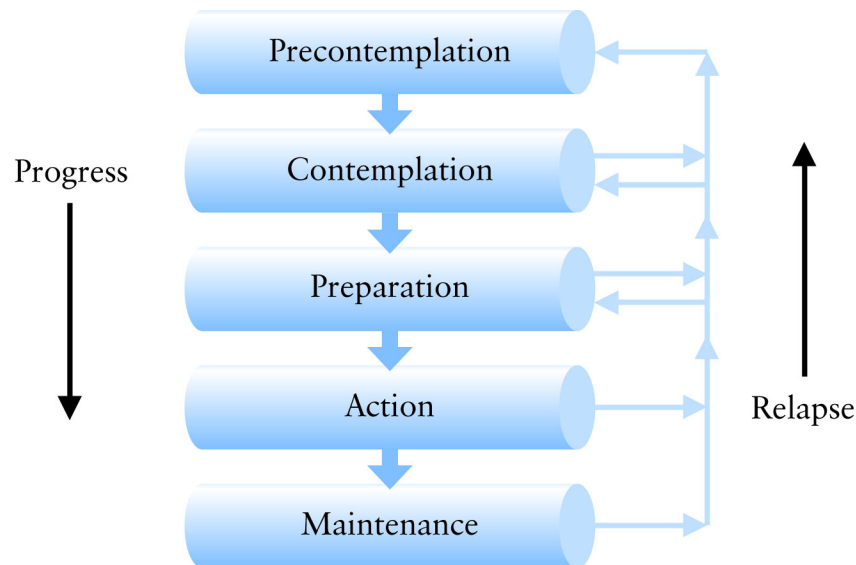
### NOTES:

**ADHERENCE-  
SUGGESTION:**

How do you really  
feel about \_\_\_\_\_?  
How ready to  
change are you?

**NOTES:**

readiness and developing patient care plans, it is very important to bear this in mind. A primary goal of the case manager in constructing an effective adherence improvement plan lies in recognizing where a patient is on a continuum of readiness to make a specific change in behavior.



**Figure 5. The Stages of Change Continuum (DiClemente, 1998).**

Knowledge of willingness to change helps the case manager to determine if an adherence improvement plan needs to be focused on motivation issues to help prepare the patient for change, or on concrete steps to achieve actual changes in behavior.

### **The Readiness-to-Change Ruler (Zimmerman, 2000)**

Many times, behavioral change is necessary for successful management of long-term illness, and relapse can often be attributed to lapses in healthy behavior by the patient. Motivation is a key component in the process of change. The assessment of a patient's willingness to change can help providers gauge the likelihood that the patient will adopt and adhere to a given therapy. Readiness to change is not an all-or-nothing phenomenon; it is a matter of degree. It varies between individuals and within them over time. Readiness can fluctuate between and within consultation.

The readiness-to-change ruler (or Readiness Ruler) is a quick and effective tool that can assist a provider in assessing a patient's "willingness or readiness to change." It is a useful tool for eliciting change talk from your patients. The Ruler is a simple, straight line drawn on a paper that represents a continuum from the left "not prepared to change" to the right "already changing." Patients are asked to mark on the line their current position in the change process for the specific behavior. Providers should then question patients about why they did not place the mark further to

the left (which helps to determine what motivates their behavior) and what it would take to move the line further to the right (which helps to determine their perceived barriers). Providers can ask patients for suggestions about ways to overcome an identified barrier and actions that might be taken before the next visit. A sample Readiness Ruler is located at the end of this chapter as well as in Appendix 2. Suggestions for follow up questions are on the backside of the Readiness Ruler tool in Appendix 2. Steps for using the Readiness Ruler in a phone conversation are also included in Appendix 2.

Two concepts that are useful to assess when determining readiness are importance and confidence. Importance, or why should I change, is an indication of whether the change is worthwhile. Confidence, or how will I do it, is an indication of whether the individual can achieve it. These can be assessed very informally or by using a scale technique similar to the Readiness Ruler. This assessment can give you very quick feedback on how an individual feels about a particular change especially if someone's readiness is low. Based on how they respond, a case manager can determine which issue is impacting the patient's readiness. From there, strategies can be used to either explore importance or build confidence.



### The Readiness Ruler and Motivational Interviewing

In CMAG, the Readiness Ruler can perform 2 functions. In its simplest form, this tool can be used as a quick assessment of a patient's present motivational state relative to changing a specific behavior. In addition, information gained from the Readiness Ruler can be used as a springboard to employing the technique of motivational interviewing to elicit behavioral change (See Chapter 10).

Often when using the Readiness Ruler to assess a patient's willingness to change, it will become readily apparent that immediate use of motivational interviewing techniques will provide value in moving a patient toward change. When such situations arise, the case manager should give priority to motivational interviewing before completing other assessments that may be required (Medication Knowledge Survey, REALM-R, FSSQ) to determine an adherence intention quadrant.

#### **ADHERENCE- SUGGESTION:**

People differ quite a lot in how ready they are to change their \_\_\_\_\_. What about you?

#### **NOTES:**

The Readiness Ruler is a valuable tool that can be used with patients other than those who are contemplating change relative to improved medication adherence. It is also useful when resistance is encountered in a patient. It has applicability to a wide range of lifestyle behavior changes such as smoking and alcohol cessation, weight loss, exercise, etc.

### Readiness Ruler

Below, mark where you are now on this line that measures your change in \_\_\_\_\_.

Are you not prepared to change, already changing, or somewhere in the middle?





CMAG

6

Social Support





# CHAPTER 6:

## SOCIAL SUPPORT

**In this Chapter we will review the following:**



The importance of a Social Support Network.



The use of the Duke UNC Functional Social Support Questionnaire.







## CHAPTER 6: SOCIAL SUPPORT

Patients who are ready to make behavioral changes that result in improved adherence to therapeutic regimens can often benefit from family or social support networks. In situations where a patient is about to make a significant change in behavior, the presence of a viable social support network (such as family) can mean the difference between success and failure.

Consequently, an assessment of a patient's perception of, and need for, a social support network can be as important as making an assessment of the patient's readiness to change when determining level of motivation. If the patient has a history of depending upon others for assistance with self-care, this may be especially true.

### ADHERENCE FACT:

***“Two-thirds of all Americans fail to take any or all of their prescription medicines.”***

The Duke-UNC Functional Social Support Questionnaire (FSSQ) (Broadhead, 1988) will allow you to make a quick assessment of the patient's social support network and determine if this should be considered a "modifier" to findings of the Readiness Ruler for any planned or desired behavior change.

The FSSQ is an 8-question form that asks about the patient's perceived level of confidence in affective support. When summaries of the affective and confident domains are combined into one average score, the tool can provide a good indication as to the patient's level of social support. A sample FSSQ is located at the end of the chapter and in Appendix 2.

Each question on the FSSQ is scored on a 1 to 5 scale, with 3.0 being an average score. A sample question on the FSQQ is:

**I have people who care what happens to me....**

### ADHERENCE-SUGGESTION:

"Teach back" - Have patients repeat information as they would tell it to a friend.

### NOTES:

**ADHERENCE-  
SUGGESTION:**

Utilize Medication Assistance Programs for appropriate patients.  
[www.helpingpatients.org](http://www.helpingpatients.org)

**NOTES:**

The patient is asked to read each statement on the FSSQ and supply a check mark next to the response that best matches his or her feelings about the question. Possible responses and their corresponding scores are:

Response	Score
As much as I would like	5
Almost as much as I would like	4
Some, but would like more	3
Less than I would like	2
Much less than I would like	1

All questions on the FSSQ must be answered before scoring. If the patient skips a question, it will need to be answered to complete the scoring process. To score the FSSQ in its entirety, simply add up the numeric score that corresponds with the patient's response to each question and divide by 8 to generate an average score. The patient is perceived to have greater social support as the number increases.

# Duke-UNC Functional Social Support Questionnaire (FSSQ)

Here is a list of some things that other people do for us or give us that may be helpful or supportive. Please read each statement carefully and place an 'X' in the column that is closest to your situation. Give only 1 answer per row.

	5.	4.	3.	2.	1.
	As much as I would like	Almost as much as I would like	Some, but would like more	Less than I would like	Much less than I would like
1. I have people who care what happens to me.					
2. I get love and affection.					
3. I get chances to talk to someone about problems at work or with my housework.					
4. I get chances to talk to someone I trust about my personal or family problems.					

	5.	4.	3.	2.	1.
	As much as I would like	Almost as much as I would like	Some, but would like more	Less than I would like	Much less than I would like
5. I get chances to talk about money matters.					
6. I get invitations to go out and do things with other people					
7. I get useful advice about important things in life.					
8. I get help when I am sick in bed.					

Overall Average: \_\_\_\_\_

## FSSQ Scoring Instructions

1. All questions must be completed to score the FSSQ.
2. Add the numeric scores for all 8 questions.
3. Divide the total score by 8 to achieve an average score.

### Scoring:

As social support increases, the score should increase.



CMAG

7

Modified Morisky Scale





# CHAPTER 7:

## MODIFIED MORISKY SCALE

**In this Chapter we will review the following:**



A description of the Morisky Scale.



Understand the difference between the Morisky Scale and the Modified Morisky Scale.



Understand when to use and how to score the Modified Morisky Scale.







CHAPTER 7: MODIFIED MORISKY SCALE

In the mid-1980s, Morisky and colleagues developed a brief questionnaire to aid practitioners in prospectively predicting adherence with anti-hypertensive medications (Morisky, 1983). Subsequently, the instrument was validated in a number of studies and demonstrated to have good psychometric properties. Independent researchers have further expanded the application of this instrument to other disease states including diabetes and chronic obstructive pulmonary disease (Simpson, 2002; Gregiore, 2002; Knobel, 2002; Ren, 2002; Matthees, 2001; Pratt, 2001; Gao, 2000; Sen, 2000; Miller, 1997). The 4 items and their scoring algorithm are shown in Table 3.

1. Do you ever forget to take your medicine?	Yes	No
2. Are you careless at times about taking your medicine?	Yes	No
3. When you feel better do you sometimes stop taking your medicine?	Yes	No
4. Sometimes if you feel worse when you take your medicine,do you stop taking it?	Yes	No

Table 3. Original Morisky Scale.

To score the Morisky Scale, each question that is answered with a No receives a score of 1. The possible scoring range is therefore 0 to 4. Patients with higher scores are predicted to be more adherent to prescribed medication therapies. Patients with lower scores are at greater risk for nonadherent behavior.

The Modified Morisky Scale

In considering application of the original Morisky Scale to CMAG, several potential deficiencies were noted. Specifically, although the original Morisky Scale had demonstrated the ability to predict medication-taking behavior as well as outcomes, it was not designed to explain persistence (the patient's long-term continuation of therapy), which is a significant factor in the long-term management of chronic diseases. Also, the scale was not originally designed to classify patients into a high/low continuum for knowledge and motivation. Consequently, 2 new questions were added to create the Modified Morisky Scale (MMS). The MMS is shown in Table 4.

The MMS is used for patients who are already receiving medication therapies and for those who have been previously assessed with

ADHERENCE-SUGGESTION:

No single approach is better than another, combination of approaches works best.

NOTES:

**ADHERENCE-  
SUGGESTION:**

Involve patients in their care through self-monitoring.

**NOTES:**

CMAG tools described in earlier chapters of these guidelines. When the MMS is used, patients are assigned to an adherence intention quadrant as follows:

**Questions 1, 2, and 6**, which measure forgetfulness and carelessness, are considered to be indicative of motivation (or lack thereof) and consequently impact the motivation aspects of adherence intention.

**Questions 3, 4, and 5**, which measure if patients stop medications and understand the long-term benefits of continued therapy, were considered to be indicative of knowledge (or lack thereof) and consequently impact the knowledge aspects of adherence intention.

By using the MMS as an indicator of both *motivation and knowledge*, it is possible to use the scale ratings when assigning an adherence intention quadrant for the evaluated patient.

Question	Motivation	Knowledge
1. Do you ever forget to take your medicine?	Yes(0) No(1)	
2. Are you careless at times about taking your medicine?	Yes(0) No(1)	
3. When you feel better do you sometimes stop taking your medicine?		Yes(0) No(1)
4. Sometimes if you feel worse when you take your medicine, do you stop taking it?		Yes(0) No(1)
5. Do you know the long-term benefit of taking your medicine as told to you by your doctor or pharmacist?		Yes(1) No(0)
6. Sometimes do you forget to refill your prescription medicine on time?	Yes(0) No(1)	

**Table 4. Modified Morisky Scale.**

## Scoring

All questions on the MMS are answered on a "Yes" or "No" scale.

For the motivation domain, each "No" answer (questions 1, 2, 6) receives a score of 1 and each "Yes" answer receives a score of 0. This provides a scoring range of 0 to 3 for the motivation domain. If a patient's total score is 0 to 1, the motivation domain is scored as *low*. If the score is  $>1$ , the motivation domain is scored as *high*.



### ADHERENCE-SUGGESTION:

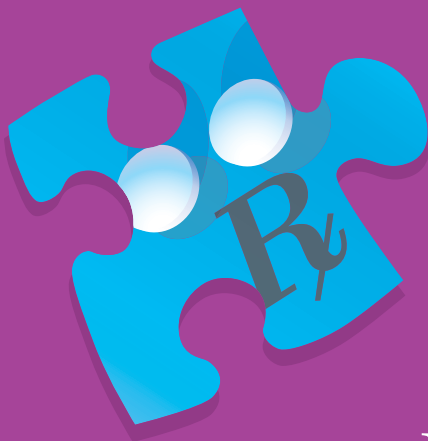
Present most important instructions first.

### NOTES:

For the knowledge domain, "No" answers for questions 3 and 4 receive a score of 1 and "Yes" answers for questions 3 and 4 receive a score of 0. On question 5, a "No" answer receives a score of 0 and a "Yes" answer receives a score of 1. This provides a scoring range of 0 to 3 for the knowledge domain. If a patient's total score is 0 to 1, the knowledge domain is scored as *low*. If the score is  $>1$ , the knowledge domain is scored as *high*.

After MMS scoring is completed, an adherence intention quadrant for CMAG is identified, along with recommendations for an adherence improvement plan. Similar to the quadrant assignment procedure for new patients, many disease states and patient types (eg, HIV, schizophrenia) may require modification of adherence improvement plans. Chapter 8 provides the case manager with specific adherence-plan modifiers for patient types who may benefit from modified adherence improvement interactions.





CMAG

8

# Factors that Influence Adherence to Pharmacotherapy and Interventions for Special Patient Populations

(Possible Modifiers to an Adherence  
Improvement Strategy)





# CHAPTER 8:

## FACTORS THAT INFLUENCE ADHERENCE TO PHARMACOTHERAPY AND INTERVENTIONS FOR SPECIAL PATIENT POPULATIONS

### Possible Modifiers to an Adherence Improvement Strategy.

**In this Chapter we will review the following:**



Describe special patient populations that may be at high risk for nonadherence.



Discuss the risk factors for nonadherence in special patient populations.



Describe potential intervention strategies that may improve adherence in special patient populations.







## CHAPTER 8: FACTORS THAT INFLUENCE ADHERENCE TO PHARMACOTHERAPY AND INTERVENTIONS FOR SPECIAL PATIENT POPULATIONS

### INTRODUCTION

The factors that influence adherence to pharmacotherapy may differ significantly among patients, and case managers must be aware of these differences and use interventions that are appropriate for the group in question. This chapter reviews adherence to therapy in several populations: the elderly, adolescents, injured workers receiving workers' compensation benefits, substance abusers, specific ethnic groups (African Americans and Hispanics), individuals with low literacy, HIV-infected patients, patients with psychiatric disease (e.g., schizophrenia, depression), and the homeless. The chapter also briefly evaluates and recommends interventions to improve adherence by these individuals.

### ADHERENCE IN THE ELDERLY

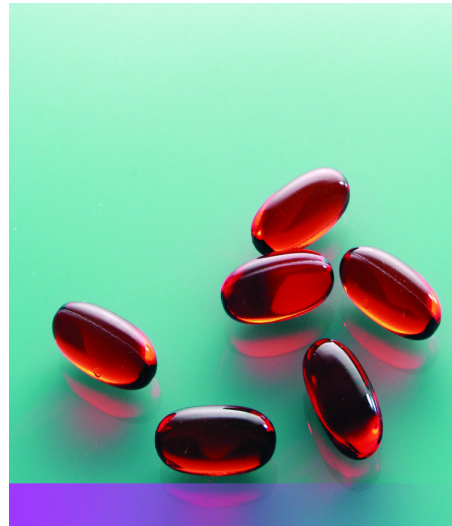
Elderly patients have a number of risk factors for nonadherence. Elderly patients are more likely than younger individuals to live alone, take multiple medicines, require more complex medication schedules, and to have decreased dexterity or cognitive functioning, or both. While the medical literature frequently cites increasing age as a risk factor for nonadherence (Stewart, 1989; Botelho, 1992), there is no general agreement that increasing age in itself decreases adherence (Balkrishnan, 1998). Some studies have actually found elderly patients to be more adherent to medications. In one study of 121 community-dwelling patients with rheumatoid arthritis, older adults made the fewest adherence errors, and middle-aged adults, the most (Park, 1999). Similarly, among 590 hypertensive patients prescribed a once-daily blood pressure-lowering regimen, significantly fewer delayed doses occurred in patients 60 years of age and older than in those under 60 (Maillon, 1996). In contrast, older individuals in a tuberculin screening program were less likely to be compliant than were younger people (Menzies, 1996).

Some reasons for conflicting results on adherence in the elderly may relate to the number of risk factors for nonadherence and the number of medications being taken in the patients being studied. Another factor may be what age is considered 'old' or 'elderly'. Some literature suggests that adherence to medications improves until the seventh decade at which point it tends to decrease (Mehta 1997, Venturini 1999). Increasing

### ADHERENCE-SUGGESTION:

Tailor medication regimens to the patient's usual daily schedule and lifestyle.

### NOTES:



**ADHERENCE-  
FACT:**

Stress the importance of compliance at follow-up visits & recognize the patient's effort to comply.

**NOTES:**

age in itself is probably not a specific risk factor for nonadherence but elderly patients are likely to have other risk factors for nonadherence that should be evaluated.

**FACTORS THAT MAY AFFECT ADHERENCE**Cognition

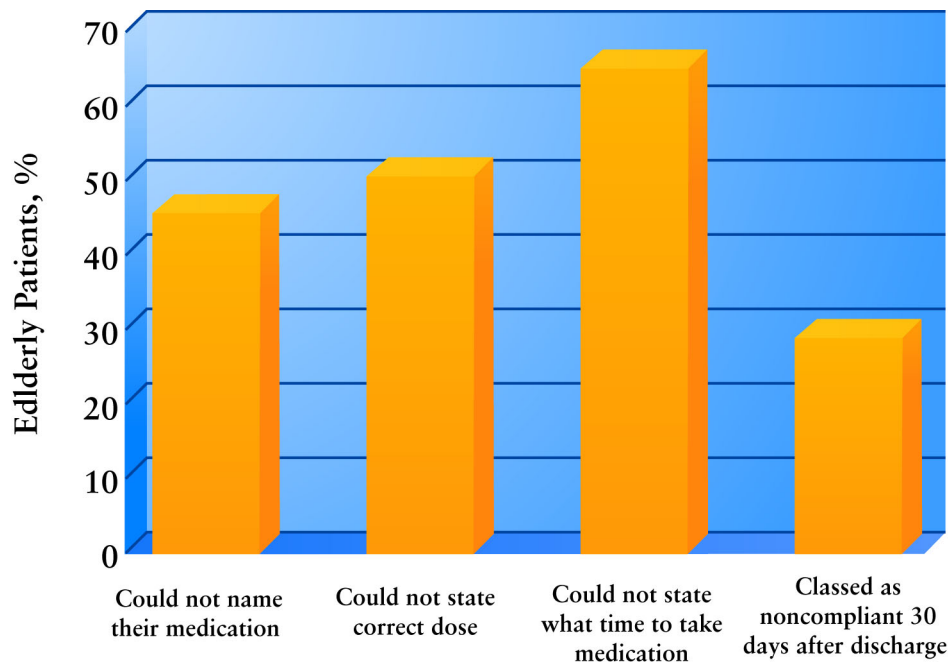
The cognitive decline associated with aging might be expected to place elderly patients at increased risk for potentially dangerous medication errors. Despite having received written instructions, 27% of elderly patients discharged from the hospital after admission for heart failure were classified in one study as noncompliant after 30 days. Much of this failure of adherence was attributable to poor recollection of instructions. Fewer than 25% recalled any written information they were given, and 9% did not remember receiving any information at all. Half of the patients surveyed could not recall doses, and nearly two thirds did not know what times of day to take their medications (Figure 6) (Cline, 1999). In another study, 40% of elderly patients did not know the purpose of their medication; only 21% understood the consequences of poor adherence; and fewer than 6% were aware of possible side effects of their prescribed drugs (Barat, 2001). Among the community-dwelling elderly, 62% completely understood how to take their medications, and 68% could name their current prescriptions. Patients completely conversant with their regimens were more likely than those with less-than-perfect understanding to rate themselves as adherent to therapy (Spiers, 2004). These results suggest that attention to cognitive factors may be a key to improving adherence to medical therapy by elderly patients.

Side Effects

Whether elderly patients are more or less sensitive than younger individuals to medication side effects is not clear, but adverse reactions may prompt older patients to change their regimens without informing health-care providers. One third of the older respondents to a survey altered their treatment schedules, primarily because of side effects (Lowe, 2000).

Treatment Regimen

Drug, dosage form, and total number of medications (i.e., polypharma-

**NOTES:**

**Figure 6. Knowledge about medication in elderly patients discharged from hospital (Cline, 1999).**

cy), among other regimen-related factors, may affect adherence in older patients. Not surprisingly, adherence decreases as the number of daily medications increases. Polypharmacy also significantly raises the risk for pharmacokinetic and pharmacodynamic drug interactions that result in the alteration or discontinuation of potentially effective therapy (Wood, 2000; Nichols-English, 2000; Blue Cross, 2003; Calif. State Board of Pharmacy, 2003).

