



# MEDICATION ADHERENCE: AN EVIDENCE BASED APPROACH

Mary Neiheisel, EdD, MSN, BSN, BC-CNS, BC-FNP, FAANP  
Professor, University of Louisiana at Lafayette

Kathy Wheeler, PhD, NP-C, FAANP  
Assistant Professor, University of Kentucky

Mary Ellen Roberts, DNP, RN, APN-C, FAANP  
Assistant Professor, Seton Hall University



# DO WE HAVE ANYTHING TO DISCLOSE?

- The content of this presentation was developed during a panel meeting and a project on medication adherence funded by Pfizer.
- Panel discussion participants included Dr. Mary Neiheisel, Dr. Kathy Wheeler and Dr. Mary Ellen Roberts
- Drs. Neiheisel, Wheeler and Roberts have no financial or personal relationships with commercial entities (or their competitors) to disclose.



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- Carole Chrvala, PhD  
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- Trish Rippitoe-Freeman, RPh, PhD  
Clinical Associate Professor  
Director, Center for the Advancement of  
Pharmacy Practice at the UK College of  
Pharmacy



# WHAT ARE THE LEARNING OBJECTIVES?

- Describe the continuum of adherence to non-adherence of medication usage
- Analyze the current evidence surrounding significance of non-adherence and barriers to adherence
- Identify practical interventions providers and patients may apply to improve medication adherence





# THE CONTINUUM OF ADHERENCE TO NON-ADHERENCE



Mary Neiheisel, EdD, MSN, BSN, BC-CNS, BC-FNP, FAANP  
Professor, University of Louisiana at Lafayette

“Drugs don’t work in patients who don’t take them.”

C. Everett Koop  
Former Surgeon General





>





# WHAT ARE THE EFFECTS OF NON-ADHERENCE ?

- Poor clinical outcomes
- Higher direct and indirect medical costs
- Social costs (decreased productivity and quality of life)





# WHAT IS THE SIGNIFICANCE OF NON-ADHERENCE?

- Major implications/problems for NPs and HCPs
- Major implications/problems for patients and the health care system



# WHAT IS THE RATE OF NON-ADHERENCE?

- Average non-adherence is 24.8%
- Large disagreement on that number
  - Variation in the definition
  - Difficult to determine



# WHAT IS THE RATE OF NON-ADHERENCE?

- More than one-half of the 3.2 billion prescriptions written annually are not taken as prescribed

$$\frac{3.2 \text{ billion}}{2} = 1.6 \text{ billion}$$



# WHAT IS THE RATE OF ADHERENCE?

- Higher adherence in patients with cancer
- Lower adherence in patients with hypertension, infectious diseases, diabetes, osteoporosis, asthma, C-V disease, COPD, and chronic disease
- Lowest rates are patients with psychiatric disorders, depression, cognitive disorders and the elderly



# WHAT ARE SOME OF THE DETAILS OF NON-ADHERENCE?

- The greater the number of pills ordered the greater the non-adherence
- Adherence in chronic situations falls to less than 50 percent in the first year



# WHAT TERMS ARE USED TO DEFINE NON-ADHERENCE?

- Adherence/non-adherence
- Primary non-adherence
- Early non-persistence
- Preventable and non-preventable non-adherence
- Quantitative goal
- Lack of consensus



# WHAT IS ADHERENCE?

- Degree to which patients' medication behaviors are congruent with the recommendations and instructions of their health care provider regarding timing, dose, and frequency





# WHAT IS MEDICATION PERSISTENCE?

- Duration of time patients take their prescribed medications and is defined as ‘the duration of time from initiation to the discontinuation of therapy.’



# WHAT IS PRIMARY NON-ADHERENCE AND EARLY NON-PERSISTENCE?

- Primary non-adherence is defined as medications ordered but the prescription is never filled while medications that are dispensed once but never refilled are considered to define early non-persistence.