#### Poor Patient-Provider Communication

Several surveys have identified poor communication between patients and providers as a significant obstacle to adherence by the elderly. Age-related declines in vision, hearing, and touch make communication difficult for both parties. Physicians who use jargon and a non-empathic interviewing style may also discourage effective exchange of information (Root, 1987).

Elderly patients frequently fear being labeled hypochondriacs or nuisances and, along with physicians, may accept signs and symptoms of disease as a normal part of aging, with the result that medically treatable problems may be overlooked. A belief by physicians that wellness, prevention, and health promotion are not realistic goals for older patients may create yet another barrier to effective long-term therapy (Root, 1987).

### Access to and Cost of Care

The elderly rely on prescription medications more than any other segment of the population, yet they are often the least able to pay. It has been estimated that only 69% of Medicare beneficiaries have some additional type drug coverage (Calif. State Board of Pharmacy, 2003). The high cost of medications may cause delays in filling or refilling prescriptions and the use of lower doses than prescribed.



### Trust in the Provider

In a recent survey of seventy healthy volunteers, trust in the physician reflected a greater weight when determining patient's willingness to take a prescribed medication in the elderly than in younger adults (Herve, 2004).

### **Interventions to Improve Adherence**

Memory aids, education and counseling, and pharmacy and multidisciplinary discharge plans that include medication plans and home visits have all been shown to improve adherence by older patients (Chang, 1991; Al-Rashed, 2002; Rich, 1995; Rich, 1996; Esposito, 1995). Linking medication taking to other daily activities such as meals or bedtime is another proven intervention (Spiers, 2004), as is informing patients of the most common side effects of their medications. Encouraging discussion of bothersome side effects with healthcare providers may avert discontinuation of medications by patients (Novielli, 2001).

Elderly patients may be more likely than their younger counterparts to have many chronic conditions and to be seeing several medical professionals. A portable prescription record may help both patients and providers keep track of current medications and avoid potential drug interactions or duplication of therapies. A family member or caregiver should accompany frail or cognitively impaired patients to appointments and be apprised of changes in medication regimens (Novielli, 2001). Table 5 lists other specific strategies (Calif. State Board of Pharmacy, 2003). The Pharmaceutical Manufacturers Association website at **[www.helpingpatients.org](http://www.helpingpatients.org)** contains information on assistance programs for elderly patients with limited financial resources.

Integrate drug therapy into the patient's overall treatment plan	<ul style="list-style-type: none"> <li>● Integrated interventions should involve physicians, nurses, and pharmacists</li> </ul>
Ensure that the patient understands the importance of medical therapy	<ul style="list-style-type: none"> <li>● Explain the disease being treated and its potential consequences, as well as benefits from the prescribed drug</li> <li>● Do not assume that the patient understands the disease and the need for treatment</li> </ul>
Simplify treatment regimens	<ul style="list-style-type: none"> <li>● Make sure that the patient actually needs all prescribed and over-the counter medications being taking</li> <li>● Use once-daily formulations when possible</li> <li>● Incorporate the regimen into the patient's lifestyle</li> </ul>
Ensure that the patient understands how to take medications	<ul style="list-style-type: none"> <li>● Review dosing regimens with patient and family member(s)</li> <li>● Provide written, highly visual, instructions</li> <li>● Show the patient how to use new products (eg, metered dose and transdermal preparations)</li> </ul>
Help the patient remember	<ul style="list-style-type: none"> <li>● Use medication calendars, pill boxes, and similar reminders</li> </ul>
Be aware of the patient's disabilities	<ul style="list-style-type: none"> <li>● Provide instructions in a quiet environment that is free of distractions</li> <li>● Make sure that written instructions are in a font that can be easily read by a visually impaired individual</li> </ul>
Help maximize reimbursement and access to care	<ul style="list-style-type: none"> <li>● Help with filing insurance claims</li> <li>● Help patients identify and use all available assistance programs</li> <li>● Determine whether mail or online ordering is most cost effective</li> </ul>

**Table 5. Interventions to Improve Adherence by Elderly Patients (Calif. State Board of Pharmacy, 2003).**



## ADHERENCE IN ADOLESCENTS

Relatively few studies have assessed factors that may influence adherence by pediatric or adolescent patients, and this lack is reflected in the dearth of interventions to improve adherence. These limitations are most likely due to the smaller number of diseases that necessitate long-term medical treatment in children than in adults. Nevertheless, studies focused on three diseases that are not uncommon among adolescents - asthma, diabetes, and HIV infection - have provided some information.



### How Well Do Adolescents Adhere to Therapy?

Adherence to long-term medical treatment by pediatric and adolescent patients is low. Overall estimates for asthma medication range between 20% and 73% and only 49% of pediatric patients with persistent asthma were adherent, as determined by prescription refill rates (Divertie, 2002). According to caregiver or self-reports, between 26% and 59% of adolescent patients with HIV infection fail to adhere to their regimens (Steele, 2003). Adolescent patients with type 1 diabetes have poorer glycemic control and more frequent episodes of hypoglycemia than do adults with diabetes. While physiologic differences between these age groups may explain some of these results, the failure to administer insulin, monitor glucose levels, and follow prescribed treatment plans most likely account for poor glycemic control in adolescent patients with diabetes (Hoffman, 2002).

### Risk Factors for Poor Adherence in Adolescents

#### Parental Attitudes

Parental/caregiver attitudes to treatment are a key determinant of adherence in children. A review of the literature on adherence by pediatric and adolescent patients with HIV infection emphasized the importance of caregiver beliefs about the efficacy of medication and following the treatment regimen (Steele, 2003).

#### Adolescents' Attitudes

Teenagers are often preoccupied with the present and are unable to perceive, or may ignore, their vulnerability to conditions that may result in long-term health problems (Timms, 1999).

### Transition to Autonomy

The period of transition from dependence on parents to autonomy may also increase the risk for poor adherence by chronically ill adolescents as there may be confusion about who is responsible for administering medication, the adolescent patient or the caregiver (Tebbi, 1993). In one study of adolescents with juvenile rheumatoid arthritis, a high degree of autonomy was associated with increased adherence to therapy (Litt, 1982).

These results support the view that high self-esteem, good social functioning, and perceived autonomy may promote adherence (Pidgeon, 1989).



### **MOTIVATIONAL INTERVIEWING- FACT:**

There are no simple solutions to helping people with behavior change, and if you are looking for a magic bullet, then think about another professional activity!

### **NOTES:**

### **Interventions to Improve Adherence**

The first step in achieving maximum adherence is to secure the participation of both the parents/caregivers and the patient in formulating the treatment plan. Healthcare providers should solicit opinions from the entire family about how best to manage disease. These discussions should include the rationale for medication and the need for adherence. Family health and cultural beliefs, knowledge of disease, attitudes on self-care, and financial ability to purchase medications also should be assessed (Divertie, 2002).

The effect of patient education cannot be minimized. A 6-month program with individual coaching sessions improved avoidance of asthma triggers, increased medication adherence, and decreased frequency of asthma episodes predominantly among female African-American high school students (Berg, 2004). Specific reminders (e.g., telephone calls) (O'Brien, 1998), simplification of treatment (e.g., not more than twice-daily dosing), and written dosing instructions may also be helpful for pediatric patients (Devertie, 2002).

Table 6 summarizes interventions to enhance adherence by adolescent patients.

TOPIC	STRATEGY
Financial barriers	<ul style="list-style-type: none"> <li>● Assist patient or provide referral to find programs that offer ongoing care, medications, and inhalers at low cost or no cost.</li> </ul>
Communication	<ul style="list-style-type: none"> <li>● Ensure that all providers are empathetic and understanding.</li> <li>● Correct the patient's or the parent's misconceptions about the disease or treatment.</li> <li>● Negotiate expected goals of treatment, and involve the patient and the family in all treatment options and decisions.</li> <li>● Address health beliefs that could influence treatment, especially when the family and provider are of different cultures.</li> <li>● Enthusiastically reinforce each positive treatment experience.</li> </ul>
Family	<ul style="list-style-type: none"> <li>● Be aware of the cultural imperatives in the families with whom you work.</li> <li>● Assess the family structure, and work toward increasing the support given to the child no matter what type of family structure is in place.</li> </ul>
Education	<ul style="list-style-type: none"> <li>● Comprehensive, individual education by knowledgeable providers is essential.</li> <li>● Limited, concrete, specific information should be offered at every visit.</li> <li>● Reinforcement of material taught should be given with written handouts at appropriate reading level.</li> </ul>
Modifications	<ul style="list-style-type: none"> <li>● Reduce complexity of treatment plan.</li> <li>● Limit dosing frequency to twice each day.</li> <li>● Provide a written plan with every medication change.</li> </ul>

**Table 6. Strategies for Improving Adherence by Adolescent Patients (Divertie, 2003).**



## ADHERENCE IN INJURED WORKERS RECEIVING WORKERS' COMPENSATION BENEFITS

Adherence differs significantly across special populations and workers' compensation is no different. Poor adherence is affected by behavioral, ethnic and racial issues. Other factors such as limited access to health care, low literacy rates, financial limitations factors and low motivation decrease adherence and may be present at that same time (Carter 2003). By being aware of these factors, the case manager is able to effectively work with injured employees in understanding their various injury/health concerns. The case manager can identify their motivational level and readiness to change plus provide support to positively impact adherence and their appropriate return to work. Treatment and medication adherence are discussed frequently with injured workers by the primary care physician, specialist physician and adjuster but it is often the case manager who is the logistic coordinator. The case manager plays a pivotal role in addressing the assessment, interventions, communication and collaborative practice integration of the whole team who will achieve cost savings, employee satisfaction and appropriate return to work.

Studies on medication nonadherence are primarily absent with this special population. This could be related to the varying types of patients identified in the workers' compensation system. Patients come from all types of industries and professions. Injuries range from severe to minor. Treatment interventions may include hospitalization with multiple systems of the body involved to a laceration requiring outpatient suturing in an occupational medicine clinic. Medications other than those prescribed for medical issues pre-injury or even post-injury may be subject to nonadherent behavior. Pain control medications may also be included.

### Risk Factors for Poor Adherence in Injured Workers

#### Dramatic Life Changes

The injured worker could be faced with a life changing disability. Adjustments to these changes could affect the injured workers' motivation to adhere to a treatment plan.

#### Financial Limitations

If the injured worker is off work due to an injury, even though they may be compensated for their lost time, there remains limitations in financial issues for most. According to state laws, the injured worker is often compensated a percentage of their wage with a maximum weekly wage. Injured workers may not be compensated for overtime wages or other work they may be involved in such as a second job. This could relate to financial limitations.

### **MOTIVATIONAL INTERVIEWING- FACT:**

Behavior change strategies are not magic bullets, but ways of structuring a conversation which maximize the individual's freedom to talk and to think about change in a atmosphere free of coercion and the provision of premature solutions.

### **NOTES:**

## Injured Worker Point of View

As compensated time away from the work environment is a large factor in workers' compensation cases, select injured workers develop a mind-set of entitlement and secondary gain related to time off work. In addition, as the injured worker may perceive the injury as the fault of the employer and the health care worker as an extension of the employer; attitudes may interfere with health care worker relationships. There may also be misaligned incentives regarding return to work. Adherence may be confused in this complication of the workers' compensation system. Low motivation may be a result.

## Litigious Arena

Workers' compensation is a very litigious arena, which can create a strained physician/injured worker, case manager/injured worker and employer/injured worker relationship. This may complicate the ability to pursue interventions discussed in these guidelines. Trust becomes strained. Low motivation may be a result.

## **Interventions to Improve Adherence**

It is critical that the case manager collaborate with all parties including the injured worker to assist in the creation of a treatment plan and coordination of interventions. Communication must remain consistent and open. The injured worker must be included in the formation of the goals of treatment and return to work. Trust must be gained and preserved between the treatment team, the case manager and the injured worker.



Assessment regarding motivation and readiness to change should be a priority. Reassessment on a scheduled plan will assist in consistency of the message relayed to the injured worker. The injured worker should be educated regarding their responsibility to adhere to the treatment plan since the injury occurred to their body. The injured workers'

goals and expectations should be discussed. The injury and the surrounding medical issues must be explained in terminology understood by the injured worker. Health literacy, cultural differences and socio-economic issues must be considered (Carter, 2003). The employer's goals should also be discussed for the injured worker to understand the complete picture. Advocacy by the case manager is paramount in the effectiveness of improving adherence to a treatment plan.

## ADHERENCE IN SUBSTANCE ABUSERS

As both a disease and a risk factor for reduced adherence, substance abuse represents a major barrier to effective therapy for other diseases (Ammassari, 2002). Substance abusers are likely to have other conditions - psychiatric disease, low socioeconomic status, homelessness - that exert an additional negative impact on adherence (Zilberman, 2003; Kushel, 2001). Injectable drug users are at increased risk for HIV infection, and studies have indicated the deleterious effect of substance abuse on adherence to highly active antiretroviral therapy (HAART) and treatment outcomes in patients with HIV disease (Chesney, 2000; Lucas, 2001; Powell-Cope, 2003; Hinkin, 2004). Ongoing substance abuse also decreases adherence to dietary and blood pressure-lowering therapy in men with hypertension (Kim, 2003), and to antipsychotic medication in patients with schizophrenia (Hudson, 2004).

### NOTES:

#### MOTIVATIONAL INTERVIEWING FACT:

**“If a change feels important to the patient, and the patient has the confidence to achieve it, they will feel more ready to have a go, and more likely to succeed.”**

#### Treat Substance Abuse First

A key issue for substance abusers (and one that requires specific intervention) is their readiness to make a significant change in lifestyle that will permit good adherence to treatment. Therapy for other conditions may not be feasible until the primary issue has been addressed and resolved (Neff, 2002).

#### Interventions to Improve Adherence

Interventions to reduce or eliminate ongoing substance abuse have only modestly improved adherence to HAART by patients with HIV infection. In a study of 349 HIV-infected patients with drug or alcohol abuse, treatment included living in a halfway house or residential facility, visiting a substance abuse counselor or mental health professional, or participating in a methadone maintenance program. Such treatment did increase the probability that a patient would initiate HAART but did not improve 30-day adherence to treatment or reduce viral load (Palepu, 2004). Results differed markedly in 34 patients with both schizophrenia and substance abuse who participated in a cognitive-behavioral drug-relapse prevention program that included development of substance abuse management, social, and independent-living skills. Medication adherence, psychiatric symptoms, and quality of life all improved (Shaner, 2003).

The US Public Health Service has published recommendations for improving adherence to HAART by HIV-infected patients who are also substance abusers (Table 7), and these also apply to substance abusers who have any other chronic disease. Any effort to integrate treatment for substance abuse and HIV/AIDS, either within a single agency or through individual care plans, must contain a strong case-management model, include social services as a core part of the treatment plan, cross-train all providers in the requirements of the other treatment centers, and facilitate eligibility determinations for all needed therapies (US Public Health Service, 2004). A similarly integrated approach is necessary for patients with both schizophrenia and substance abuse (Kavanagh, 2002).

- Use of a strong case-management model
- Inclusion of social services as a core part of the treatment plan
- Cross-training of all providers in the requirements of the other treatment centers
- Facilitation of eligibility determinations for all needed therapies

**Table 7. Interventions to Improve Adherence by Patients With Substance Abuse Disorders (US Public Health Service, 2004).**

## ADHERENCE IN SPECIFIC RACIAL AND ETHNIC GROUPS

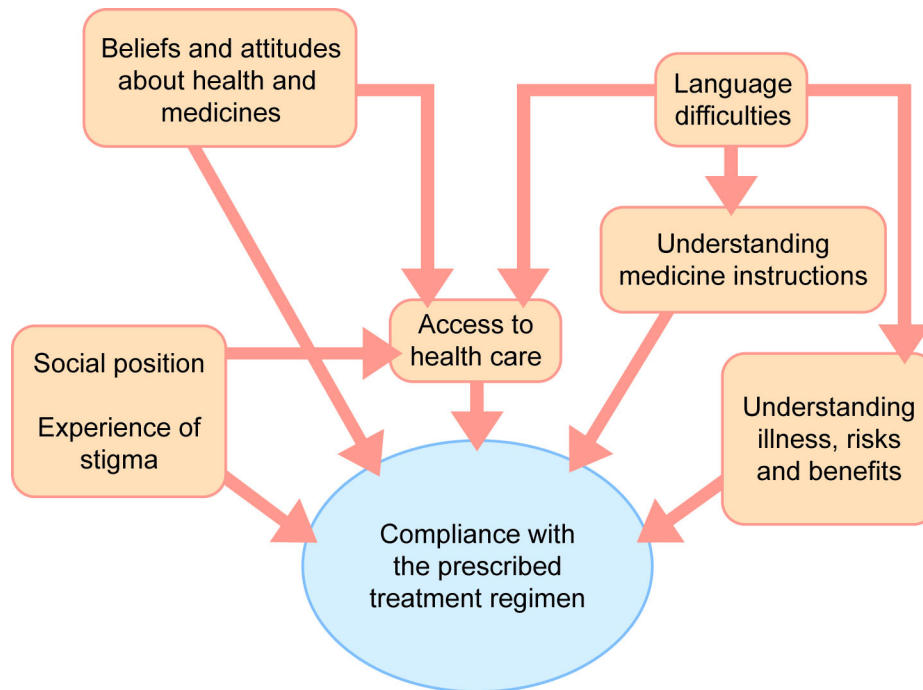
Adherence differs significantly across racial and ethnic lines, and poor adherence to long-term medical therapy has been independently associated with race and ethnicity. Nevertheless, other factors (lack of health insurance, limited access to health care, low literacy rates) that increase the risk for poor adherence may also be present at the same time (Figure 7) (Carter, 2003). This section considers two large minority populations in the United States, African Americans and Hispanics.

### African Americans

African Americans are less adherent to treatment for hypertension, hypercholesterolemia, HIV disease, and psychiatric disease than are patients from other racial groups, particularly whites (Charles, 2003; Lucas, 2001; Opolka, 2003). For example, medication adherence in the African American Study of Kidney Disease and Hypertension Pilot Study (AASK) was only 65% and was associated with failure to achieve blood pressure goals (Lee, 1996).

### Specific Barriers to Adherence

Among the barriers to adherence by African Americans are beliefs about treatment, low literacy, lack of trust in healthcare professionals, disrupted family structure, and lack of access to healthcare. African Americans also have higher rates of substance abuse than whites.



**Figure 7. Potential racial and ethnic influences on adherence to medical therapy (Carter, 2003).**

### Cultural Beliefs and Customs

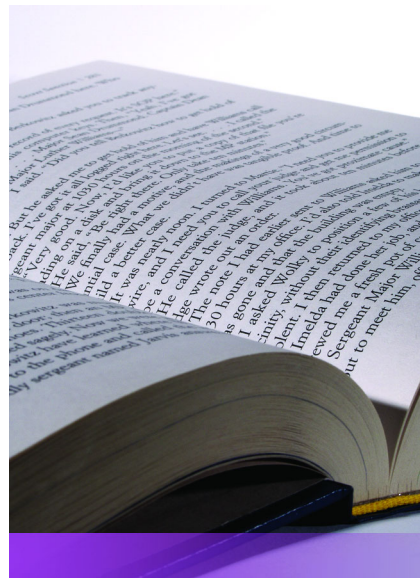
Traditional aspects of African-American culture (e.g., mistrust of the healthcare system and ingrained dietary habits) decreased adherence to prescribed diet in patients with diabetes (de Groot, 2003).

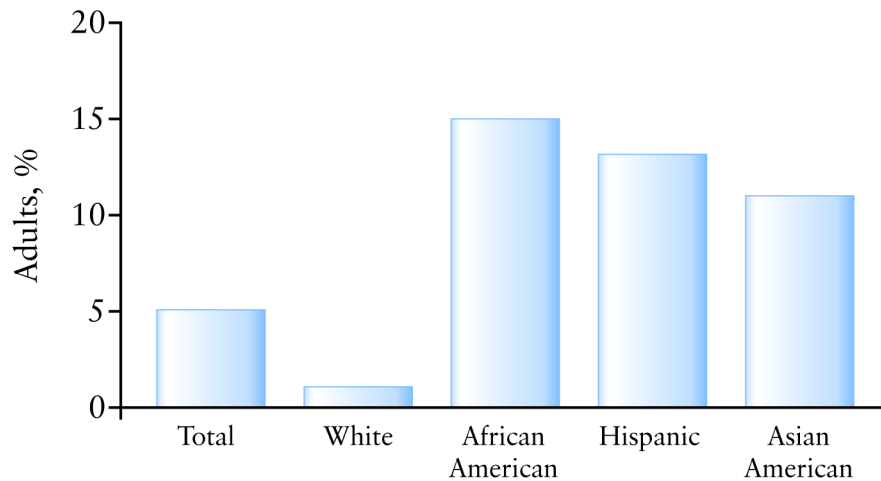
### Literacy

Of 85 urban African-American men and 53 women receiving HIV treatment, 29% were either functionally illiterate or had fewer than 12 years of education. These individuals had a reduced likelihood to be adherent to therapy (Kalichman, 1999).

### Attitudes Toward Physicians

African-American men with HIV infection expressed considerably more doubt than infected whites about their physicians' competence and the treatment regimen designed for them (Siegel, 2000). In a survey of more than 1000 African-Americans, 15% believed that they would receive better healthcare if they were a different race or ethnicity (Figure 8) (Collins, 2002).





**Figure 8. Patients who believed they would receive better health-care if they were of a different race or ethnicity (Collins, 2002).**

### Family Structure

African-American adolescents with diabetes have vastly poorer metabolic control than their white counterparts. This heightened risk for elevated blood glucose has been related to poor adherence to therapy due, at least in part, to life in a single-parent household (Auslander, 1997).

### Access to Healthcare

The substantially lower likelihood among African-Americans than whites to have health insurance may limit access to healthcare (Figure 9) (Collins, 2002).

### Hispanics

Compared with whites, inner-city Hispanics are poorly adherent to treatments for cardiovascular disease, with consequent increases in the long-term impact of hypertension (Francis, 1991). Hispanic patients may adhere less faithfully to treatment for psychosis than white patients (Opolka, 2003).

### Specific Barriers to Adherence

Hispanics face many of the same obstacles to adherence as do African Americans (mistrust of the healthcare establishment [Figure 8], and lower access to healthcare than whites [Figure 9]). Nevertheless, some barriers are specific to this group.

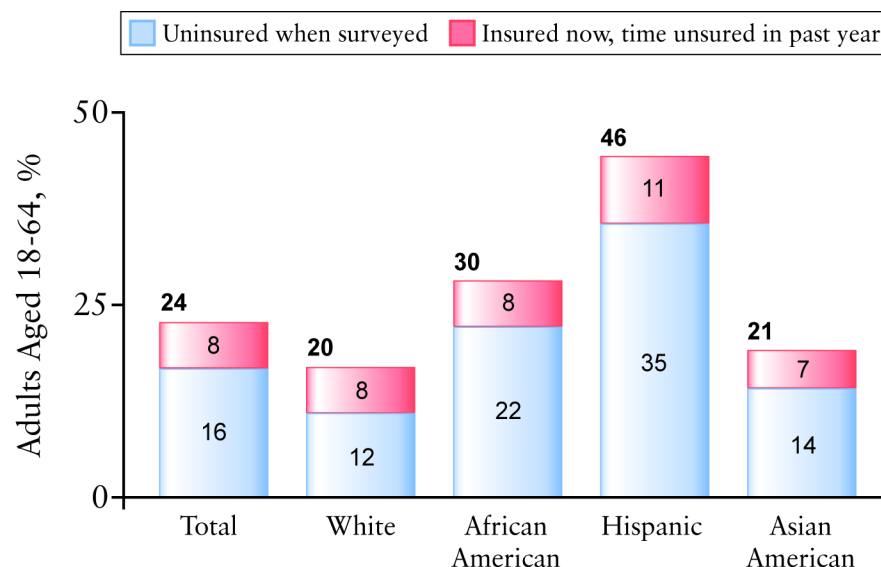


### Cultural Beliefs

Mexican Americans tend to equate health with the absence of pain, a view that has the potential to negatively affect adherence, particularly for preventive medications and therapy for asymptomatic conditions. Additionally, good or poor health may be attributed to God, reducing the perceived importance of self-care (Carter, 2003).

### Folk Remedies

Hispanic populations make extensive use of folk remedies (Risser, 1995), and according to a recent evaluation, Hispanic mothers often substitute these "zumos" for their asthmatic children's prescribed medications. This survey also showed that 88% of Hispanic mothers believed that medications were overused in the United States and that physicians hid therapeutic information from them (Bearison, 2002).



**Figure 9. Health insurance coverage for different racial and ethnic groups (Collins 2002).**

### Language

A large percentage of Hispanics in the United States do not speak English (Francis, 1991), a problem the medical profession is generally ill equipped to deal with. Language difficulties can lead to poor understanding of both the importance of treating disease and instructions for the administration of medications and have been specifically identified as a barrier to adherence by Hispanic patients being treated for HIV infection (Murphy, 2003).

### **MOTIVATIONAL INTERVIEWING- FACT:**

People have different needs and they do not all need the same kind of help.

### **NOTES:**

**Interventions to Improve Adherence in African-American and Hispanic Patients**

Several interventions may improve adherence to medical therapy in racial and ethnic minorities, including African Americans and Hispanics (Table 8). These include improving access to healthcare (expanding clinic hours, providing transportation), counseling and educating both patients and family, implementing aggressive referral and follow-up, providing medication instructions in Spanish when necessary, being sensitive to cultural factors that may influence adherence, and improving the patient-provider relationship and communication (Nichols-English, 2000; Francis, 1991). Peer support may also help promote adherence to therapy among African-American and Hispanic patients (Derose, 2000). Peer support may be especially important for patients who are suspicious of, or distrust, the healthcare system.

Relatively few interventions aimed at African Americans or Hispanics have been evaluated in controlled clinical studies. In one trial, family education significantly improved disease knowledge, self-efficacy, self-regulatory skill, and adherence, and decreased symptom persistence and activity restriction in African-American and Hispanic patients with asthma (Bonner, 2002). Emotional support from family members also improved adherence to a low-sodium diet by African-American adolescents at increased risk for hypertension (Wilson, 2001).

<b>Access to healthcare</b> <ul style="list-style-type: none"><li>● Expand clinic hours</li><li>● Provide transportation and childcare services when needed</li></ul>
<b>Improve educational programs</b> <ul style="list-style-type: none"><li>● Explain nature of disease</li><li>● Discuss side effects of medication</li><li>● Counsel patient and family</li><li>● Provide medication instructions in Spanish if necessary</li></ul>
<b>Improve patient provider relationships</b> <ul style="list-style-type: none"><li>● Be sensitive to cultural beliefs about health and medicine</li><li>● Communicate regularly with the patient</li><li>● Implement aggressive follow-up and referral</li></ul>
<b>Other</b> <ul style="list-style-type: none"><li>● Enlist peer support for adherence to treatment</li></ul>

**Table 8. Interventions to Improve Adherence by African Americans and Hispanics (Nichols-English, 2000; Francis, 1991; Derose, 2000).**

**PATIENTS WITH LOW LITERACY**

Approximately 22% of the US population is illiterate (Lasater, 1998), but low literacy



may extend beyond the complete inability to read. Patients who can read and understand simple materials may still be unable to comprehend more complicated written information about their disease and the medications to treat it.

### Impact of Low Literacy on Use of Healthcare Resources and Adherence to Therapy

Reduced literacy lessens the likelihood of adherence to medication regimens and appointments, and may prevent patients from presenting for care early in their disease (Nichols-English, 2000).

Inadequate health literacy adversely affects the management of a number of chronic diseases and increases the risk for hospitalization. Among 979 emergency department patients who participated in the Literacy in Health Care study, those with inadequate literacy were twice as likely as patients with adequate literacy to be hospitalized (31.5% vs. 14.9%) (Baker,



1998), probably as a result, at least in part, of poor understanding of their health status and failure to comply with recommendations for treatment of chronic disease. In a study of 653 new Medicare enrollees 65 years of age and older with at least one chronic disease (115 with asthma, 266 with diabetes, 166 with congestive heart failure, 214 with hypertension), the 24% with inadequate literacy knew less about their disease than did coevals with adequate literacy (Gazmararian, 2003). These results suggest that people with low health literacy may not understand the health risks associated with their condition or the potential consequences of failure to adhere to medical therapy for it.

A study of 182 patients with HIV infection (60% ethnic minorities, 73% with AIDS) assessed the impact of low literacy on adherence to long-term medical therapy. The patients were evaluated with an adapted form of the Test of Health Literacy in Adults (TOFHLA), a comprehensive interview that included 2-day recall of treatment adherence and reasons for nonadherence, and measures of substance abuse, social support, emotional distress, and attitudes toward primary care providers. Multiple logistic regression analysis identified education and health literacy as significant and independent predictors of 2-day treatment adherence after controlling for age, ethnicity, income, HIV symptoms, substance abuse, social support, emotional distress, and attitudes toward healthcare workers. In addition, patients with low literacy were more likely to miss treat-

#### **MOTIVATIONAL INTERVIEWING- FACT:**

The Average Reading skills of adults in the US are between the 8th and 9th grade levels.

#### **NOTES:**

ment doses because of confusion, depression, and a desire to cleanse their bodies than were participants with higher health literacy (Kalichman, 1999).

**Interventions to Improve Adherence in Patients with Low Literacy**

Interventions to overcome poor literacy and improve adherence include careful screening for illiteracy, use of visual aids and medication organizers, and enlistment of literate family members (Table 9). The CMAG chapter on Health Literacy provides information on evaluating patients for low health literacy.

Providers should also strive to distribute educational materials that are written at a low-literacy level. Medication instructions should be short and simple and contain culturally sensitive graphics. Easy-to-read written materials should be combined with verbal instructions, which should be repeated often to reinforce understanding. Pictograms and warning stickers should be affixed to prescription bottles and nonprescription product packages (Nichols-English, 2000).

Formal evaluations of such interventions have yielded mixed results. In a study of 80 elderly, predominantly indigent individuals with low literacy, verbal teaching combined with a color-coded medication schedule enhanced adherence (Hussey, 1994). A small study carried out in rural Cameroon showed that use of culturally sensitive visual aids and a medication organizer significantly improved adherence among women receiving antibiotics (Ngoh, 1997). In contrast, a program to raise health literacy increased knowledge about HIV disease and adherence but did not significantly alter taking of medication by 81 Hispanic men and women (van Servellen, 2003).

- Carefully screen for low literacy
- Repeat medication instructions several times
- Use visual aids to convey medication instructions
- Use medication organizers
- Enlist literate family members to help ensure adherence

**Table 9. Interventions to Improve Adherence by Patients With Low Literacy (Ngoh, 1997; Hussey, 1994; Nichols-English, 2000).**

## ADHERENCE IN PATIENTS WITH HIV DISEASE

Patients with HIV infection must take 95% of their pills to achieve an 80% probability that plasma HIV-RNA will be maintained at less than 50 copies/mL. Adherence below 95% decreases the probability of sustained viral suppression to 50% (Paterson, 2000). Patients with HIV infection must be able to adhere to complicated regimens with high pill burdens (>20 per day in some cases). Even in highly committed patients, adherence to HAART may wane over time, a phenomenon described as pill or treatment "fatigue" (Lesho, 2003).



### **MOTIVATIONAL INTERVIEWING-FACT:**

If someone is not ready to change, action talk will be counterproductive.

### **NOTES:**

Because a high level of adherence to HAART is required to maintain viral suppression, factors and interventions that influence adherence by patients with HIV disease have been the subject of intense study.

### **Risk Factors for Poor Adherence**

#### Patient Factors

##### *Ethnicity and Other Demographic Factors*

Ethnicity has a significant relationship with adherence to HAART. African Americans, for example, are far less likely than other patients with HIV disease to adhere to therapy (Golin, 2002). Less than a high school education and an income below \$10,000 per year are also associated with poorer adherence to HAART (Golin, 2002).

##### *Comorbidities*

Although substance abuse is predictive of nonadherence by patients with HIV disease, good adherence may still be achieved if the provider addresses medication, regimen, and side-effect concerns. Intravenous-drug users are significantly less likely than other patients to begin HAART, but adherent patients have responses to therapy similar to those from other exposure groups once treatment has begun. Depression and stress are also strong predictors of nonadherence to HAART. Hopelessness and negative feelings can reduce motivation for self-care and adversely affect the taking of prescribed medications (Chesney, 2003).

### *Beliefs*

African-American men may have less faith in their physicians and in their own ability to adhere to treatment than white men. Some substance abusers believe that HAART reduces the street drug "high" or, conversely, that street drugs impair the effectiveness of HAART (Chesney, 2003). In addition, patients with asymptomatic early-stage HIV disease may not believe that they are ill and need treatment.

### *Forgetfulness and Poor Understanding*

The most commonly cited reason for nonadherence is forgetting (Table 10) (Bartlett, 2002), and the most commonly forgotten dose is the middle one in a three-times-a-day regimen (Chesney, 2003). Difficulty understanding medication schedules also impedes adherence, and food and liquid restrictions can confuse patients taking HAART (Chesney, 2003). In one study, 25% of patients simply did not understand how to follow their HAART regimens (Chesney, 2000).

Reason Cited	Patients, %
Simply forgot	66
Away from home	57
Busy with other things	53
Had a change in daily routine	51
Fell asleep/slept through dose	40
Had problems taking medications at specific times	40
Felt ill or sick	28
Wanted to avoid side effects	24
Felt depressed/overwhelmed	18
Had too many pills to take	14
Did not want others to notice me taking medications	14
Felt drug was toxic/harmful	12

**Table 10. Reasons For Missing Antiretroviral Medications Among Patients with HIV Infection (Bartlett, 2002).**

### Treatment Factors

#### *Complexity of Regimens*

Multiple daily doses and food restrictions may greatly influence the willingness to adhere to HAART. As is true with other therapies, adherence is better with once- or twice-daily than with more frequent dosing. Fitting the taking of medication into the

patient's lifestyle and schedule may also have a positive effect (Chesney, 2003).

### *Side Effects*

Patients quickly discontinue or change HAART when they experience side effects. In fact, adverse reactions account for more regimen changes than does virologic failure, with approximately 25% of patients discontinuing treatment during the first year of HAART. Some HAART-related adverse events (fatigue, diarrhea, nausea, stomach pain) can be effectively managed. Others, such as lipodystrophy, which may prompt as many as 37% patients to stop treatment or change medications, elude easy management (Chesney, 2003).

### *Societal factors*

Poor access to medical care and homelessness compromise adherence to HAART (Wagner, 2001; Fogarty, 2002).

## **Interventions to Improve Adherence**

Multifaceted approaches that address patient, regimen, and societal barriers are the most effective way to improve adherence to HAART (Chesney, 2003). Comorbid conditions, such as psychiatric illness and substance abuse must be dealt with before antiretroviral therapy is initiated (Stone, 2001).

Other specific interventions include educating the patient about the goals of therapy and the importance of adherence; anticipating side effects and treating them promptly; simplifying treatment-associated food restrictions; minimizing pill burden and regimen complexity; soliciting family and social support; providing clear dosing instructions and reminders; monitoring adherence and intensifying management when necessary; and enlisting other health professionals to reinforce adherence (Table 11) (Lesho, 2003).

Evidence of efficacy is a powerful reinforcement for adherence, and laboratory results demonstrating suppression of HIV replication should be communicated to the patient as quickly as possible after treatment begins (Chesney, 2003). Patients must be made aware that poor adherence can select for resistant HIV strains. Drug resistance decreases therapeutic options and the physician's ability to design a regimen to minimize side effects and the patient's medication burden (Chesney, 2003).

New fixed-dose antiretroviral combinations and once-daily regimens have already simplified treatment and produced modest positive effects on

### **MOTIVATIONAL INTERVIEWING- FACT:**

Good consulting involves allowing the person to express his or her fears about change, without being made to feel judged or pressurized into action.

### **NOTES:**

adherence (Trotta, 2002; Taburet, 2003). If these approaches fail, directly observed therapy may sometimes be useful (Mitty, 2003).

- Educate the patient about the goals of therapy and the importance of adherence to the regimen.
- Anticipate and treat side effects.
- Simplify food requirements.
- Reduce dosage frequency and number of pills, if possible.
- Recruit the patient's family and friends for support.
- Provide a written dosing schedule, pictures of medications, daily or weekly pillboxes, alarm clocks, pagers, or other reminders.
- Monitor adherence and intensify management in periods of low adherence.
- Consider the impact of new diagnoses (eg, depression, wasting, recurrent chemical dependence) and include adherence intervention in the management plan.
- Enlist nurses, pharmacists, peer educators, volunteers, case managers, drug counselors, physician assistants, nurse practitioners, and research staff to reinforce adherence.

**Table 11. Interventions to Improve Adherence to HAART by Patients With HIV Infection (Lesho, 2003).**

## ADHERENCE IN PATIENTS WITH PSYCHIATRIC DISEASE

According to the National Mental Health Information Center, about 22% of the US population has a psychiatric disorder annually, and approximately 3% of adults have been identified with at least one severe psychiatric condition, as indicated by diagnosis and disability (National Medical Health Information Center, 2004). Psychiatric disease itself is a significant barrier to adherence, and many affected patients have complicating comorbid conditions (like substance abuse and homelessness). It is beyond the scope of this chapter to consider the effects of all psychiatric diseases on adherence; therefore, the discussion will be limited to depression and psychosis.

### Adherence in Patients with Psychosis

Nonadherence to medication has been shown in a number of studies to be the most powerful predictor of relapse in patients with schizophrenia. In a retrospective analysis of 48,000 patients with schizophrenia treated at Veteran's Affairs medical centers,



patients that were nonadherent to their antipsychotic medications had a 2.4-fold increase in psychiatric hospital admissions (Valenstein, 2002).

A systematic review of 103 studies that included 23,796 patients with psychoses identified 26% as not adherent to antipsychotic therapy. Lack of insight into the disease, positive psychotic symptoms, younger age, male sex, a history of substance abuse, unemployment, and low social functioning increased the risk of nonadherence (Nose, 2003). Additional factors that have been found in other studies to be



associated with nonadherence include negative attitude or subjective response to medications, previous nonadherence, substance abuse, shorter duration of illness, poor therapeutic alliance between patient and healthcare provider, and inadequate discharge planning or aftercare environment (Lacro, 2002).

The dysphoric and motor side effects of conventional neuroleptics may also reduce adherence (Marder, 1998). An extensive review of the literature has suggested that administration of better-tolerated atypical antipsychotics may improve adherence only modestly (Lacro, 2002).

### Improving Adherence in Patients with Psychosis

In a review of 24 randomized and controlled clinical trials that investigated interventions to reduce nonadherence, educational programs including predischARGE sessions, psychotherapy, and telephone prompting to take medication emerged as the most effective (Nose, 2003). Another review of interventions to improve adherence found that those more likely to be successful focused on attitudes and beliefs about medications as opposed to focusing only on knowledge. Also, interventions that focused primarily on medication adherence were more likely to be successful than medications with a broad educational focus (Zygumunt, 2002). Other approaches include tailoring treatment regimens to suit patients' needs, recognizing the patient as a consumer of services, and appreciating individual and interpersonal psychological factors such as specific psychopathologic characteristics and communication difficulties (Gray, 2002; Baldessarini, 1994). A summary of potential strategies to improve adherence to antipsychotics can be found in Table 12.

#### **MOTIVATIONAL INTERVIEWING- FACT:**

Each contact between clinician and patient should be seen as an opportunity for health promotion.

#### **NOTES:**

Type of Compliance Problem	Strategies for Improving Compliance
Patient related	<ul style="list-style-type: none"> <li>● Cognitive therapy</li> <li>● Education about the illness</li> <li>● Education about the benefits of treatment</li> <li>● Memory aids (eg, phone reminders, medication timers)</li> <li>● Involvement of patient in therapeutic alliance</li> </ul>
Physician related	<ul style="list-style-type: none"> <li>● Education on the impact and management of side effects</li> <li>● Use of a "patient-centered" approach</li> </ul>
Social environment related	<ul style="list-style-type: none"> <li>● Education and support for the patient's family</li> <li>● Improved access to mental health services: <ul style="list-style-type: none"> <li>● Assertive case management</li> <li>● Home visits</li> <li>● Convenient clinic times and places</li> </ul> </li> <li>● More attractive clinic environment</li> <li>● Improved coordination between different service providers</li> </ul>
Treatment related	<ul style="list-style-type: none"> <li>● Minimizing complexity of regimen</li> <li>● Titration to optimum dose</li> <li>● Minimizing impact of side effects on patient's life</li> <li>● Providing clear instructions on medication use</li> <li>● Selection of antipsychotic with minimal extrapyramidal side effects, weight gain, or prolactin effects</li> </ul>

**Table 12. Potential Strategies to Improve Adherence to Antipsychotics (Perkins, 2002).**

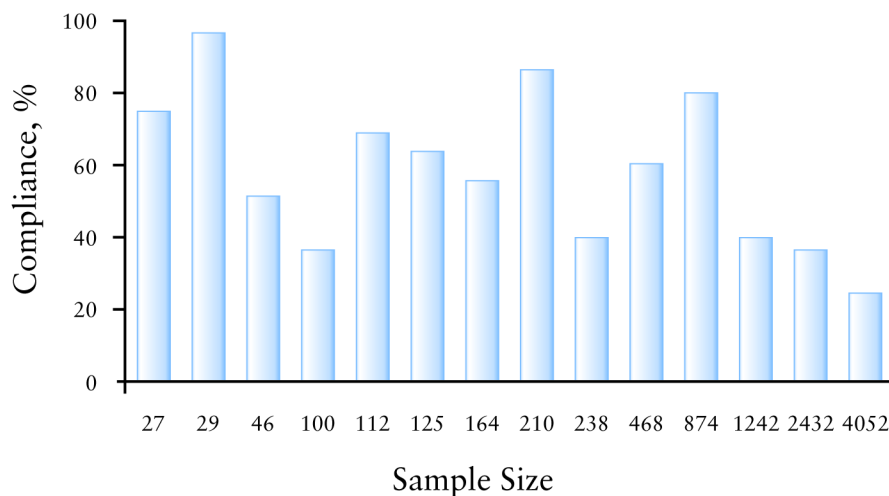
### Adherence in Patients with Depression

Major depression is the leading cause of disability in the United States and world-wide. According to the National Institute of Mental Health, depressive disorders affect an estimated 9.5% of adult Americans 18 years of age and older in any given year (NIMH, 2001), yet adherence to antidepressant medication is generally poor. Reported rates of adherence to medical treatments for unipolar depression varied from 30% to 97% in a recent review of 14 epidemiologic studies (Figure 10) (Pampallona, 2002). Another review found that up to 70% of patients are nonadherent either as the result of missed doses or premature discontinuation (Keller, 2002).



Moreover, depression has a negative impact not only on adherence to therapy but also on outcomes in other chronic conditions, including diabetes and HIV disease (Ciechanowski, 2000; Starace, 2002).

An important factor that may decrease adherence is the delayed onset of action of antidepressants. Patients may need to continue these drugs for two to four weeks or longer to experience benefit; however, side effects are most likely to occur early in therapy. Therefore, the patient is likely to experience side effects prior to relief of symptoms which can lead to early discontinuation (Keller, 2002).