# WHAT ARE EXAMPLES OF PREVENTABLE NON-ADHERENCE?

- When the patient
  - 1) forgets to take medication,
  - 2) misunderstands instructions for medication use, or
  - 3) encounters barriers to obtaining the medication such as lack of financial resources to pay the prescription cost or no transportation to pharmacy



# WHAT ARE EXAMPLES OF NON-PREVENTABLE NON-ADHERENCE AND NON-PERSISTENCE?

- When the patient
  - 1) has a serious mental illness, or
  - 2) experiences an intolerable drug side effect or adverse event



# ARE THERE OTHER EXAMPLES OF NON-ADHERENCE?

- Failing to initially fill a prescription
- Failing to refill a prescription as directed
- Omitting a dose or doses
- Taking more of a medication than prescribed
- Prematurely discontinuing medication
- Taking a dose at the wrong time



# ARE THERE OTHER NON-ADHERENCE EXAMPLES?

- Taking a medication prescribed for someone else
- Taking a dose with prohibited foods, liquids, and other medications
- Taking outdated medications
- Taking damaged medications
- Storing medications improperly
- Improperly using medication administration devices (e.g., inhalers)



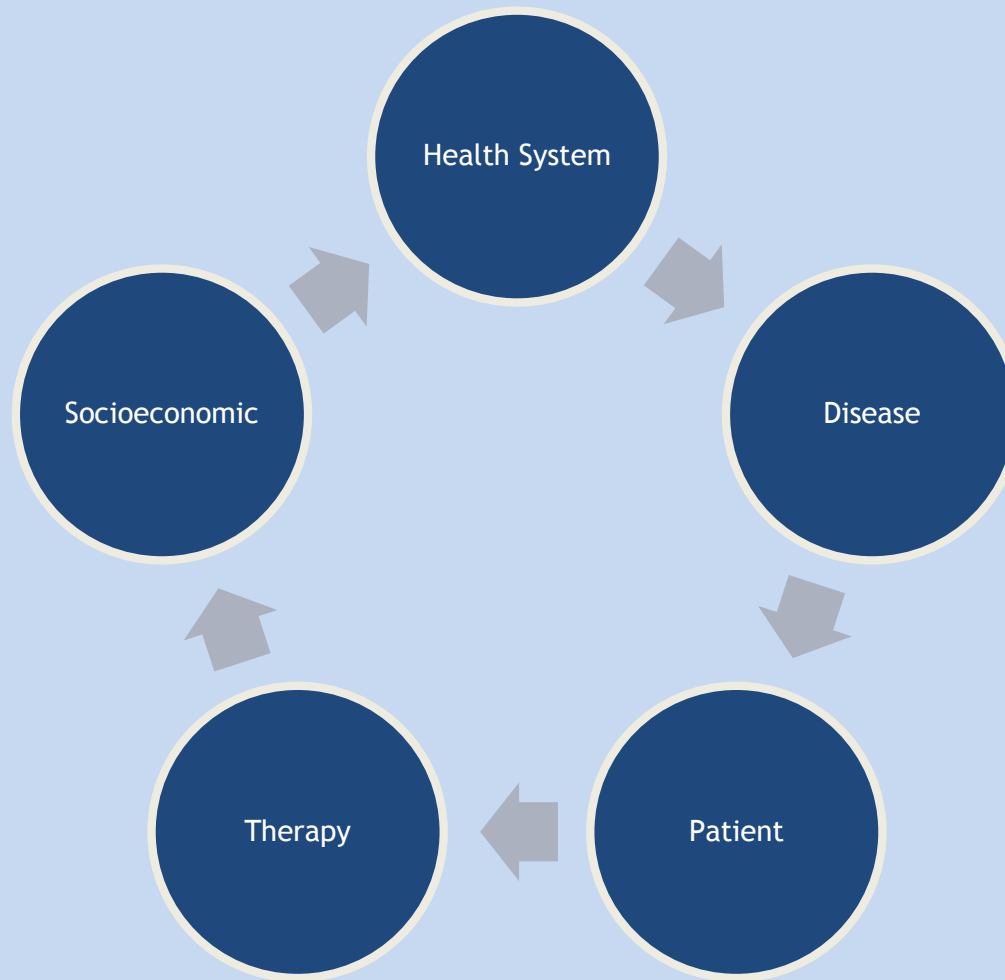
# IS POLYPHARMACY IN THERE ANYWHERE?