**Figure 10. Adherence to Antidepressant Therapy (Pampallona, 2002).**

Premature discontinuation of antidepressant medication regimens is a major issue (Bucci, 2003). Guidelines from the Agency for Health Care Policy and Research (AHCPR) and the American Psychiatric Society recommend that patients receive antidepressant therapy for at least 4 to 9 months. An adequate duration of antidepressant therapy has been shown to decrease the risk for relapse of depression. In a systematic review, continuing antidepressant therapy was shown to decrease the risk of relapse by 70% (Geddes, 2003). A study of Medicaid patients with depression found that only 30% actually received greater than 4 months of medication within the first 6 months of diagnosis (Melfi, 1998). Many patients do not adequately understand the need for continuing therapy, and may discontinue antidepressant therapy once they begin to feel



#### **MOTIVATIONAL INTERVIEWING-FACT:**

Encourage patients to express concerns.

#### **NOTES:**

better. In many studies, "feeling better" has been the most frequent reason for premature discontinuation of antidepressants (Demyttenaere, 2003).

An array of patient, provider, medication, and societal factors influence adherence to antidepressant therapy. Patient factors that predict good adherence include female sex, marriage, previous use of antidepressants, and high educational status. Among medication-related factors are lack of severe side effects and no relapse. Prescription of medication by a psychiatrist rather than a general practitioner, referral to a private psychiatrist, and nonemergency referral are provider-related factors. Finally, good social adjustment and diagnosis other than personality disorder or substance abuse have been associated with higher rates of adherence (Pampallona, 2002).

**Improving Adherence in Patients with Depression**

As identified in a wide-ranging analysis of interventions, patient education, psychological treatment, and the two efforts combined were substantially more effective than no intervention in improving adherence to antidepressant therapy (Table 13) (Pampallona, 2002). Table 14 summarizes specific recommendations for improving adherence to therapy in these patients (Bucci, 2003)

Contrast, vs No Intervention	Offset	Comparisons, no.	Adherence, %
Education of patient	Drug treatment	1	82 vs 68
Psychological treatment	Drug treatment	1	73 vs 8
Psychological treatment plus education of patient	Drug treatment	1	66 vs 9

**Table 13. Efficacy of Interventions to Improve Adherence to Antidepressant Therapy (Pampallona, 2002).**

Reasons for Nonadherence	Strategies to Improve Adherence
Lack of knowledge regarding the nature of depression	Discuss epidemiology of depression; refer to depression as a medical condition
Guilt associated with diagnosis of depression	Discuss the chemical basis for depression
Need for reassurance and support	Reinforce that depression is treatable; discuss appropriate duration of treatment
Lack of belief in treatment's effectiveness	Discuss efficacy of medications
Belief that treatment regimen is too complex	Reinforce that simplified regimens are available
Belief that treatment does not help with other symptoms associated with depression	Remind patients of the delayed therapeutic effects of antidepressants
Fear of medication's adverse effects	Reinforce that most patients do not have to stop therapy because of adverse effects
Belief that adverse effect will make it difficult to tolerate therapy	Review most common adverse effects; reassure patient that, over time, adverse effects should be less of a problem

**Table 14. Recommendations for Improving Adherence to Antidepressant Medication (Bucci, 2003).**

### ADHERENCE IN HOMELESS PATIENTS

Homeless patients are at high risk for nonadherence to long-term medical therapy because of poor access to healthcare, illiteracy, high prevalence of psychiatric disease and substance abuse, and lack of a fixed address that would facilitate follow-up (Kushel, 2001).

#### *Interventions to improve adherence*

The first steps toward improving medical care and adherence to therapy by the chronically ill homeless are to meet their fundamental needs for housing and food and to address comorbid conditions like psychiatric disease and substance abuse (Teeter, 1999). With the living situation stabilized, specific interventions can be successful. Directly observed therapy, cash incentives for adherence, assertive outreach, close monitoring, encouraging routine participation in healthcare visits, and providing information about medications and side effects have been demonstrated to be effective (Table 15) (Dixon, 1993; Caminero, 1996; Tulsy, 2004; Teeter, 1999).

- Basic needs (eg, food, shelter)
- Directly observed therapy
- Cash incentives for adherence
- Assertive outreach
- Close monitoring
- Encouraging routine participation in healthcare visits
- Providing information about medications and side effects

**Table 15. Interventions to Improve Adherence by Homeless Patients (Dixon, 1993; Caminero, 1996; Tulsy, 2004; Teeter, 1999).**

## INTERVENTION AND CASE MANAGEMENT

### How Effective Are Interventions to Improve Adherence?

In one recent analysis of 33 studies, 49% of interventional programs resulted in statistically significant improvements in medication adherence, and 44% led to significant improvements in treatment outcomes. Almost all of the effective, long-term interventions combined more convenient care, information, counseling, reminders, self-monitoring, reinforcement, family therapy, and other forms of additional supervision or attention. Even the most successful interventions evaluated, however, had relatively modest effects (McDonald, 2002), pointing to the need for new and innovative approaches.

## CONCLUSIONS

Adherence to therapy is essential to an optimal clinical outcome in patients with chronic disease. Shown most clearly for HIV disease, this conclusion is likely true for cardiovascular and psychiatric illness as well. The elderly, adolescents, substance abusers, some racial and ethnic groups, the poorly literate, the homeless, and individuals with HIV or psychiatric disease, are at increased risk for poor adherence to treatment and thus poor outcomes. Although specific patient, disease, and treatment characteristics that negatively affect adherence can be considered in isolation, most patients have multiple risk factors, including complex and poorly tolerated drug regimens, denial of illness, confusion, and physical difficulties that may compromise the proper taking of medications. These factors require an integrated approach by all professionals involved in the patient's care.

Adherence to therapy may be improved by any of a large number of interventions, but the key activity is a patient-provider partnership based on an informed respect for the

patient's autonomy. Although this chapter tends to identify barriers to adherence in certain populations, providers of healthcare must work with individual patients. Since not all patients from a certain age or ethnic group will have the same barriers to adherence, it is extremely important for healthcare providers to communicate with each of their patients and identify individual patient-specific barriers to adherence. This partnership, in turn, will serve as the foundation for other interventions (e.g., education, simplified dosing instructions) aimed at improving adherence.





CMAG

9

Hospital Discharge  
Planning and Adherence  
Counseling to Ensure a  
*Successful Discharge*







# CHAPTER 9:

## HOSPITAL DISCHARGE PLANNING AND ADHERENCE COUNSELING TO ENSURE A *SUCCESSFUL DISCHARGE*

**In this Chapter we will review the following:**

- ✓ Introduce the concept of a *Successful Discharge* and describe information that patients require to ensure a *Successful Discharge*.
- ✓ Discuss why Discharge Counseling and Adherence Messaging are important to the hospital.
- ✓ Describe the Current State of Hospital Discharge Counseling and Medication Knowledge.
- ✓ Discuss the importance of Prescribing Appropriate Evidence-Based Therapies at Hospital Discharge.
- ✓ Provide Examples of Comprehensive Discharge Planning Programs.
- ✓ Describe the Key Elements of Successful Discharge Planning and Adherence Messaging Programs.
- ✓ Discuss the importance of Coordination of Care and Transition to Care Outside the Hospital.



## CHAPTER 9: HOSPITAL DISCHARGE PLANNING AND ADHERENCE COUNSELING TO ENSURE A SUCCESSFUL DISCHARGE

### INTRODUCTION to the concept of a *Successful Discharge*

This section on Hospital Discharge Planning is new to this revision of CMAG. It was recognized that there were unique needs for those working with inpatients that were not adequately addressed in the earlier version of CMAG. In this chapter we will focus on some of the unique needs of hospitalized patients and we will address some of the challenges that case managers and other professionals responsible for discharge planning may face. An important aspect of inpatient discharge planning is the collaboration required between healthcare professionals both within and outside the inpatient facility. Case managers can assume a key role in facilitating this collaboration.

There are a number of challenges in working with inpatients. Hospitalized patients are more acutely ill than those in the outpatient setting. In addition to the effects of acute illness, the patient may also be receiving treatments or medications that may make it difficult to communicate directly with the patient.



Patients that are newly diagnosed may be overwhelmed and have difficulty coming to terms with their condition. They are likely to have a number of medical and social concerns. How will this condition affect my long-term health? How will this condition affect my ability to do the things that I like to do? When will I be able to return to home and work? How will I pay my medical bills?

Patients may be started on new therapeutic regimens upon discharge from the hospital. Patients without adequate education on their outpatient medication regimen are more likely to be nonadherent to therapy (Hope, 2004). These patients may not understand the importance of taking their medications and therefore will not be motivated to follow complex medical regimens. Lack of knowledge and motivation of the discharge regimen is likely to decrease adherence to the discharge regimen and increase the likelihood of readmission (Sokol, 2005).

On the other hand, there are also a number of opportunities with hospitalized patients. These patients are more likely to understand that they have a serious condition that can adversely affect their health. These patients may be more amenable to taking steps to improve their health and avoid additional complications. Some healthcare providers have suggested that hospitalization may represent a "teachable moment" for

**NOTES:**

many patients (American Heart Association, 2005).

For patients that are being admitted for scheduled procedures, there is an opportunity to begin teaching the patient even before the patient is admitted to the hospital. Beginning the educational process before the admission improves patient comprehension and is likely to improve adherence to therapies.

A major limitation facing hospital case managers is the relatively brief period of time that they have to interact with the patients. Hospital based case managers may not be able to follow a patient longitudinally over time, which will limit the opportunity for multiple assessments, planning, and interventions. A key role for inpatient case managers is ensuring that there is appropriate transition of care between the inpatient and outpatient settings. Use of a standardized assessment and plan of care forms may be useful when moving individuals throughout the facility and after discharge from an inpatient setting.

Case managers in a hospital setting may also only work with a limited number of the inpatients. These patients may be identified by severity of illness, disease states, social issues, or healthcare provider initiated consultations. Since not all patients fall under the purview of case management, it is important that case managers work closely with other healthcare professional and administrators to help identify which patients would most likely benefit from case management services. This would involve educating other healthcare providers such as nurses, physicians and therapists on what resources case managers have available and what services they can offer. Building a multi-disciplinary team approach for referrals into case management is essential for identifying those individuals who can benefit from case management interventions.

There are a number of steps that should take place during the inpatient stay to ensure appropriate transition to community based care. We have coined the term *Successful Discharge* for patients that receive appropriate discharge planning services. Some of the steps included in a *Successful Discharge* are:

- Educating the patient on their disease process and factors that can influence their condition.
- Ensuring that the patient understands and has the resources to manage their disease after discharge from the hospital.
- Ensuring that the discharge will be "safe" for the individual patient.
- Ensuring that the patient understands the plan for transition of care into the post discharge setting.
- Ensuring that the patient has access to the follow up care and therapy.

Patients that receive the appropriate steps that lead to a *Successful Discharge* will be more likely to manage their disease outside the hospital. This will decrease the chances of the person needing to be readmitted to the hospital for acute exacerbations of chronic conditions and complications related to procedures. Since hospitalization is frequently the most expensive part of the treatment, this should help control overall healthcare expenditures.

Case managers can take a leadership role in ensuring that all patients discharged from their institutions receive information on the importance of adhering to therapy. Since case managers will generally not be involved with all inpatients, appropriate hospital discharge planning will take a considerable amount of coordination with other healthcare professionals. It will also require support from hospital administration to ensure that appropriate emphasis is placed on discharge planning and to allocate appropriate personnel and additional resources to accomplish this task. A *Successful Discharge* is the responsibility of the entire healthcare team.

This chapter is written from the perspective of services the patient needs to receive rather than what services should the case manager provide. This is because of the interdisciplinary nature and broad range of services that a patient needs to receive in order to ensure a *Successful Discharge*. Also, each practice setting has its own unique patient type, staffing needs, and administrative challenges. However, all patients regardless of disease state or setting should receive a needs assessment that would identify specific barriers for the successful and timely discharge. A great tool that all the disciplines can utilize to support the planned treatment is the documented case management care plan. This usually captures the specific timed interventions, who is responsible, when, where, and the expected completion. It can also serve as a communication tool for the entire team. This tool is invaluable to support a *Successful Discharge*.

### Information that patients require to ensure a *Successful Discharge*

Patients that are educated about their disease and understand the benefits of treatment are more likely to become involved in treatment decisions and remain adherent to therapy (Krueger, 2003). There is a certain basic level of education that all patients or their caregivers should receive prior to hospital discharge. Patients need to have a basic understanding of their condition that led to hospitalization and what this condition will mean to their long-term health. Patients need to understand what they need to do to treat their condition once they are released from the hospital (e.g., special diet, exercise program, medications, social service needs, home health assessments).

Many patients will be started on new medication regimens during their hospitalization and they should understand the basic information about

their new regimen prior to hospital discharge. Medications that are newly started during hospitalization need to be reconciled with the medications that the person was receiving prior to their admission (Institute for Healthcare Improvement, 2005). The patient should understand what to do with the medication that they were taking prior to admission. Are they supposed to continue the medications that they were on prior to admission? Do any of the new medications replace medications that they were taking previously?



Patients also need to know how to monitor their disease in the outpatient arena. They need to understand what signs and symptoms to monitor for as an outpatient and what to do if a complication arises. They need to know what resources are available in the outpatient setting and who can address their individual questions and concerns. It is also important to identify and address potential barriers to treatment from the patient's perspective. A list of potential questions that should be addressed by with patients prior to hospital discharge is listed in Table 16.

Consistent and high quality discharge planning will only take place if the hospital places significant emphasis and devotes appropriate resources to the process. Although patient education is the responsibility of all healthcare professionals that touch the patient, someone or some service is going to have to take responsibility to ensure that the processes are completed prior to discharge. Clinical pathways or disease specific order sets that specifically incorporate instructions for patient education may increase the likelihood of patients receiving appropriate education. If patient education is assigned to a specific service (e.g., Nursing, Case Management, Discharge Planning), it is important that this service has the support of other services and healthcare professionals to ensure that the needs of the patient are met. No one person or specific group of healthcare professionals is going to possess sufficient knowledge to address all issues that may arise in the discharge planning process. The multi-disciplinary team approach is extremely important. The goal of this the team is to provide efficient, effective, safe and quality care, based upon the individual needs of the patient. The case manager should assume a key role on this team and in facilitating the discharge planning process.

The institution will only be able to evaluate how they are doing with the discharge planning process and patient education if there is a Continuous Quality Improvement process in place. This begins with appropriate documentation of discharge planning services and patient education in the



patient's medical record. An example of a checklist that can be used to document interventions can be found at the end of this chapter. Information on the discharge planning process needs to be collected and analyzed on a regular ongoing basis.

1. What is wrong with me and what will this condition mean to my long-term health?
  - How will this condition affect my ability to function?
  - Does my condition make me more susceptible to other health problems?
  - What are the factors that make me more susceptible to my condition?
  - What are the factors that would decrease the chance of my condition recurring or getting worse?
2. What do I need to do when I get home to treat my condition?
  - What follow-up appointments or tests do I have scheduled as an outpatient and when are they scheduled?
  - Do I need to return for follow up visits on a regularly scheduled basis?
  - Do I have transportation to get to my appointments?
  - Do I have any special diet needs?
  - Do I have any restrictions on exercise?
  - Can I return to work or my usual activities?
  - What medications do I need to take when I get home and are there any medications that I was taking prior to admission that I need to stop?
    - What are the medications for and what are the benefits of taking these medications?
    - How much do I need to take each time and when do I need to take it?
    - How long do I need to continue this medication?
    - What are the common side effects of the medication and is there anything that I can do to decrease the chance of the side effects occurring?
3. Who should I contact if I have questions regarding my treatment after I am discharged?
4. What are things that I need to watch for to know if my condition is getting worse and what should I do if these occur?
5. How will I pay for my outpatient medical services?
  - Are the treatments and tests scheduled covered by my insurance?
  - Are the medications prescribed covered by my insurance?
  - Do I have the ability to receive and pay for these services if they are not covered?
  - Are there programs available to help me pay for medical services and treatments?

**Table 16. Questions to be addressed with patient or healthcare provider prior to hospital discharge.**

Data should be analyzed and reported by unit, service line, and provider as this will assist in process improvement efforts within the facility. Reports on the discharge planning process need to be presented back to the healthcare professionals involved with the process in an open and non-judgmental manner. Only by sharing and evaluating this information can the hospital identify potential areas for improvement.

### Patient Education

Patient education is more likely to be effective if it is integrated into the hospitalization rather than begun after the patient is scheduled for discharge or when they are walking out the door of the hospital. Patients at the time of discharge may be more focused on simply getting out of the hospital and returning to the home environment. For scheduled admissions or elective procedures, patient education should begin prior to hospitalization. Education is also more likely to be effective if it can be presented to patients as small packets of information that do not overwhelm the patient. Education that is provided prior to discharge will also allow the person time to digest the information and formulate questions regarding treatment.

There is no one best way to provide education as different patients have different learning styles and assimilate information differently (Dent, 2000, Vanderberg-Dent, 2000). Hospitals may also choose to educate patients using written materials, videos or interactive web-based programs. Materials that the patient can take home with them may be useful in reinforcing education provided during the hospitalization. These materials may also be able to be shared with other family members or other persons involved with the patient's care. Although written and audiovisual materials can be extremely useful, they should not substitute for personal interaction with a healthcare provider. Written and audio material will not answer the patient's specific questions and they do not assess the patient's impression and understanding of the information provided.

Some institutions may provide education for a number of patients at once in a group or classroom setting; where as, others may choose to provide information one on one at the bedside. How the education is provided will likely depend on such factors as how many patients with similar conditions are in the institution at any one time, the length of hospitalization, and are the patients able to participate in a group setting. Group education sessions can be effective and may be more efficient than individual education, however, patients that receive education in a group should be given the opportunity to ask questions in private that they may not feel comfortable asking in front of other patients.

Patient education should ideally be an exchange of information between the patient and the healthcare professional. The healthcare professional should assess what the patient already understands about their medical condition and its treatment. Education that is tailored to the specific knowledge and needs of the individual patient is more likely to be effective. When new information is provided, it is important to assess the patients understanding and impression of the new information



(Bodenheimer, 2005). For additional information on patient communication see Chapter 10 on Motivational Interviewing and Health Care Behavior Change.

### Health Literacy

It is important to consider 'Health Literacy' when providing written or other health education materials to patients. Health literacy is the patient's ability to read, understand, and effectively use basic medical information and instructions. Patients with a low level of health literacy are less likely to comply with treatment and are at more than twice the risk for hospitalization. Almost one-third of the people in the US are at risk for low health literacy (Partnership for Clear Health Communications). Patients with low health literacy skills may be too embarrassed to admit that they have problems reading the information or understanding instructions. Additional information on tools for assessing health literacy can be found in Chapter 3 on Health Literacy.

It is also important to consider the individual's cultural diversity as well as their primary language when providing written instructions. Providing discharge instructions in English will not be useful to a patient that may only be literate in another language.

There are a number of things that can be done to minimize the issue of low health literacy:

- Create a trusting environment in which patients feel comfortable to ask questions.
- Use plain language and avoid technical language and medical jargon.
- Do not use acronyms; "avoid alphabet soup."
- Use visual models to help illustrate the problem or condition.
- Assess the patient's level of understanding of the information provided.

Whenever information is provided to a patient, it is important to assess the person's understanding of the information provided. Having the patient 'teach back' the information provided is one method of assessing the individual's understanding of the information. If there are specific tasks that a patient needs to perform such as administering an injection or checking blood glucose, it is important to have the patient demonstrate these skills prior to discharge. It may be necessary to follow up with home health support to reinforce the discharge plan and teaching skills.

Lastly, it is important to assess the patient's view of their condition and treatment options. Patients are more likely to comply with the treatment regimen prescribed if they believe that they actually have the disease, it is serious, and they are susceptible to complications from the disease. Those patients that are in denial of their diagnosis are likely to be less interested in pursuing treatment options. Patients may sometimes view their disease as resulting from non-medical causes. Patients may sometimes believe that their disease is a retribution for prior negative actions in their life. Therefore, it is important to uncover the patient's belief regarding their disease as it may represent an important barrier to effective treatment.

Another factor that will influence adherence to therapy is the patient's opinion of the treatments being prescribed. Patients are more likely to be adherent to therapy if they believe that the treatments offered will actually be effective in treating their disease and decreasing their risk for complications (Vermeire, 2001).

### **Why discharge counseling and adherence messaging are important for the hospital**

Appropriate discharge counseling is consistent with the delivery of high quality patient care. Besides just 'wanting to do the right thing' there are a number of other pragmatic reasons for hospitals to devote resources to discharge counseling and adherence messaging. These include but are not limited to accreditation, competitive environment, and financial considerations.

#### Accreditation

There are a number of quality standards that hospitals must meet in order to be accredited by external organizations. Some of the organizations responsible for setting standards and accrediting hospitals include the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), the National Committee on Quality Assurance (NCQA), and the Centers for Medicare and Medicaid Services (CMS). Certain institutions such as the Veteran's Affairs Medical Centers may also be required to meet internal standards. Hospitals may be required to meet these standards in order to contract with Medicare, Medicaid, Managed Care Organizations, or other insurers to provide patient services and to receive reimbursement.

JCAHO standards currently require that discharge planning occur throughout the hospitalization. In recent years JCAHO has shifted from administrative standards (policies and procedures) to performance based standards. Performance based standards look at the percentage of patients that receive certain services consistent with evidenced based guidelines. Most hospitals undergoing JCAHO accreditation will need to report on 'core' performance based standards specified by JCAHO (Acute MI, Heart Failure, Community Acquired Pneumonia, Pregnancy and related conditions, Surgical Infection Prevention) (JCAHO, 2003).

In addition to the above requirements, JCAHO has also recently required hospitals to implement programs to reconcile all medications orders at all interfaces of care including admission, transfer between wards and services, and discharge from the hospital. Medication reconciliation is a formal process to evaluate patient's medication orders at all transition points of care and resolve discrepancies. A comprehensive discharge planning process that includes a review of the medication with the patient or caregivers is a step towards meeting this accreditation standard. Medication reconciliation is one of the key initiatives recommended by the Institute for Healthcare Improvement (IHI) to enhance patient safety and decrease deaths due to medication errors. Additional information on Medication Reconciliation can be found on their website at [www.ihl.org/IHI/Programs/Campaign](http://www.ihl.org/IHI/Programs/Campaign).