- Absolutely!
- Occurs for many of the same reasons





# WHAT FACTORS HAVE A ROLE IN ADHERENCE/NON-ADHERENCE?



# WHY IS ADHERENCE/NON-ADHERENCE SO HARD TO SORT OUT?

Self-reporting

Care givers

Pill counting

Checking pill containers

Data from pharmacy, insurance company,

Patient response or levels of recovery

Morisky medication adherence scale



# WHAT FACTORS INFLUENCE ADHERENCE?

- Knowledge of medications
- Motivation



# WHAT FACTORS INFLUENCE ADHERENCE?



High Knowledge ++	High Knowledge Low Motivation +++	High Knowledge High Motivation ++++
Low Knowledge +	Low Knowledge Low Motivation ++	High Motivation Low Knowledge +++
	Low Motivation +	High Motivation ++

# HOW READY ARE THEY?



**READINESS RULER**



# WHAT KNOWLEDGE DOES A PATIENT NEED REGARDING MEDICATION?



- ◉ Name of the medication?
- ◉ Why are you taking the medication?
- ◉ How much are you taking?
- ◉ When to take the medication?
- ◉ Effects to check?
- ◉ Where do you keep the medication?
- ◉ When is the next refill due?
- ◉ Can the person read the label?
- ◉ What is the disease or illness?
- ◉ How many pills do you take?
- ◉ Morning, night?
- ◉ Positive and negative?
- ◉ Check for storage understanding?
- ◉ Check plan for refilling of medication?

Question

Clarification

# ARE THERE ANY TOOLS TO ASSESS READINESS?

## Morisky Medication Assessment Scale

- ⦿ One of the best
- ⦿ Copywrite protected







# BARRIERS

Kathy Wheeler, PhD, NP-C, FAANP  
Assistant Professor, University of Kentucky

# WHAT ARE THE PREDICTORS OF NON-ADHERENCE?

- Intentional-active choice of patient not to follow regimen
- Unintentional-passive process leading to regimen not being followed (careless, busy, forgetful)



# WHAT ARE THE PREDICTORS OF ADHERENCE/NON-ADHERENCE?

- Predictor characteristics
  - Demographic characteristics
  - Psychosocial and behavioral characteristics
  - Social factors
  - Disease state factors
  - Financial and health system factors
  - Patient-provider relationship
  - Treatment-related factors



# WHAT ARE THE DEMOGRAPHIC CHARACTERISTICS?

- Older patient, to 7<sup>th</sup> decade
- Gender????
- Race (Caucasian)

- Older patient, with offsetting other risk factors
- Gender????
- Race (blacks)
- Lower health literacy/lower education



# WHAT ARE THE PSYCHOLOGICAL AND BEHAVIORAL CHARACTERISTICS?

- Medication benefits
- Culture, religion
- Negative attitudes about medications
- Ineffective
- Symptoms go away
- Medication side effects
- Depression and other psychiatric disorders



# WHAT ARE THE PSYCHOLOGICAL AND BEHAVIORAL CHARACTERISTICS?

- Cognitive impairments
- Lack of confidence/self efficacy
- Drug/ETOH abuse
- Physical impairments



# WHAT ARE THE SOCIAL FACTORS?

- Support by family or members of social network of patient
- Support by healthcare providers
- Stable home environment
- Living alone
- Unmarried
- Homelessness, esp. if being treated for HIV or psychiatric disorders





# WHAT ARE THE DISEASE STATE FACTORS?

- Severity and chronicity
- Progression of the illness
- Severity and chronicity
- Progression of the illness
- Episodic course of illness with variations in severity of sx.
- Illnesses not perceived as serious



# WHAT ARE THE FINANCIAL AND HEALTH SYSTEM FACTORS?

- Insurance coverage
  - Cost, esp. if no insurance coverage
  - Wait time for meds
  - Poor access to pharmacies
  - Lack of transportation
  - Lack of usual source of care