CMS is in the process of implementing hospital standards through its Hospital Quality Initiative. CMS is currently collaborating with a number of public and private sector organizations such as the Hospital Quality Alliance, the National Quality Forum, and JCAHO to develop their standards. Hospitals can currently report seventeen hospital quality measures in four disease areas (Acute Myocardial Infarction, Heart Failure, Pneumonia, Surgical Infection Prevention). Quality information submitted to CMS is available for public viewing on the CMS Hospital Compare web site [www.hospitalcompare.hhs.gov](http://www.hospitalcompare.hhs.gov). Reporting on CMS quality standards is currently voluntary but hospitals that do not submit information on quality indicators will receive decreased reimbursement for care (CMS, 2005).

Examples of quality indicators specific to hospital discharge are listed in Table 17. Hospitals currently have some flexibility in choosing disease states and reporting standards and not all hospitals are currently reporting on all standards. However, the number of disease states for which hospitals will be required to report on is likely to increase in the future.

Disease	Standard	Accrediting Organization
Heart Failure	ACEI at discharge	JCAHO, CMS
	Comprehensive Discharge Instructions	JCAHO, CMS, VA
Acute MI	ACEI for Systolic dysfunction	JCAHO, CMS
	Beta-Blocker at discharge	JCAHO, NCQA, CMS, VA
	Aspirin at discharge	CMS, VA
	LDL cholesterol goal at follow-up	NCQA, VA
	LDL cholesterol < 100 mg/dl	NCQA
Community Acquired Pneumonia	Pneumococcal vaccine at discharge	JCAHO, CMS

**Table 17. Examples of Disease Specific Performance Based Standards Related to Discharge Planning.**

### Competitive Environment

Most hospitals compete against other hospitals in their community for patient admissions. Since hospitals have high fixed overhead (building maintenance, equipment costs, personnel), they generally are more cost-efficient when they are near their total bed capacity (assuming that the average length of stay for DRGs are within expected norms). In a competitive environment, hospitals seek to stand out in their communities by providing exemplary care and maintaining a high level of patient satisfaction. Many hospitals regularly conduct patient satisfaction surveys post-discharge to assess how they are currently doing and to identify opportunities for improvement. Although patient satisfaction may be influenced at many points during the

hospitalization, the discharge process is one of the last points of contact with the patient. If the discharge process is done poorly or haphazardly it is likely to play an important role in forming the patient's opinion about the hospital.

Also, patients and health care payers can now easily access and compare quality information about hospitals in their community. One source of consumer information that is readily accessible is the CMS-sponsored Hospital Compare web site [www.hospitalcompare.hhs.gov](http://www.hospitalcompare.hhs.gov). Another source of information that consumers and payers can readily access is Quality Check available on the JCAHO web site [www.jcaho.org/quality+check/home.htm](http://www.jcaho.org/quality+check/home.htm). Consumers using these sites can readily download and compare hospitals that provide care in their communities. Hospitals that perform poorly on quality indicators may have a difficult time attracting patients.

### Financial

Medicare and most insurance companies reimburse hospitals at a fixed amount based on patient diagnosis and co-morbidities (i.e., diagnostic related group or DRG). Since there is a fixed payment based on the DRG, hospitals are incentivised to quickly and efficiently move patients from an inpatient to an outpatient setting. However, patients that are discharged too quickly or without proper education may experience complications or relapse and require readmission to the hospital. Readmissions for the same diagnosis that occur shortly after discharge may be considered by the payer as part of the initial admission and the hospital may not receive any additional reimbursement. Thus, for a hospital to be financially successful, they must discharge patients in a timely and medically safe manner while trying to avoid early readmissions that may not be reimbursed. Appropriate patient education and adherence messaging is one way for institutions to decrease readmissions.

Appropriate discharge planning will help free up additional hospital beds and avoid back ups in such critical areas as Emergency Rooms, ICUs, and Surgery. Hospitals without available beds may need to divert potential admissions to another healthcare system, resulting in a loss of revenue to the hospital. Inadequate or untimely discharge planning may prolong the patient's hospitalization while needed referrals or equipment is obtained. Case managers can help facilitate the timely discharge home or transfer to appropriate post-acute care facilities, and coordinate the post acute care needs of the individual. Case managers also can assist with facilitating the required referrals to appropriate outpatient physician specialists and/or care providers. Many times the case manager is responsible for initiating a referral for additional skilled services through an appropriate home care provider (Simmons, 2005).

Discharge counseling with appropriate adherence messaging may also help prevent hospital admissions. Hospitalization rates were significant-



ly lower for patients with chronic diseases with better medication adherence (Sokol, 2005). Another study found that non-compliance with medications was found to be a factor in one-third of patients admitted to the hospital for adverse drug reactions (McDonnell, 2002). Avoiding hospitalizations will be especially important to integrated healthcare systems that are responsible for the total cost of patient care.

#### NOTES:

#### Current State of Hospital Discharge Counseling and Medication Knowledge

- Less than 50% of patients could state their diagnosis.
- Less than 50% of patients could list all their medications.
- Less than 25% of patients could state common side effects and what to expect from their medications.
- Patients taking three or more medications were more likely to have problems with medication knowledge (King, 1998, Makaryus, 2005).

In a study in the elderly, 38% of patients surveyed did not have a complete understanding of how to take their medications. Those with the poorest understanding of their medications admitted to being more non-adherent to their medication regimens. Patients that linked their medication taking to daily activities such as meals or bedtime were more likely to remain adherent (Spiers, 2004).

Patient's knowledge of their drug regimen has consistently been shown to be an important predictor of medication adherence yet we frequently fail to educate patients on discharge from the hospital. A national survey of pharmacy practice in hospital settings found that medication counseling was relatively infrequent. Nearly three fourths of hospitals reported that only 1 to 25% of patients received medication discharge counseling (Pederson, 2004). How can we expect patients to be adherent to their medications if they don't even understand them?

Current evidence also suggests that we are also doing an inadequate job of educating patients on other aspects related to hospital discharge. The JCAHO performance measure for Heart Failure specifies six areas in which a patient should receive discharge counseling. These include



providing information on diet, activity level, follow-up appointments, weight monitoring, symptom management and written instructions. In institutions participating in the JCAHO pilot project, the mean rate of institutional compliance with this discharge counseling standard was only 28%. At many sites compliance with the discharge counseling standard had the worst performance of any of the standards evaluated and presents an opportunity for improvement (JCAHO, 2002).

### Prescribing of Appropriate Evidence-Based Therapies at Hospital Discharge

Another issue related to discharge planning is the prescribing of appropriate evidence-based therapies at hospital discharge. Studies evaluating the prescribing of appropriate therapies have generally demonstrated that compliance with the prescribing of medications is poor. Investigators in one study found that only 46% of patients discharged from the hospital with an acute myocardial infarction (MI) were prescribed a Beta-Blocker and that only 80% of patients given a prescription actually filled them (Butler, 2002). In a large retrospective analysis of more than 138,000 patients discharged with acute MI, a lipid-lowering regimen was only prescribed in 31.7% of the patients (Fonarow, 2001).

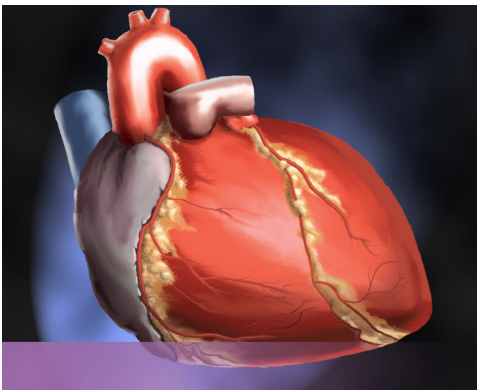
The prescribing of appropriate therapies at hospital discharge with adherence counseling has been demonstrated to be an extremely important step in the care of the patient. It not only improves the chance that the patient will receive the medication but also increases adherence and results in improved clinical outcomes. In a post-MI Beta-Blocker study, patients that were prescribed a Beta-Blocker at discharge were almost 16 times more likely to receive this life-saving therapy compared to the group of patients not discharged on the medication (Butler, 2002). Patients discharged on a statin after coronary events are significantly more likely to remain on therapy if the therapy was initiated prior to discharge. In one study, 77% of patients that were prescribed a statin at discharge were still taking a statin at a three year follow up compared to 40% that were not prescribed a statin at discharge. Additionally, patients that were prescribed a statin at discharge had a significantly reduced overall mortality rate at the end of the study. (Muhlestein, 2001).

It is extremely important that appropriate medications are initiated before discharge. Many times the patient is being treated in the hospital by a specialist and then discharged to their primary care patient provider. The primary care provider in many cases assumes that the specialist initiated the appropriate therapies for this patient and will not change or add to therapies initiated by the specialist. There are also patient specific factors associated with in-hospital initiation of therapy that may motivate the patient to take medication. Patients suffering an acute event may suddenly realize that there may be serious consequences to their disease

and become motivated to take action. The patient may believe that medications started in the hospital after acute events are more important to prevent the recurrence of that event than those started in an outpatient setting.

### Examples of Comprehensive Discharge Planning Programs

There is an accumulating body of evidence that hospital efforts that focus on discharge planning and patient education can make a real difference. This section will provide examples from programs that have demonstrated significant improvements in patient care. The end of this section will review some of the key strategies that hospitals have found to be important in implementing a successful program.



#### *Example in Cardiovascular Disease*

Many of the programs aimed at improving compliance with treatment guidelines have been in cardiovascular disease (Acute Coronary Syndromes, Congestive Heart Failure). The existence of evidence-based guidelines that have a broad basis of clinical support has

facilitated development of programs in this area. Also, a number of the hospital quality indicators focus on cardiovascular disease.

One of the first programs to demonstrate significant improvement in the care of patients was the Cardiac Hospitalization Atherosclerosis Management Program (CHAMP). This program focused on implementing appropriate medical therapy and providing comprehensive risk reduction counseling for inpatients with coronary artery disease. The treatment algorithm was developed based on current guidelines for the treatment of patients with coronary artery disease. CHAMP provided counseling on smoking cessation, diet, and exercise by physicians and nurses throughout the hospital stay. This program was able to demonstrate a significant improvement in the utilization of evidenced-based therapies. Table 18 summarizes the improvement in the utilization of recommend therapies for two years pre and post-implementation of the CHAMP program. All improvements were highly statistically significant and persisted after discharge from the hospital.

Standard	Pre-CHAMP	Post-CHAMP
Aspirin at Discharge	78%	92%
Beta-Blocker at Discharge	12%	61%
Admit Lipid Panel	5%	68%
Statin at Discharge	6%	86%

**Table 18. Improvement in the In-hospital Implementation of Recommended Therapies Pre and Post implementation of the CHAMP Program (Fonarow, 2001).**

The CHAMP program demonstrated not only improvement in the performance indicators but also improvement in patient outcomes. A number of cardiovascular end-points (recurrent MI, heart failure, cardiac mortality) as well as total mortality were significantly reduced with implementation of the CHAMP program (Fonarow, 2001).

The American Heart Association has designed the 'Get with the Guidelines' program to increase treatment compliance to published guidelines for the treatment of Acute MI. Many of the concepts in this program are similar to those in the CHAMP program. 'Get with the Guidelines' was recently piloted at 24 hospitals in 1738 patients with coronary artery disease. The sites involved with the pilot project were able to demonstrate significant improvement in smoking cessation counseling, lipid measurement, and lipid treatment. This project demonstrated that a significant improvement in guideline adherence could be achieved in large academic as well as small community hospitals (LaBresh, 2004).

Another cardiovascular disease where discharge planning has been shown to make a difference is Congestive Heart Failure (CHF). CHF is a chronic debilitating condition characterized by frequent hospital readmissions. CHF is the leading DRG under Medicare for acute hospitalization and re-hospitalization. Approximately 50% of the patients that are admitted to the hospital for congestive heart failure will be readmitted within six months and readmissions have increased since the introduction of the Medicare Prospective Payment System. High readmission rates may reflect the lack of clinical readiness to discharge, inadequate discharge planning, and the lack of transition from hospital to community based care. The chronic progressive nature of this disease combined with high rates of readmission make CHF a prime target for comprehensive discharge planning and post-discharge support.

A recently published meta-analysis that evaluated the effectiveness of discharge planning in CHF found that patients that received this intervention had a 25% lower risk of admission to the hospital. There was also a trend towards lower all-cause mortality for patients that received discharge planning and significantly greater improvement in Quality of Life scores. Analysis of studies that reported medical costs found that discharge planning produced significant cost savings even after factoring



in the cost of the intervention. The average savings in medical costs for patients that received discharge planning was \$536 per patient per month while the average cost of administering the intervention was \$80.76 per patient per month (Phillips, 2004).

Another recently released study from Intermountain Health Care evaluated the effect of a comprehensive Discharge Medication Program (DMP) in cardiovascular patients on a number of quality indicators and clinical outcomes. One key element included in this program was the introduction of comprehensive discharge order sets, which clearly indicated the appropriate medications and contraindications. This study was able to demonstrate a significant improvement in the prescribing of targeted medications as well as demonstrate a significant reduction in hospital readmission rates and overall mortality (Lappe, 2004).

### *Examples in Psychotic Illness*

Another disease state where discharge planning and patient adherence messaging has shown to make a difference is in psychotic illness. Patient relapse is extremely common in patients with schizophrenia and many studies have shown that nonadherence to medication is the most powerful predictor of relapse. Nonadherence to therapy may be responsible for up to 50% of hospital admissions (Perkins, 2002). Inadequate discharge planning and coordination of care are important factors that increase the likelihood of a patient being nonadherent to therapy (Lacro, 2002).

It has been found that patient interventions that only focus on the patient's knowledge of the medications have not been effective in improving adherence to antipsychotic medications. Successful interventions are more likely to focus on the patient's attitudes and beliefs about the medication. One example of an intervention that has been effective in improving adherence to therapy is known as Compliance Therapy. Compliance Therapy uses a combination of cognitive-behavioral techniques and motivational interviewing. This technique helps the patients weigh the positives and negatives of treatment in terms that are meaningful to them. Compliance Therapy has shown to increase patient's adherence to medication therapy. Patients that received Compliance Therapy also had better global social function and were less likely to be readmitted to the hospital (Zygmunt, 2002).

### Key Elements of Successful Discharge Planning and Adherence Messaging Programs

There are a number of key components that many of the successful discharge programs have in common. Some specific steps recommended by the AHA for initiating the 'Get with the Guidelines' program are listed in Table 19. In order for quality improvement programs to be successful, there needs to be a shared goal to improve quality among all health care

**NOTES:**

providers involved in the patient care. Another important step in implementing successful discharge planning pathways is to gain the support of the hospital administration. The hospital administration needs to be convinced that implementing these pathways can actually improve quality indicators and patient outcomes and can be accomplished at a reasonable cost. The Intermountain Health Medication Discharge Planning program is a good example of program that was able to improve patient quality and outcomes and was implemented without additional hospital personnel (Lappe, 2004).

<b>Recruit a champion.</b>
<b>Build a multidisciplinary hospital team.</b>
<b>Review baseline data.</b>
<b>Develop protocols and order sets that include appropriate evidence-based therapies.</b>
<b>Conduct hospital staff conferences to introduce process and gain buy in.</b>
<b>Continue data analysis and report results back to hospital staff on a regular basis.</b>
<b>Evaluate data and look for opportunities for improvement.</b>

**Table 19. Steps recommended by the AHA 'Get with the Guidelines' program for initiating a discharge-planning program.**

Another important step in the implementation of discharge planning programs is the development of standardized protocols or order sets. This works best for relatively common conditions with well-established evidence-based treatment guidelines. Physician leadership and support in the development and roll out of these programs is also essential. Treatment guidelines will be of little use if the treating physicians do not initiate or follow the guidelines. Developing hospital based guidelines for the treatment of a condition will make it more likely that patients receive appropriate treatments and that contraindications to recommended treatment are documented (Fonarow, 2001, Lappe, 2004).

Discharge planning programs should also address patient education. The plan should discuss what general education should be provided, who is going to perform the education, and when during the course of hospitalization the education will be carried out. The discharge program should also address the documentation of education conducted and significant issues that are raised by the patient during the process.

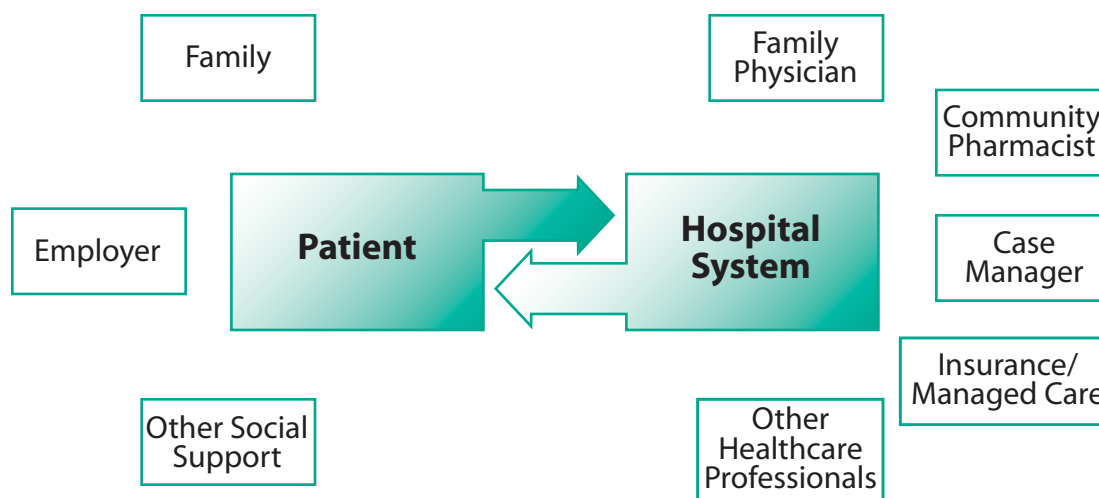
Another aspect not to be overlooked when developing a discharge plan is

to keep the patient engaged in treatment decisions. Information that is presented to the patient needs to be culturally sensitive and respect the patient's values and beliefs. Patients that do not have buy-in to their treatment plan are unlikely to remain adherent to recommended therapies.

In order to measure the success of the program, quality data needs to be collected and analyzed. Prior to initiating the program, the quality indicators for the program need to be determined. These should likely include any external quality indicators that the hospital will be using for accreditation (e.g., JCAHO, CMS) to avoid duplication of efforts. Data should then be collected prior to initiation of the program to determine the baseline level of performance. The data then needs to be collected, evaluated and presented to the healthcare providers and administrators involved with the program on a regular and frequent basis. This will allow those involved with the program to see the effect of the program. It will also allow for critical evaluation and determining opportunities for quality improvement.

#### Coordination of Care and Transition of Care Outside the Hospital.

There are many individuals that may be involved in the discharge planning process (See Figure 11). These individuals can be divided into lay individuals that provide support for the patients and those that are involved with the provision of healthcare services.



**Figure 11. Patient Support and Health System Factors Associated with a Successful Discharge.**

Patient support systems may consist of family and friends that may directly interact with and provide support for the patient. Involving these individuals in the treatment of the patient's condition may greatly increase the chance of success. This may be especially important if the interventions involve lifestyle modification. Patients may be dependent on other members of the family for preparation of their meals. It will be extremely difficult for a patient to quit smoking if other members of their family continue to smoke. In some cases, family members may also serve as the patient's caregiver so it is essential that they have an understanding of the patient's medical condition and treatment regimen. Additional information on evaluating the patient's support systems can be referenced in Chapter 6 on Social Support.

The patient's employer may be able to provide additional resources such as disease management programs or programs that promote health & wellness. The medical condition may also alter the patient's ability, temporarily or permanently, in performing their current job responsibilities. This may create an additional financial and emotional stress for the patient.

(Note: The patient must provide consent before any healthcare information is shared with family members, friends, other support individuals, or employers in order to maintain patient confidentiality and for the institution to remain compliant with federal and state law.)

Once a patient leaves the inpatient setting they need to connect with care as an outpatient. Many patients will require follow up with a primary care physician who may not have been involved with their inpatient treatment. It is important that the patient's primary care physician receive a complete and timely account of the inpatient stay so that they can provide appropriate follow up and treatment. The patient may also need to receive services from other healthcare providers (physical therapist, dietitian, disease educators, psychologists) that will also require access to the patient's medical history. The case manager is integral in this phase of the discharge planning. They are responsible for handing off the expected treatment plan to outpatient case managers for appropriate follow up interventions.

Patients frequently leave the hospital with new medications that they were not receiving prior to admission. The patient will need to have these new prescriptions filled and learn how to take their new medications. The patient should understand the purpose of each of these medications and know how to monitor for the side effects. Since many medications can be used to treat a number of different conditions, the pharmacist may be unable to provide specific information on why a specific medication was prescribed unless they have additional information on the patient's medical history.

Patients without healthcare insurance or the financial resources to pay for needed services and medications present an additional challenge. These patients may need to be connected to case management or social services to help them enroll in programs that may offer financial assistance for their expenses (e.g., Medicaid, locally funded indigent care programs, Pharmaceutical Manufacturers programs for Medications).

#### **NOTES:**

Even for patients with healthcare insurance, the outpatient services that are ordered may not be covered. Some outpatient treatment such as referral to specialists or follow-up procedures and tests may require prior authorization and coordination with in-network providers. Another potential problem occurs when the physician ordering the discharge medications is not familiar with what medications are covered by the patient's health plan. This may leave the patient either having to pay the complete cost of the medication or not receiving the medication at all.



Patients that are recently discharged from the hospital may not be familiar with or simply be too ill to navigate through the healthcare maze. Case managers are key to assisting patients with the transition from the inpatient to the outpatient setting. Coordination of care between the inpatient and outpatient setting is extremely important in assuring that the patient receives appropriate care after discharge from the hospital. Lack of coordination of care places the patient at risk for relapse and readmission back to the hospital. Educating and empowering the individual to anticipate needs post discharge, as well as to plan for these needs, will improve the individual's adherence to treatment plans.

Patients at high risk for nonadherence to therapy should be transitioned to outpatient case management if possible. One way of identifying patients at risk of nonadherence to therapy is to do a complete assessment of the knowledge and motivation using the tools in CMAG. For patients that have already been initiated on therapy, an assessment could be performed using the Modified Morisky Scale. Another alternative when time is limited is to do an abbreviated evaluation of motivation and knowledge (e.g., Readiness Ruler, subjective impression of how well the patient understands their disease and treatment). Patients that are found to have low motivation, low knowledge or both should be considered for referral to outpatient case management.

# SUCCESSFUL DISCHARGE PLAN

For Successful Transition to Outpatient Care

Patient Addressograph Info

	Task	Assessment	Date	Reviewer	Notes
Admission	Patient has the ability to read, understand and act on health information.				
	Patient understands the reason for admission.				
	<u>Medication Review:</u> Name and instructions for use Reason for use Benefits of medication Side Effects and monitoring Adherence assessment Technique review (i.e. inhaler use) OTC product use				
Inpatient Stay	Task	Assessment	Date	Reviewer	Notes
	Patient understands his/her basic medical condition and what factors can influence it.				
	<u>Medication Review:</u> Name and instructions for use Reason for use Benefits of medication Side Effects and monitoring Adherence assessment Technique review (i.e. inhaler use) OTC product use				
Discharge	Task	Assessment	Date	Reviewer	Notes
	Patient understands their basic medical condition and what it means to their long-term health.				
	<u>Medication Review:</u> Name and instructions for use Reason for use Benefits of medication Side Effects and monitoring Adherence assessment Technique review (i.e. inhaler use) OTC product use				
	Self-monitoring of Condition, Therapy or Treatment Recovery				
	Lifestyle Review: Exercise, Diet, Smoking				
	Support / Follow-up Contacts				
	Patient understands transition plan for care in post discharge setting.				
	Patient perceived barriers to treatment				



CMAG

10

Motivational  
Interviewing and  
Health Behavior Change







# CHAPTER 10:

## MOTIVATIONAL INTERVIEWING AND HEALTH BEHAVIOR CHANGE

**In this Chapter we will review the following:**

- ✓ The Principles of Motivational Interviewing.
- ✓ Understanding the differences between the Psychological and Biomedical Approach to Patients.
- ✓ The use of Elicit-Provide-Elicit when interacting with patients.



## CHAPTER 10: MOTIVATIONAL INTERVIEWING AND HEALTH BEHAVIOR CHANGE

This chapter of CMAG is intended as a summary of motivational techniques that can be reviewed by the case manager to assist the patient with self-motivating behavior change. It is essential that the practitioner become thoroughly familiar with the concepts and techniques of motivational interviewing to maximize success in moving patients to adherence intention quadrant IV and achieving long-lasting improvements in the patient's willingness and ability to adhere to prescribed treatment plans. In an effort to facilitate learning of these concepts, an interactive CD set on motivational interviewing is provided with CMAG (Berger, 2004). Additionally, the case manager is strongly encouraged to obtain and study the following textbook, which will greatly assist in implementing concepts discussed here.

Rollnick S, Mason P, Butler C, *Health Behavior Change - A guide for practitioners*. Edinburgh, Scotland: Churchill Livingstone; 1999.

### An Important Note to Remember on Motivational Interviewing and Patient Interactions

One objection that healthcare professional managers often have to the concept of motivational interviewing is that it takes a potentially significant amount of counseling time to engage in the process with patients. Associated with this is the concern that such interactions will result in the patient wanting to talk all day about all sorts of problems and issues.

Although a valid concern, it is indicative of a deficiency in the health professional's understanding, technique, and application of motivational interviewing. The case manager needs to remember *at all times* that motivational interviewing is a *directive* technique. Motivational interviewing is not an open-ended psychotherapeutic tool to bring about lifestyle change. Because it is a *directive* technique, the case manager bears the responsibility to keep sessions "on topic," with the goal of arriving at mutually agreed-upon behavioral changes and a plan to implement those changes that will improve the patient's ability to self-manage illness.

When patients go "off topic" in motivational interviewing sessions, it is perfectly acceptable for the case manager to refocus the session so that the objectives of the process can be achieved without delay.

### MOTIVATIONAL INTERVIEWING-FACT:

Negotiation describes the merging of the agendas of practitioner and patient, in which views about behavior change are openly exchanged in a respectful manner.

### NOTES:

**MOTIVATIONAL  
INTERVIEWING-  
FACT:**

Negotiation is a collaborative conversation about behavior change.

**NOTES:**

## Concepts

Motivational interviewing is a patient-centered method of communicating with the goal of enhancing a person's internal self-motivation to change. The technique is directive in nature and is designed to facilitate the patient's exploration and resolution of reasons for ambivalence and resistance (Miller, 2002).

In the truest sense, motivational interviewing is employed to stimulate patient self-motivation. After all, it is the patient who ultimately decides to make a change in lifestyle for the better, not the practitioner. It is important to remember to practice motivational interviewing as a *directive* process. By being *directive* in patient interactions, the process will take a lot less time than simply allowing the patient to talk about anything.

The technique of motivational interviewing uses a series of well-defined strategies to move the patient toward the end goal of self-motivation to change behavior. The basic principles of motivational interviewing are:

- Assessment of the patient's readiness or willingness to change.
- Use of specific techniques to move people toward change based on their present state of willingness.
- Assist the patient in creating a favorable climate for change to occur.
- Explore, address, and, to an extent, resolve ambivalence and resistance.

On the surface, this sounds like a potentially long process. In practice, however, motivational interviewing need not take more than 5 to 10 minutes per session with the patient. The case manager is encouraged to review example patient-practitioner interactions on the CD's for guidance with the technique and to read the book mentioned earlier in this chapter for in-depth guidance on the motivational interviewing process.

## Psychosocial and Biomedical Approaches for Implementing Change

Traditionally, healthcare providers have used a biomedical approach to convince patients to make a specific behavior change. In this model, the practitioner, acting as the healthcare expert, basically tells the patient what to do and hopes the advice is followed.

The psychosocial model differs somewhat in that the interaction between the provider and patient is viewed as a meeting of experts for the purpose of reaching an agreement on action. In this model, regardless of what the practitioner says, it is ultimately the patient's decision and subsequent actions that result in meaningful and lasting behavior change. Thus the psychosocial model requires that behavior changes be negotiated between practitioner and patient, and not dictated. Adherence requires that both parties involved in the interaction take some degree of ownership for outcomes achieved. It is important to remember that the practitioner is present to serve the needs and concerns of the patient, and not the other way around. **A key to success with the psychosocial model of motivational interviewing is to understand that respect from the patient is not a given; rather, it must be earned.**

In motivational interviewing, patients must be routinely assessed to determine if they have decided to change behaviors. Based on assessment results, the case manager will require various skills, tools, and strategies to develop an adherence improvement plan. The plan should ultimately be centered on helping a patient identify and implement his or her own unique change process in adopting improved adherence.

**In motivational interviewing, the case manager avoids arguing with patients about the need for change.** It is crucial to remember this basic rule because the process requires rapport to be built and maintained by the patient and case manager. So, in a situation where a patient is not taking their medication appropriately,

Do not say,

*"I have told you several times how important it is to take your medicine. Why don't you do it?"*

Rather say,

*"I have noticed that you have missed several doses of your medication. Is there something going on that I can help you with?"*

Biomedical	Psychosocial
Practitioner centered	Patient centered
Information giving	Information exchange
Dictate behavior	Negotiate behavior
Authoritarian	Understand and accept
Respect expected	Respect earned

**Table 20. Contrasts Between Healthcare Models.**

#### **MOTIVATIONAL INTERVIEWING-FACT:**

Choosing the right moment to consider change and moving ahead at the right pace will enhance success rates.

#### **NOTES:**

**MOTIVATIONAL  
INTERVIEWING-  
FACT:**

The case manager's role is to help people to make decisions within their own frame of reference.

**NOTES:****Resistance Behavior**

When resistance occurs during interactions with a patient in the process of motivational interviewing, it should not be viewed as a negative outcome of the session. Certainly, resistance is a better state for the patient to be in than ambivalence. With resistance, at least the case manager knows that the patient is giving proposed courses of action some thought. Throughout the course of interaction with a patient, resistance can take several forms:

- Negating
  - Blaming, excusing, minimizing, unwillingness to change
- Arguing
  - Hostility, challenging
- Interrupting
- Ignoring

What is important about resistance is that it signals a potentially emerging state of dissonance in the patient. By appropriately addressing the reasons for resistance, the case manager can lead the patient toward dissonance and subsequently into serious exploration of possibilities for change.

Through the creation of dissonance, which is basically an observed discrepancy between behaviors and held values and attitudes, a patient can be motivated toward self-change. Basically, humans do not like dissonance in their lives, and once recognized will often take necessary steps to resolve it. The purpose of motivational interviewing is to create dissonance in the patient so that the need for self-change will be realized. Once the need for change is realized, the dissonance can then be resolved through identification and adoption of behaviors that are necessary for improved adherence.



As an example, it may be important for a grandfather to participate in his grandchildren's lives like playing piggyback and hide and seek. If he can not do so because of shortness of breath from smoking, this creates a discrepancy between the behavior (smoking) and value (participating in grandchildren's lives). This discrepancy results in dissonance and subsequently a desire to change (stop smoking). By quitting the behavior that causes the dissonance (smoking), discrepancy is resolved and the grandfather has brought his behavior back in line with his values.

## Collaboration

Motivational interviewing requires the creation of an atmosphere of collaboration to determine mutually agreeable goals between the case manager and patient. **In motivational interviewing, the case manager spends less time giving advice, and more time asking questions.** Questioning is necessary to gain a degree of understanding about the patient's level of ambivalence or resistance to changes in behavior that are necessary to achieve a given goal.

### NOTES:

## Health Literacy

Motivational interviewing is also about informed choices. Because motivational interviewing assumes that the patient is a partner in adopting healthcare decisions, it is important (and ethical) that the patient understands information provided and how it relates to his or her situation



and therapy. In this context, it is vital that the case manager is cognizant of health literacy issues that may detract from the patient's comprehension and takes appropriate action to assure that the patient understands what is being said. In low health literacy situations, the use of simple analogies can be particularly rewarding in gaining understanding from the patient.

## Menu of Strategies: Elicit-Provide-Elicit

In motivational interviewing, the practitioner uses the general concept of Elicit-Provide-Elicit (or question-response-question). Information is elicited from the patient so the case manager can better understand attitudes, beliefs, values, and readiness to change. After information is elicited, then the case manager can provide information or knowledge to induce discrepancy, or, at the right time, suggestions for change that may be useful to the patient in changing behaviors. After information is provided, the case manager once again elicits more information from the patient to determine concerns or new questions that may have surfaced.

For a complete discussion of, and guidance to, the Elicit-Provide-Elicit technique, please refer to the motivational interviewing CD that accompanies CMAG.



**NOTES:****READS: The 5 Principles of Motivational Interviewing**

The case manager must become familiar with and master 5 principles to be successful with motivational interviewing. These 5 principles are:

- Roll with resistance
- Express empathy
- Avoid argumentation
- Develop discrepancy
- Support self-efficacy

**Rolling with resistance**

Rolling with resistance is an important skill that allows the case manager to stay focused on resolving underlying issues brought up by the patient while avoiding getting caught up in a trap of antagonism.

For instance, if a patient says something like

*"I don't need to take those pills. Even though my lipid levels are sky high, I feel good!"*

The case manager's reply should be something on the order of:

*"I hope you continue to feel well and you continue to have your lipid levels periodically checked."*

In reacting this way, the case manager has provided the patient with empathy, and, at the same time, has opened up a door for discrepancy and dissonance while avoiding a no-win argument about the value of pills to a patient who feels fine at the moment.

**Expressing empathy**

Because motivational interviewing relies to a great extent on establishing and maintaining rapport with the patient, the ability to express empathy is critical to the whole process. Being able to express empathy is a primary skill to demonstrate understanding and caring for others. Without it, establishing rapport with the patient becomes all but impossible. It is important to remember that empathy be nonjudgmental even when the patient is engaged in a behavior that is clearly detrimental to health (eg, smoking).



Also, it is often difficult for healthcare providers to draw a line between empathetic listening, responses, and 'telling'. The following is a list of some things that empathetic listening and responding is not:

- Ordering, directing, commanding
- Warning or threatening
- Giving advice, suggestions, solutions
- Persuading or lecturing
- Moralizing, preaching (fixing, healing, and converting)
- Disagreeing, judging, criticizing, or blaming
- Agreeing, approving, or praising
- Shaming, ridiculing, or labeling
- Reassuring, sympathizing, or consoling
- Questioning or probing

### Avoiding argumentation

As mentioned previously, establishing and maintaining a certain degree of rapport with the patient is necessary for successful outcomes with motivational interviewing. Simply stated, arguing with a patient will destroy that rapport, and in some cases actually justify to the patient that no changes in behavior are necessary. Therefore, avoiding arguing with patients is a skill that the case manager needs to routinely practice. A better approach is to win the patient with empathy and the Elicit-Provide-Elicit technique.

### Developing discrepancy

As discussed earlier, the ability to develop dissonance or discrepancy between behaviors and attitudes or beliefs is at the heart of motivational interviewing. There are a couple of ways in which discrepancy can be developed within a patient. One simple technique is to ask a patient what is good (positive) about a particular behavior (eg, not taking medications as prescribed) and what is bad about that same behavior. By simply repeating back the positives and negatives put forward by the patient, with examination of each in detail, discrepancy and dissonance will emerge.

#### NOTES:

**ADHERENCE  
SUGGESTION:**

Involve patient's spouse or family in treatment plan.

**NOTES:**

As an example:

Case Manager: *Mr. Jones - so I understand that you really like to get down on the floor and give your grandkids piggyback rides. (Respond from earlier knowledge of Mr. Jones)*

Mr. Jones: *Yes - it's a lot of fun and the kids really enjoy it, but lately, I get headaches so quickly and the kids could go all day.*

Case Manager: *What do you think is going on that causes your headaches? (Elicit)*

Mr. Jones: *Well, I am getting older, and I guess my blood pressure has been a little out of control lately.*

Case Manager: *Did you know that high blood pressure can result in headaches, especially in older people? (Respond)*

Mr. Jones: *Yes I know - that is what my doctor said.*

Case Manager: *What are you doing to take care of your blood pressure? (Elicit)*

Mr. Jones: *The doctor keeps saying, diet, exercise, and medication. I do pretty good on the diet, and believe me, the kids give me the exercise, but remembering my pills is something else.*

Case Manager: *I understand - remembering everything you need to do to take care of yourself can be a challenge, but you know, uncontrolled blood pressure can lead to a lot more serious consequences than a headache. (Respond)*

Mr. Jones: *Like what?*

Case Manager: *Well, strokes that put people in wheelchairs for life can happen. If that were to happen to you, how would that fit in with your plans of playing with your grandkids? (Elicit)*

Mr. Jones: *I guess it wouldn't. (Discrepancy)*

Case Manager: *OK - can we work on a plan to help you remember to take your blood pressure medication? (Ask permission to participate with the patient in finding an agreeable solution to remembering to take blood pressure medication - this helps the case manager determine the degree of readiness.)*

Another way to develop discrepancy is to question the patient about his or her goals in taking a particular medication. What this does is reinforce, in the patient's mind, the need for taking the medication on a regular basis. When reviewed in the context of past adherence behavior, reinforcement can be a good stimulator of discrepancy and dissonance.

**NOTES:**

### Supporting self-efficacy

Support for self-efficacy is the last skill that is necessary to achieve successful motivational-interviewing outcomes. It is crucial for the case manager to "stay tuned" to what the patient is saying. If the patient mentions a positive intention (need to improve adherence), it is important to recognize this and help the patient move toward the desired behavior. For example:

If a patient says: *"I really need to be doing my blood sugar checks more regularly."*

This should be a cue to the case manager, who can support self-efficacy by responding: *"I am glad you are concerned about your health."*

Then follow up immediately by eliciting with: *"Can we take a few minutes to explore some things that might be helpful with doing your sugar (use the patient's terms) checks?"*

Additionally, it is essential to reinforce adherent behavior whenever possible by simply telling patients they are doing a good job at self-management despite all obstacles. The case manager should also routinely ask patients for anything that is needed to continue with good adherence to the treatment plan. It is vitally important to remember that the patients themselves are ultimately responsible for implementing and sustaining behavior changes, and often the case manager or a family member will be the only person who notices. Get in the habit of celebrating success with your patients!

### Readiness Rulers

Readiness Rulers are a very important tool in helping a patient prepare for change. Much useful information for developing an adherence improvement strategy can be gained from this instrument. CMAG makes use of Readiness Rulers to assess motivation to change. For a complete discussion of this technique, please refer to Chapter 5: Willingness to Change.

**NOTES:****Summary**

As described here, motivational interviewing is a process with specific techniques that address patient resistance and ambivalence for the purpose of creating dissonance. Dissonance then leads to changes in behavior. Motivational interviewing is a patient-centered approach that takes little additional time and can reap great rewards in terms of improved behaviors, adherence, and therapy outcomes. Because it is such an important tool in helping patients to achieve improvements in self-management of disease, the case manager will benefit greatly by becoming thoroughly familiar with motivational interviewing concepts in both knowledge and practice.



CMAG

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# Appendix 1:

## Case Study



# Appendix 1: Case Study

Alan Wilson is a 72-year-old male patient recently diagnosed with asthma. He has been placed on several inhalers and an oral medication. Additionally, he was recently placed on a statin for hyperlipidemia. He also has hypertension, which is being treated with a once-daily angiotensin-converting enzyme inhibitor. At 64 years of age, Alan experienced a massive coronary event that resulted in significant loss of left ventricular function. As a consequence of rehabilitation efforts and close management of his condition, he has been able to lead a relatively normal, but limited lifestyle. Alan is retired and lives at home with his wife, who suffers from Alzheimer's disease.

During your CMAG assessment of Mr. Wilson, he scored a 7 on the REALM-R and was able to provide adequate information on the Medicine Knowledge Survey to illustrate that he understood his medications and how to take them. You have therefore determined that his knowledge is high.

He rated himself as a 4 out of 10 on the Readiness Ruler. During the application of the Readiness Ruler, Alan indicated that he was not certain that he could manage all of the complexities involved with integrating new medications and devices into his already challenging therapeutic regimen for coronary heart disease. His average score overall on the FSSQ was a 3.4, indicating moderate support overall.

As a consequence of the results of the Readiness Ruler and the FSSQ, you determined that his motivation is low. Based on your assessment of his scores on the components of the guidelines, you have placed him in quadrant 3 of the CMAG adherence management algorithm (high knowledge, low motivation).

In scenario 1, an appropriate method for interacting with Mr. Wilson will be provided, and in scenario 2, a less appropriate interaction will be presented with comments.

## Scenario 1 - Appropriate Method

*Case Manager: Mr. Wilson, how do you feel about taking several new medications for your recently diagnosed asthma and high cholesterol?*

*Mr. Wilson: Well, it's several more things to remember to do each day. Some days, I just forget to take my medicine, and now I need to remember all of the details of how to use these new inhalers appropriately.*

*Case Manager: Which medicines do you forget to take? (Elicit)*

*Mr. Wilson: I am having a little trouble remembering to take the asthma pill and cholesterol pill. It was hard enough to remember my blood pressure pill, and now more pills in the mix makes it harder. The inhalers are another story - but I don't need to take them until I feel difficulty breathing, so I guess they are not that bad.*

Case Manager: *Sounds like a lot to remember. (Provide)*

Mr. Wilson: *Yeah. And I don't feel bad, plus I have a lot to deal with already with my wife.*

Case Manager: *How is that going for you? (Elicit)*

Mr. Wilson: *OK I guess. My daughter helps out as much as she can. She makes it by the house pretty much every day.*

Case Manager: *That's great that she is able to lend a hand. I would like to talk about your medicine for a moment, if that's OK with you? (Directive)*

Mr. Wilson: *Sure.*

Case Manager: *Does your daughter know that you are taking a new medicine? (Elicit)*

Mr. Wilson: *I'm not sure that I have told her. I hate to be a burden to her.*

Case Manager: *How important do you feel it is to treat your asthma and high cholesterol? (Elicit and create Discrepancy)*

Mr. Wilson: *Well, I would say that it's pretty important. A friend of mine had a heart attack and his doctor said that it was because his cholesterol was high.*

Case Manager: *It sounds like you understand why you should take it, you just have trouble remembering, especially since you are feeling OK. (Provide)*

Mr. Wilson: *Yeah, that's pretty much it. I know that a heart attack is a pretty big deal, but it's just that I stay pretty busy. I wish I had something to help me remember every day. (evidence of Dissonance)*

Case Manager: *What do you think would help? (Elicit)*

Mr. Wilson: *I don't know.*

Case Manager: *I have a few ideas. Maybe I could share them with you and you could tell me what you think would work for you. How does that sound? (Provide)*

Mr. Wilson: *I'm open to suggestions.*

Case Manager: *How about that friend that had the heart attack? Maybe you two could help each other with reminder calls? (Provide)*

Mr. Wilson: *Well, that probably won't work. I would have to remember "that" too.*

Case Manager: *OK, it appears that you take both your blood pressure pill and your cholesterol pill once daily and your asthma pill 3 times a day. What is something that you do every day? (Elicit)*

Mr. Wilson: *I drink coffee after pretty much every meal. Maybe I could put the pill bottles by my coffeepot.*

Case Manager: *That's a great idea! How would you feel about my talking to your daughter and give her the "heads up" about our plan, since you said that she tries to help out? (Elicit)*

Mr. Wilson: *That would be fine with me. She watches out for her folks as best she can.*

Case Manager: *Well, it sounds like we are off to a good start. I will follow up with you in one week to see how everything is going. Good luck!*

In this example, because knowledge was high and motivation was low, the case manager decided to focus primarily on the motivation component. Through Motivational Interviewing and practicing the concept of Elicit-Provide-Elicit, the case manager was able to determine that Mr. Wilson is quite burdened with his wife's illness, so he forgets to take care of himself. He has a good support system with a daughter that can check in on him frequently. It appears that he understands the importance of taking his medicine, but needed to become aware of ways to remind himself to take it every day. This needed to be something relatively simple, because he spends a lot of his time with his wife.

A family support plan was established, in that the case manager will contact the daughter to provide a recap of the interaction with Mr. Wilson. This would be a good opportunity to assess his daughter's support of him from her point of view. It would also be a good idea to get her perspective on his motivation and likelihood to be adherent to his medication and implement the plan.

Tools used:

- Motivational Interviewing
- Patient reminder system for daily medication use
- Social support plan
- Family motivational assessment

## Scenario 2 - Less Appropriate Method

Case Manager: *Mr. Wilson, are you taking your new medications for cholesterol and asthma just like the doctor ordered you to do?*

Mr. Wilson: *Well, it's several more things to remember to do each day. Some days, I just forget to take my medicine, and now I need to remember all of the details of how to use these new inhalers appropriately.*

Case Manager: *Well you know, Mr. Wilson, you are very lucky to have survived your first heart attack. You don't want that to happen to you again do you?*

Mr. Wilson: *I guess not. I just have a little trouble remembering. I'll work on it. (Thinking to himself, you don't have any idea what a heart attack is really like!)*

Case Manager: *Good. You know if you don't and your doctor finds out, he's going to come down on you pretty hard and I'll be very disappointed.*

Mr. Wilson: *OK.*

Case Manager: *By the way, what is the situation with your wife? Is someone remembering to give her her medication and go to the pharmacy to pick up her refills?*

Mr. Wilson: *Yes, my daughter comes over and she takes care of it.*

Case Manager: *Good - with your health getting more fragile, we don't need to be creating a situation where we have to be concerned about her too.*

Mr. Wilson: *Sure.*

Case Manager: *OK then - so what are you going to do to comply with your doctor's demands that you take your medications as prescribed?*

Mr. Wilson: *Well - I'll just take them and not forget.*

Case Manager: *OK - that sounds like a plan. Remember though, I'll be back next month, and if you haven't taken all of your medications, I will find out.*

Mr. Wilson: *I certainly wouldn't want that to happen. (Thinks to himself - I'll count them out and if there are any extras when you come back, I'll flush them down the toilet.)*

Case Manager: *Good, Mr. Wilson, I am glad we had this little talk and have come up with a plan to get you on track. I will see you again in a couple of weeks.*

In scenario 2, the case manager thinks that a plan for improving adherence has been outlined with Mr. Wilson. However, the truth is that Mr. Wilson will likely be less adherent to his therapeutic regimen than he would have been if no interaction had taken place at all.

A common trap that healthcare professionals fall into when performing patient counseling is "telling." In the traditional biomedical approach toward patient management, the practitioner assumes the role of "expert" and treats patients as if they were passive compliers who will do whatever they are told to do regarding self-management of disease.



In this scenario, the case manager may be thinking that motivational interviewing has taken place. But a few questions and suggestions do not make a motivational interviewing session. The case manager's opening question damaged any rapport that was previously present with Mr. Wilson. The opening suggests that Mr. Wilson's sole responsibility is to follow the doctor's orders (biomedical approach). As one can see, this theme continues throughout the first half of the counseling session. Additionally, the case manager in scenario 2 exhibited a gross lack of empathetic listening skills, which damaged the communication process.

When the counseling session approaches the point of exploring some strategies for improving medication adherence, several deficiencies in the method arise. First, the case manager continues with the traditional biomedical approach when dealing with the issue. Mr. Wilson is not drawn into the process of first identifying viable solutions to his self-management issues. Second, he is not made a partner in determining what solutions are acceptable. Finally, although the case manager may think that the interaction has resulted in a general plan to improve therapy adherence (Mr. Wilson will "try harder" to remember), in reality, no plan has been made that will lead to any meaningful change in Mr. Wilson's ability to adhere to his therapeutic regimen. The plan completely lacks an outline of positive steps that Mr. Wilson can identify and "own" that will result in improved self-management. In fact, Mr. Wilson has come up with a clever method of deceiving the case manager to avoid similar discussions in the future (counting pills and throwing excess medication away).

To avoid falling into the "telling" trap, it is important that the case manager periodically reviews the content of interactions with patients when efforts are being made to improve therapeutic self-management. Through the routine practice and refinement of the Elicit-Provide-Elicit principle of motivational interviewing, the case manager can engage in directive interaction that will help patients discover and "own" unique solutions to self-management issues, which will result in meaningful and sustained behavior change.





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# Appendix 2: Patient Assessment Forms



# Appendix 2: Patient Assessment Forms

A. For new patients or patients new to a therapeutic regimen, the following tools may be used:

<b>Knowledge assessment</b>	<b>Health Literacy - REALM-R (Bass, 2003)</b> <b>Medication Knowledge Survey</b>
<b>Motivation assessment</b>	<b>Readiness Ruler (Zimmerman, 2000)</b> <b>Duke-UNC Functional Social Support Questionnaire (Broadhead, 1998)</b>

A. For patients who do not need a full reassessment or those who are being maintained on existing therapies and not new to the case manager, the Modified Morisky Scale may be used.

B. Review Chapter 8 for any patient or disease-specific circumstances that may necessitate modification of the adherence improvement plan.

C. Complete the CMAG Patient Assessment Summary Form to determine the appropriate adherence intention quadrant and construct an adherence improvement plan.

*Photocopy-ready masters of each tool are available on the following pages.*

# REALM-R Examiner Record

Fat

Flu

Pill

Allergic \_\_\_\_\_

Jaundice \_\_\_\_\_

Anemia \_\_\_\_\_

Fatigue \_\_\_\_\_

Directed \_\_\_\_\_

Colitis \_\_\_\_\_

Constipation \_\_\_\_\_

Osteoporosis \_\_\_\_\_

Fat, Flu, and Pill are not scored. We have previously used a score of 6 correct or less to identify patients at risk for poor literacy.

# Word List

Fat

Fatigue

Flu

Directed

Pill

Colitis

Allergic

Constipation

Jaundice

Osteoporosis

Anemia

Check all boxes patients can successfully read and fill in the information they provide to you about each of their medications.

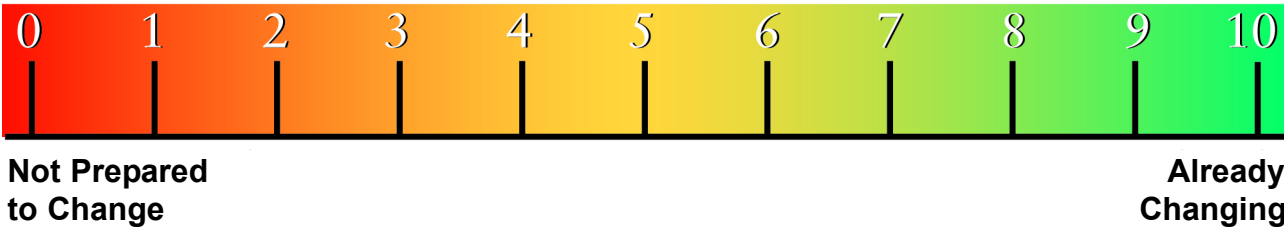
P = Positive effects of taking medication, N = Negative effects of taking medication



# Readiness Ruler

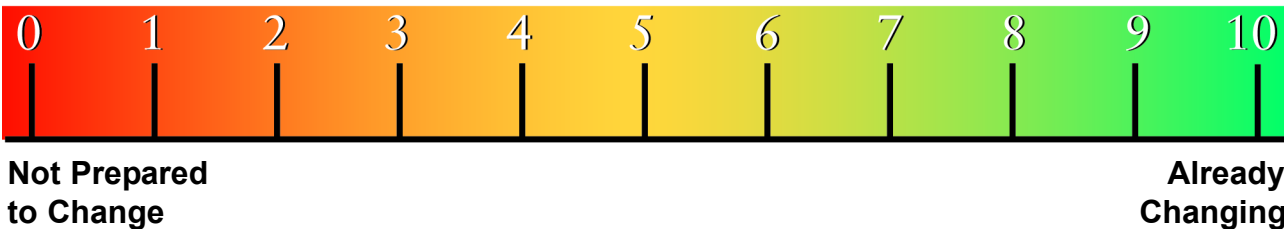
On the line below, mark where you are now on this line that measures your change in \_\_\_\_\_.

Are you not prepared to change, already changing, or somewhere in the middle?



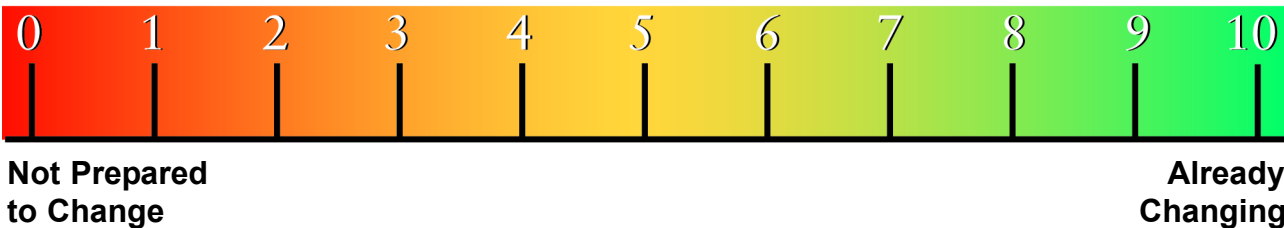
On the line below, mark where you are now on this line that measures your change in \_\_\_\_\_.

Are you not prepared to change, already changing, or somewhere in the middle?



On the line below, mark where you are now on this line that measures your change in \_\_\_\_\_.

Are you not prepared to change, already changing, or somewhere in the middle?



# Readiness Ruler

## Follow-Up Question Suggestions:

### If the patient's mark is on the left side of the line...

- How will you know when it is time to think about changing?
- What signals will tell you to start thinking about changing?
- What qualities in yourself are important to you?
- What connection is there between those qualities and "not considering a change?"

### If the patient's mark is somewhere in the middle...

- Why did you put your mark there and not further to the left?
- What might make you put your mark a little further to the right?
- What are the good things about the way you are currently trying to change?
- What are the not-so-good things?
- What would be the good result of changing?
- What are the barriers to changing?

### If patient's mark is on the right side of the line...

- Pick a barrier to change and list some things that could help you overcome this barrier.
- Pick one of those things that could help and decide to do it by \_\_\_\_\_ (specific date).

### If the patient has taken a serious step in making a change.....

- What made you decide on that particular step?
- What has worked in taking this step?
- What helped it work?
- What could help it work even better?
- What else would help?
- Can you break that helpful step down into smaller pieces?
- Pick one of those pieces and decide to do it by \_\_\_\_\_ (specific date)

### If the patient is changing and trying to maintain that change...

- Congratulations! What's helping you?
- What else would help?
- What else are your high-risk situations?

### If the patient has "fallen off the wagon"...

- What worked for a while?
- Don't kick yourself - long-term change almost always takes a few cycles.
- What did you learn from the experience that will help you when you give it another try?

# Readiness Ruler - Phone Version

## Steps for use of the Readiness Ruler in a Telephone Conversation

**1. Say to the patient:** Rate where you are now on a scale of 1 to 10 that measures change in behavior, where 1 means you are not prepared to change \_\_\_\_\_ (specific behavior), and 10 means you already changing \_\_\_\_\_ (specific behavior). For this question, a 5 would mean you are someplace in the middle.

**2. Record the patient's answer** \_\_\_\_\_.

**3.** Based on the patient's response, have him or her answer the following questions that apply.

### If the answer was 1 to 3, ask...

- How will you know when it is time to think about changing?
- What signals will tell you to start thinking about changing?
- What qualities in yourself are important to you?
- What connection is there between those qualities and "not considering a change?"

### If the answer was 4 to 7, ask...

- Why did you not choose a lower number?
- What might make you choose a higher number?
- What are the good things about the way you are currently trying to change?
- What are the not-so-good things?
- What would be the good result of changing?
- What are the barriers to changing?

### If the answer was 8 to 10, say...

- What would be a barrier to your progress, and how would you overcome it? Choose something that would help you and make a note to do it on a specific date.

**4. Now, ask the following questions, also based on the patient's response.**

### If the answer was 4 to 10, ask...

#### If you are changing and trying to maintain that change...

- Congratulations! What's helping you?
- What else would help?
- What are your high-risk situations?

**If you have taken a serious step in making a change...**

What made you decide on that particular step?

What helped it work?

What could help it work even better?

What else would help?

Can you break that helpful step down into smaller pieces?

Pick one of those pieces and decide to do it on a specific date?

**If the answer was 1 to 5, ask...**

**Would you consider yourself to have “fallen off the wagon?” If so...**

What worked for a while?

Don't kick yourself- long term change almost always take a few cycles.

What did you learn from the experience that will help you when you give it another try?

# Duke-UNC Functional Social Support Questionnaire (FSSQ)

Here is a list of some things that other people do for us or give us that may be helpful or supportive. Please read each statement carefully and place an 'X' in the column that is closest to your situation. Give only 1 answer per row.

	5.	4.	3.	2.	1.
	As much as I would like	Almost as much as I would like	Some, but would like more	Less than I would like	Much less than I would like
1. I have people who care what happens to me.					
2. I get love and affection.					
3. I get chances to talk to someone about problems at work or with my house-work.					
4. I get chances to talk to someone I trust about my personal or family problems.					

	5.	4.	3.	2.	1.
	As much as I would like	Almost as much as I would like	Some, but would like more	Less than I would like	Much less than I would like
5. I get chances to talk about money matters.					
6. I get invitations to go out and do things with other people					
7. I get useful advice about important things in life.					
8. I get help when I am sick in bed.					

Overall Average: \_\_\_\_\_

# FSSQ Scoring Instructions

1. All questions must be completed to score the FSSQ.
2. Add the numeric scores for all 8 questions.
3. Divide the total score by 8 to achieve an average score.

## Scoring:

As social support increases, the score should increase.

## Modified Morisky Scale (MMS)

Instructions: Ask the patient each question and circle the corresponding "yes" or "no" response. Circle the answer to each question and sum the score for the motivation column and sum the score for the knowledge column. Report the results on the CMAG Patient Summary Assessment form.

Question	Motivation	Knowledge
1. Do you ever forget to take your medicine?	Yes(0) No(1)	
2. Are you careless at times about taking your medicine?	Yes(0) No(1)	
3. When you feel better do you sometimes stop taking your medicine?		Yes(0) No(1)
4. Sometimes if you feel worse when you take your medicine, do you stop taking it?		Yes(0) No(1)
5. Do you know the long-term benefit of taking your medicine as told to you by your doctor or pharmacist?		Yes(1) No(0)
6. Sometimes do you forget to refill your prescription medicine on time?	Yes(0) No(1)	
Total score	<p>_____</p> <p>0-1 = Low motivation 2-3 = High motivation</p>	<p>_____</p> <p>0-1 = Low knowledge 2-3 = High knowledge</p>



# CMAG Patient Assessment Summary Form

Patient Name: \_\_\_\_\_

Date of Assessment: \_\_\_\_\_ Age: \_\_\_\_\_

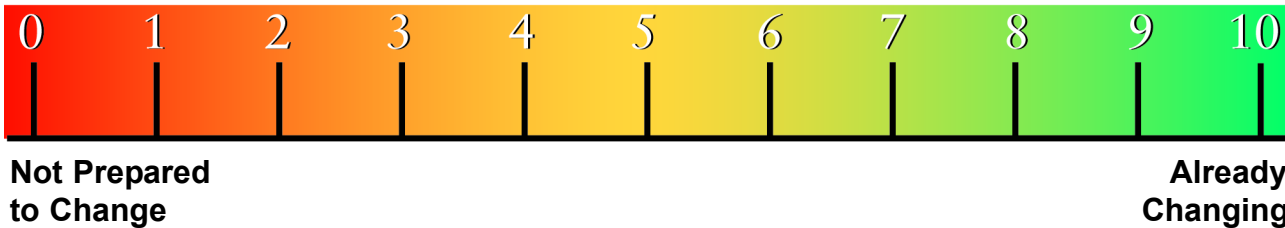
**KNOWLEDGE ASSESSMENT:**

Realm-R Score: \_\_\_\_\_ Low ( $\leq 6$  correct) High ( $>6$  Correct)

Medication Knowledge Survey:                      LOW                      HIGH (potential modifier to REALM-R)

OVERALL KNOWLEDGE ASSESSMENT:    LOW                      HIGH

**Motivation Assessment: Readiness Ruler**



FSSQ (Average): \_\_\_\_\_ (mean = 3.0) (potential modifier to Readiness Ruler)

OVERALL MOTIVATION ASSESSMENT:    LOW                      HIGH

**Modified Morisky Scale**

Knowledge Domain Score (questions 3,4,& 5):                      LOW                      HIGH

Motivational Domain Score (questions 1,2,& 6):                      LOW                      HIGH

Possible Modifiers: \_\_\_\_\_

CMAG Placement (circle one):

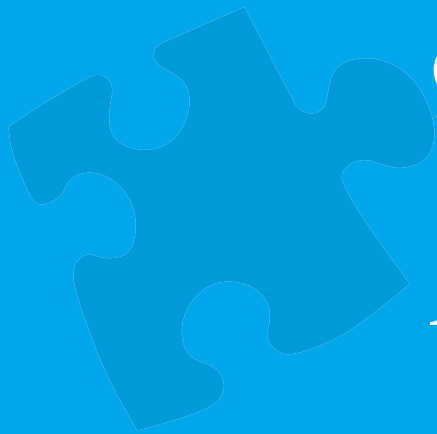
Quadrant 1    Quadrant 2    Quadrant 3    Quadrant 4

KNOWLEDGE PLAN/TOOLS: \_\_\_\_\_

MOTIVATION PLAN/TOOLS: \_\_\_\_\_

Follow-Up Date: \_\_\_\_\_





CMAG

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# Appendix 3: Adherence Improvement Tools



# Appendix 3:

## Adherence Improvement Tools

A number of tools and resources are available from a variety of sources to address both motivation and knowledge issues related to medication adherence. Although not exhaustive, the following lists and suggestions will be helpful to the case manager in building an adherence improvement program that is suited to the patient's needs as identified in the CMAG algorithm.

### Motivation Tools

- Utilize a patient contract
- Provide incentives
- Motivational interviewing
- Encourage patient to develop a buddy system, ie, have a friend or family member call to remind and motivate the patient
- Patient reminder systems:
  - Medication wallet card
  - Medication calendar
  - Medication diary
  - Pill organizer
  - Patient reminder systems
  - Calendar refill reminder stickers
  - Setting alarms such as watch, cell phone, personal digital assistant (PDA)
  - Reminder strategies/cues:
    - Case manager to schedule follow-up phone calls or postcards or emails for high-risk patients
    - Tie medication-taking behavior to normal daily activities such as brushing teeth, drinking coffee, etc.
    - Remind patients of available email reminder systems offered by many pharmacies

Pharmacy and Web Address	Electronic Refill Reminders	Automatic Refills	Order Refills Online	Mail Delivery	Drug Information
<b>Walgreens</b> <a href="http://www.walgreens.com">http://www.walgreens.com</a>	X	X	X	X	X
<b>Walmart</b> <a href="http://www.walmart.com/">http://www.walmart.com/</a>	X	X	X	X	X
<b>Eckerd</b> <a href="http://www.eckerd.com">http://www.eckerd.com</a>	X	X	X		X
<b>CVS</b> <a href="http://www.cvs.com">http://www.cvs.com</a>	X		X	X	X
<b>Rite-Aid</b> <a href="http://www.riteaid.com/">http://www.riteaid.com/</a>	X		X	X	X
<b>Target</b> <a href="http://www.sites.target.com/site/en/spot/page.jsp?title=pharmacy_home">http://www.sites.target.com/site/en/spot/page.jsp?title=pharmacy_home</a>			X		
<b>Medicine Shop</b> <a href="http://www.medicine-shoppe.com/">http://www.medicine-shoppe.com/</a>			X	X	X
<b>Publix</b> <a href="http://www.publix.com/wellness/pharmacy/Home.do">http://www.publix.com/wellness/pharmacy/Home.do</a>			X		
<b>K-mart</b> <a href="https://pharmacy.kmartcorp.com/index.jsp">https://pharmacy.kmartcorp.com/index.jsp</a>			X		

# Knowledge Tools

- Educate the patient on the disease and consequences of nonadherence (use motivational interviewing where necessary to ready the patient for acceptance of the disease and consequences of nonadherence)
- Educate patient regarding medication regimen:
  - Why the medication is needed
  - Review dosage schedule and how it fits with patient's daily schedule and lifestyle
  - What to do if doses are missed or delayed
  - The common adverse effects that might occur
  - Serious adverse effects that should be watched for
  - What action to take when the initial prescription is running out
  - Anticipated length of therapy
- Provide written materials (health literacy matched)
  - Disease specific
  - Medication specific
  - General medication-taking materials
- Use "teach back" method - ask patient to repeat instructions
- Encourage patient to write down instructions
- Investigate opportunities for patient self-monitoring, ie, at home blood pressure measurement
- Use medical analogies (<http://www.altoonafp.org/analogies.htm>)
- Refer patients to National Institutes of Health interactive tutorial Web site for disease-specific and procedure education (<http://www.nlm.nih.gov/medlineplus/tutorial.html>)
- Patient brochure from the National Council on Patient Information and Education called "Your Medicine: Play It Safe," which includes a medication record form. This brochure is available in both English and Spanish at: [www.talkaboutrx.org/educational\\_resources.jsp](http://www.talkaboutrx.org/educational_resources.jsp)

## Additional Internet Resources for Enhancing Patient Compliance

1. [www.aids.about.com/cs/adherence/tp/tenadherence.htm](http://www.aids.about.com/cs/adherence/tp/tenadherence.htm) - Site provides tips on improving medication adherence for patients with HIV disease.
2. [www.americanheart.org](http://www.americanheart.org) - The American Heart Association offers a Compliance Action Program with resources for patient and healthcare professionals. A medication reminder chart is available in PDF format at: [http://www.americanheart.org/downloadable/heart/49\\_medchart.pdf](http://www.americanheart.org/downloadable/heart/49_medchart.pdf)
3. [www.epill.com](http://www.epill.com) - Offers a wide range of medication adherence aids including pill organizers, pill dispensers, electronic reminders, and alarms.
4. [www.fda.gov/cder/consumerinfo/ensuring\\_safe\\_use\\_all\\_resources.htm#brochures](http://www.fda.gov/cder/consumerinfo/ensuring_safe_use_all_resources.htm#brochures) - FDA site that provides patient information on the safe use of medications. Materials include pamphlets and brochures on the safe use of medications. There is also a medication guide that patients can download to record their current medications. Most materials are available in both Spanish and English.

5. **[www.forgettingthepill.com](http://www.forgettingthepill.com)** - Provides wide range of pillboxes, pill organizers and dispensers, and electronic pill reminders.
6. **[www.ideamoms.com](http://www.ideamoms.com)** - Product line includes the MedMinder™, a magnetic, laminated plastic medication reminder chart packaged with a dry-erase marker. It is designed for use with pediatric patients.
7. **[www.lifeclinic.com](http://www.lifeclinic.com)** - Provides information about hypertension, cholesterol, diabetes, nutrition, and fitness as well as a free online service for recording and tracking health information. Registered users can sign up to receive daily email medication reminders.
8. **[www.patientcompliance.net](http://www.patientcompliance.net)** - Portal provides link to numerous commercial web-sites that provide adherence improvement aids for patients.
9. **[www.talkaboutrx.org](http://www.talkaboutrx.org)** - Web site from the National Council on Patient Information and Education, a coalition dedicated to improving communication about the safe, appropriate use of medicines.
10. **[www.usp.org/audiences/consumers/pictograms](http://www.usp.org/audiences/consumers/pictograms)** - The United States Pharmacopeia offers a free library of 81 pictograms - standardized graphic images that help to convey medication instructions, precautions, and warnings. Pictograms are particularly useful for providing information to patients with a lower level of reading ability and patients for whom English is a second language. The pictograms can be downloaded in GIF or EPS format after accepting a license agreement.



# CMAG Therapy Adherence Contract

## I WILL TAKE CHARGE OF MY HEALTH

My health is important to me and my family. That is why I am making a commitment to live a healthy lifestyle and to do my part in adhering to my therapy plan. I will work closely with my case manager and other healthcare providers to develop and follow a therapy plan that works best for me. Because I am responsible for my own health, I will specifically:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

I know that treating and controlling my disease will be improved through the above actions. Therefore, I am signing this pledge to vow to myself, my family and friends, my case worker, and other healthcare providers that I will do everything I can, as outlined above, to be as healthy as possible.

---

Patient's Signature

Date

As your case manager, I pledge to work with you to help you reach your health goals.

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Case Manager's Signature

Date





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# Appendix 4:

Key Articles for  
Further Information  
on the Topic of  
Medication Adherence



## Appendix 4:

# Key Articles For Further Information On The Topic Of Medication Adherence

The following list is intended to provide the case manager with additional resources to learn more about the issue and management of medication adherence. It is not meant to be a complete list of publications on medication adherence (such a list would be thousands of pages long). The references below are provided to help the case manager quickly understand the magnitude of the adherence problem in the United States and offer skills that will assist in addressing the issue with patients.

The first list of references is articles that provide an overview of medication adherence and intervention strategies that have been used to improve medication adherence. The second list provides additional references for providers that are interested in learning more information on Motivational Interviewing and Health Behavior Change.

### *Overview of Medication Adherence*

Haynes RB, McDonald HP, Garg AX. Helping patients follow prescribed treatment: Clinical applications. *JAMA*. 2002;288:2880-2883.

Kruger KP, Berger BA, Felkey B. Medication adherence and persistence: a comprehensive review. *Advances in Therapy*. 2005;22:319-362.

McDonald HP, Garg AX, Haynes RB. Interventions to enhance patient adherence to medication prescriptions. *JAMA*. 2002;288:2868-2879.

Miller HN, Hill M, Kottke T, Ockene IS. The multi-level compliance challenge: recommendations for a call to action. *Circulation*. 1997;95:1085-1090.

National Quality Forum. Improving use of prescription medications. A national action plan. 2005. Available at: <http://www.qualityforum.org/txMedUseBEACH09-28-05.pdf>  
Accessed 12/30/2005.

Osterberg L, Balschke T. Adherence to medication. *N Engl J Med*. 2005;353:487-497.

Vermeire E, Hearnshaw H, Van Royen P. Patient adherence to treatment: three decades of research. A comprehensive review. *J Clin Pharmacy Ther*. 2001;26:331-342.

World Health Organization Report. Adherence to long-term therapies: evidence for action. 2003. Available at: [http://www.who.int/chronic\\_conditions/adherencereport/en](http://www.who.int/chronic_conditions/adherencereport/en)  
Accessed 12/30/2005.

## **Motivational Interviewing and Health Behavior Change**

Berger B. Motivational interviewing [interactive CD]. New York, NY. Pfizer; 2004.

Bodenheimer T, MacGregor K, Sharifi C. Helping patients manage their chronic conditions. California Healthcare Foundation. June 2005. Available at

**<http://www.chcf.org/topics/chronicdisease/index.cfm?itemID=111768>**

Accessed 12/30/2005.

Miller WR, Rollnick S. Motivational Interviewing: Preparing People for Change. 2nd ed. New York, NY: Guilford Press; 2002.

Rollnick S, Mason P, Butler C. Health Behavior Change: A Guide for Practitioners. Edinburgh, Scotland. Churchill Livingstone; 1999.



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# Appendix 5: Internet Adherence Encounter Documentation (CMAGTracker)





## Appendix 5:

# CMAG Internet Adherence Encounter Documentation (CMAGTracker)

The Case Management Society of America has instituted a Web site, **www.CMAGTracker.org**, to collect information on patient encounters and improvements in outcomes through use of CMAG guidelines. Collection and analysis of data contributed by CMSA members will help generate evidence-based support for future versions of CMAG.

In addition to data collection, the Web site is designed to successfully guide case managers in applying CMAG in their practice. The site is user friendly and provides a wealth of learning opportunities, as well as a tool for web based CMAG patient encounter documentation for case managers. The Web site is divided into the following sections:

1. Registration
2. Login
3. Patient setup
4. Assessment
  - a. Literacy
  - b. Medication Knowledge
  - c. Duke Social Support
  - d. Readiness Ruler
  - e. Modified Morisky Scale
5. Planning
6. Facilitation
7. Outcomes
8. Management Reports
9. Data Security, HIPAA Compliance and Privacy Policy.

### Registration

All case managers are required to register for privileges to use the CMAGTracker.org Web site. The registration process requires use of the CMSA ID, which will be validated on an annual basis. The entire registration process will take approximately 5 minutes and will request the selection of a user ID and password. Groups of case managers should register group IDs and passwords so that they can access all group-level data. Please store this information in a safe place. Other requested information pertains to the individual case manager's practice.

### Login

Upon registration the case manager can immediately start using all the features of the Web site by logging in using the user ID and password.

## Patient Setup

Case managers can collect patient data in a HIPAA compliant manner on **www.CMAGTracker.org**. To comply with HIPAA requirements, all patient-level information entered into the Web-based program will be identified only by a unique patient identification number or alphanumeric sequence. **Please note, do not use any personally identifiable information on the Web site (SSN, hospital ID, employer ID, Medicaid number, driver's license, name, address, phone number are prohibited).**

## Assessment

Patient assessment and data entry screens are provided in an easy-to-use interactive format. Depending on the patient's entry into CMAG, the case manager may be directed to either collect Modified Morisky information or perform an in-depth assessment of knowledge, literacy, social support, and readiness to change.

On completion of each questionnaire, the case manager will be presented with the score from the questionnaire along with implications for care. For a detailed discussion of the various questionnaires and their hard copies, please refer to chapters 3 through 7 and Appendix 2.

## Planning

In the planning stage, the case manager can view the quadrant on the CMAG algorithm within which the patient is assigned. Based on CMAG guidelines, a list of tools that can be used with the patient will be provided. From this, a patient-specific adherence improvement plan is suggested, with the option of modifying the plan using clinical judgment and patient-specific modifying factors. A detailed description of the tools is found in Appendix 3.

## Facilitation

As case managers plan and implement adherence tools with the patient, they can check off the tools used within their plans for the patient. These data will be used in the future to refine CMAG based on outcomes evidence information collected from all users of the Web site.

## Outcomes

The application of CMAG guidelines to appropriate patient care should result in improved patient adherence, productivity, and clinical outcomes. The outcomes section of the CMAGTracker allows the case manager to track many potential outcomes. Non-disease-specific outcomes along with disease-specific outcomes can be collected and will be used to determine the impact of CMAG on patient adherence-to-treatment therapies and achievement of therapeutic goals.

### **Management Reports**

The CMAGTracker provides a wide array of reports. These range from individual reports on scheduling adherence interventions and planning assessments, to aggregate-level reports that provide benchmarks for average scores on various assessment scales, outcomes, etc.

### **Data security, HIPAA Compliance and Privacy policy**

The data security and HIPAA compliance and privacy policy documents are readily available for reference as well as to ensure patient agreement with the said documents.

### **Online Support**

Support is available via email, and an online help file will be provided to ensure a quality experience for the case manager.





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# Appendix 6: The Business Case for Adherence



# Appendix 6:

## The Business Case for Adherence

### Gathering Data

A very learned individual once said, "In God We Trust, All Others Bring Data". In this world of instant Internet access, data about anything and anyone is at our fingertips. We can learn the average rainfall in New Delhi or the number of smokers in any state in the union. It is understandable that the demand for data is increasing.

In order to present a viable business case for any new process, you must have adequate data to make your case. In any situation where an individual or organization is asked to expend time, money, or resources; they must understand what the problem is, why it is necessary to address the problem, that the resources needed to address the problem will not be more taxing than the problem itself, that it is more important to use these resources to address this problem and not another, and how they will know if the problem is improving or resolved.

If we are to make a valid case for implementing an adherence program, we must be able to answer all of these questions. The answers to the questions can be either straightforward or complex depending upon the scope of your program or the problem you have decided to address. We will discuss the basics of compiling the required data below.

#### *What data do you need?*

It is important that you have data to illustrate that a problem exists. The data required may be different from one organization to another. However, there are many ways in which non-adherence can increase costs, reduce productivity, and impede outcomes. It is important to determine the ways non-adherence has a negative impact upon achievement of your organizational goals. Next, you need to determine how this might be measured. It is important to make a business case that demonstrates alignment with the organizational objectives. Make sure the problem you have identified has meaning outside of the case management department. It is important to demonstrate that the efforts of your project will help the organization achieve its objectives.

For example, one organization really did care that its patients were within the guidelines for lipid management. It was a caring and compassionate organization. However, the organization's survival was dependent upon achieving high quality scores and demonstrating a high burden of illness in its population. When the case management department proposed a program to improve adherence to lipid management, the reception was lukewarm. The organization liked the idea of doing good for its patients, but needed to address the survival issues. When the case management department was able

to demonstrate, with data, that the low lipid scores were keeping the quality scores low, missing data to improve demonstration of illness burden, and increasing hospital stays, the organization decided to support the program and hire two additional staff members to support it.

*What data was utilized?*

- The number of individuals in the target population.

It is important to know the size of the population to estimate the number of resources that will be needed to implement the interventions. The number of individuals impacted can also be utilized to make the case for need. If an initiative is only relevant to a small group of patients, the value may be viewed as less critical than for a project impacting a large number of patients. On the other hand, a large project may be seen as too resource intensive to successfully implement.

- The impact of the target population on organizational success

This second point is very individualized from organization to organization. However, cost is universal. Any worthwhile project should have value in at least two different areas. One of the areas impacted should have some relationship to cost effectiveness. Cost can be impacted by the avoiding costs, increasing revenues, or decreasing costs. Various adherence projects have demonstrated all three. The lipid project cited earlier helped the health plan increase revenue via a quality bonus, decrease costs through lower incidence of cardiovascular complications, and avoided the cost of hospitalizations. Other groups have specific organizational goals that can be achieved through adherence interventions. One group wished to be awarded a contract that depended upon a documented care management program. The adherence project assisted them in demonstrating a structure to their care management program.

- Baseline measurement and evidence of improvement

Any project forecasting improvement must have an established baseline. The baseline measure establishes the level of improvement required and the starting values prior to the implementation of the intervention. This is also a good way to determine how improvement will be evaluated. If you are unable to establish a baseline measurement, it will not be possible to measure improvement.

Once a baseline is established, an ongoing measure of progress must be established. What data must be collected in order to measure progress? Is the data currently collected? Who collects the data? Where is it stored? Can it be retrieved? Those unfamiliar with the process of data collection, data retrieval, and data storage should consult with the available resources within their organization to obtain answers to these questions. Many companies employ data analysts or information technology specialists who can assist with these requirements. In the absence of a formal structure, networking can



provide a knowledgeable source. If the measurement will call for the collection of new data, try to incorporate the data collection into the workflow process. Data collection outside of the normal workflow is difficult to maintain and often results in missing data elements. For example, if it is critical to have a medication entered, make entering the medication into the system a part of the assessment process. If you do not "own" the data collection, meaning that the data is dependent upon others entering the data, evaluate the process for collecting the data. For example if medication data comes from a pharmacy benefits manager(PBM), make sure include all fields required for your measurement. Since most PBM's pay pharmacy claims, there is a high likelihood that all medication data will be captured. This is likely a solid data source. However, if the data you need is entered by someone else, or it is an optional field, you will need to work closely with the source to ensure the integrity of the data you receive.

### *Where do you get it?*

Data is housed in multiple places. Unfortunately, many data elements in health care remain stored in pen and paper sources such as medical records. However, the use of electronic data storage is expanding and electronic medical records are becoming increasingly common. Even in the absence of electronic medical records, there is a large amount of electronic data available. Claims and billing data continues to be a solid source of data. Since most people have a strong incentive to submit claims data to enable payment, this is generally complete. A caution in using claims data involves "lag" time. Although everyone generally wants to submit a claim as quickly as possible to receive payment, some submit more quickly than others. The claims or finance manager of your organization can generally estimate the claims lag time for you. Ninety days is usually a safe number. This means that most of the claims will have been received within 90 days of the service provision date.

In theory, any data element entered into a system can be reported. However, the structure of the database that holds the data can either make this easy or more difficult. Again, expert consultation is required to determine the ability to report on a data element collected within the data systems available. Data retrieval plans must include each data element that is required, where that data element is stored, how the data element will be retrieved, and how data integrity will be maintained.

### **How do you enlist support?**

Even if you are a member of the senior management of your organization, obtaining the necessary support for your project is not guaranteed. Most organizations have competing priorities and limited resources. The first rule is trying to utilize resources with which you have influence. For example, you or your co-workers enter the data and produce the report based upon the data. However, this is not always a feasible solution. Many times it is necessary to enlist support from other areas of the organization. One of the first strategies is demonstrating a value to the overall organization. This approach will likely result in your requests gaining a higher level of priority. Many times you will be asking for people to assist you when your requests are outside of their normal job responsibilities, or not a sanctioned project. One way to increase the likelihood of gaining

cooperation is to be sure that you are well organized and knowledgeable regarding your request. This includes the data elements needed, where they are stored, time frames needed, the desired format, and a reasonable time frame for completing the requests. You will also increase your likelihood of success by clearing requests with your manager and the manager of the person of whom you will be making the request.

The key to gaining support is having a clear vision that you are able to communicate. If you are excited about the project and clearly convey how the results will benefit the organization and the patients you serve, the enthusiasm is likely to spark a desire to assist in those whose help is required. Most people are gratified by being able to provide assistance. Remember this when you ask by saying that you "really need their help".

## Analyzing Data

Most of us do not have a statistical analysis background. Larger organizations may have this resource available, but for the most part, this is a resource that is unavailable. If you have a university in your community, you may inquire to determine if your project may be a useful classroom or individual exercise. Absent analytical expertise, there are techniques that will enable you to identify conclusions.

### *Extremes*

Unusual highs or lows, and values outside one or two standard deviations from the mean are usually worth evaluating. Many times such values are erroneous, or represent true variations and should be further analyzed.

### *Trends*

It is important to be able to recognize trends. This can help you showcase an evolving situation that needs attention, or demonstrate early success of an intervention. Readily available programs such as Microsoft Excel can insert trend lines into graphs to help with trend recognition.

### *Pareto Principle*

Essentially, this is what is known as the 80/20 Rule. The 80/20 Rule means that in anything, a few (20 percent) are vital and many (80 percent) are trivial. In Pareto's case it meant 20 percent of the people owned 80 percent of the wealth. This is important to remember when analyzing data. You want to make sure you are focusing your efforts and your programs to focus on the 20% that really matters. For example, we have often heard that "a small percentage of patients accounts for the majority of the costs." This illustrated the Pareto Principle and suggests that our efforts should be directed at the smaller percentage of high cost patients in the above example. With adherence, it may be similar. A small number of patients may account for most of the costs associated with non-adherence, or a few targeted interventions may impact a much larger percentage of patients if they are the vital interventions.

## Data Conclusions

### *Generalization*

Beware of generalization. Study designs vary in their ability to remain valid when generalized. Sometimes there is sufficient evidence to justify using results in a new situation without studying it specifically in that situation, but the generalizability must be justified. It is important to look at the literature associated with the topic to look for similar studies to support the strength of the findings or to identify contradictory findings. Meta-analysis is another technique used to combine the results of a number of studies on a topic and use the effect size to compare the results.

### *Conservative vs. Edgy*

When drawing conclusions from data, some prefer a very conservative interpretation and others prefer to stretch the limits of their findings. For example, the cautions regarding generalization are clear, but some people may seek to exploit their findings by claiming generalizability. Others may choose to use the most conservative interpretation. It is preferable to claim only that which there is evidence to support. Edgy interpretation can boomerang and impugn credibility if the evidence doesn't support the claims. Early in the development of a case management program, one program claimed to save \$50.00 for every one dollar spent on the program. The competing program claimed a savings of \$2.00 for every \$1.00 invested in the program. When the decision makers evaluated the evidence, the 50:1 program could not support their claims. Going forward, every statistic from the 50:1 program was viewed with suspicion, and ultimately eliminated from consideration.

## Presenting Your Case

### *Using "hot" topics to your advantage*

Every organization has their regular "fire drills". This is when some newly enacted, newly discovered, or newly emphasized issue comes onto management radar. Everyone in the company from the CEO on down becomes preoccupied with everything relating to this issue. Identification of a solution becomes a top priority. Many times the ability to link your program to the solution of this issue will gather support that may not be possible at other times. One company implemented a case management program when they became aware of a rapid growth in their population of members over 85 years of age. They recognized the impact this rapid expansion may have on health care costs and were more open and responsive to a program that had real potential to mitigate the impact to their bottom line. When presenting your case, be sure to highlight any potential benefits your program may have on the current hot topic.

### *Where is their pain?*

While the example above describes the crisis mode, most organizations have on-going issues and/or under performance in certain areas. It is important to determine these areas in your organization. As with the "hot topics" above, relating your program, in legitimate ways to on-going improvement efforts will elevate the interest level.

## Speaking CXO

Unless you are a CEO, COO, CFO, or other "C" person, recognize that we have a different orientation and perception than people in those positions. In order to effectively communicate, we have to understand their perspective and speak their language. In most cases, these individuals are stewards of an organization's finite resource. They must balance the often competing interests to assure that resources are allocated to best accomplish the results expected of the organization. Literally, if they allocate resources to one area, it means that those resources are unavailable to another. It becomes incumbent upon us to present the reason that our program will provide the most value for the organization.

One strategy is to demonstrate how your program can help fulfill a need that is required for operation of the organization. For example, if your organization has a contract that requires a certain standard be met and document, show how your program can meet that requirement. This allows for one resource to accomplish multiple objectives and makes it a more attractive return on investment.

## Moving from One to Many

One prominent sales and marketing person is said to have commented that "you don't sell the steak, you sell the sizzle." Case management has a lot to learn in this regard. We are masters at relating anecdotes and success stories of our various cases. This is truly a skill, but it is also "just the steak". The "sizzle" is what this anecdote means, and what it can mean to the organization. For example, a case manager was working with a patient that had mental health, substance abuse, and physical health issues. She had been to the emergency room over 30 times that year, and had been admitted to the hospital several times. The case manager worked with her extensively to connect her to mental health, a substance abuse program, primary and specialty care, and worked to help the patient keep and follow up on appointments. The patient has not been to the emergency room or admitted to the hospital for the past 6 months. This is a great anecdote. Everyone recognized the value in this case. However, to move it from a "this" case to a business case, we need to explain this in the larger context. We could say that we have "x" number of patients with high use of the emergency room at a cost of "y" dollars. By implementing "name your program", we could reduce emergency room use by "z" visits, and save "q" amount of money. Now, we not only have a compelling personal anecdote; we have connected it to the bottom line.

Most of the time when case managers are approached about this they reply that they simply don't have the time to collect the data. At this point in our evolution we simply don't have the luxury of failing to make the business case.

<sup>1</sup> <http://management.about.com/cs/generalmanagement/a/Pareto081202.htm>

<sup>2</sup> [http://www.psyc.memphis.edu/students/craig/3002/11Generalizing Results. ppt261,7,Evaluating generalization](http://www.psyc.memphis.edu/students/craig/3002/11Generalizing%20Results.ppt261,7,Evaluating%20generalization)