# WHAT ABOUT THE PATIENT-PROVIDER RELATIONSHIP?

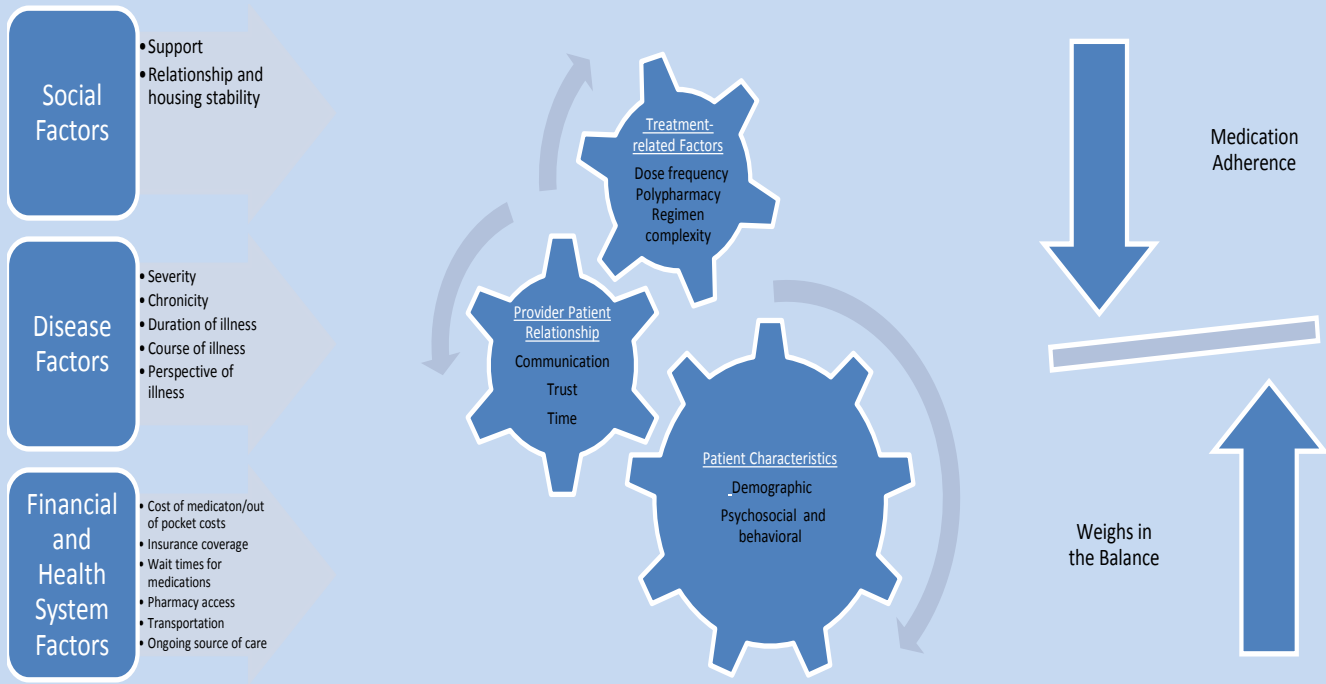
- Trust and good communication with provider
- Collaborative communication/ shared decision making
- Positive verbal behaviors (empathy, support, summarizing, etc.)
- Hmmmm



# WHAT ARE THE TREATMENT RELATED FACTORS?

- Dose frequency
- Dose frequency
- Polypharmacy
- Complexity of regimen (dietary and/or storage requirements)







# INTERVENTION AND SOLUTIONS

Mary Ellen Roberts, DNP, RN, APN-C, FAANP  
Assistant Professor, Seton Hall University



# BROADLY, WHAT ARE THE INTERVENTIONS AND SOLUTIONS?

- Have the conversation
  - Don't just ask "Are you taking your medications?"
  - Drill down to the core issue/s



# BROADLY, WHAT ARE THE INTERVENTIONS AND SOLUTIONS?

- Make it an institutional process
  - Work on it broadly
  - Involve all levels of staff
    - Bring those bottles in!!!
    - Investigate, investigate, investigate
- Focus on provider-patient relationship

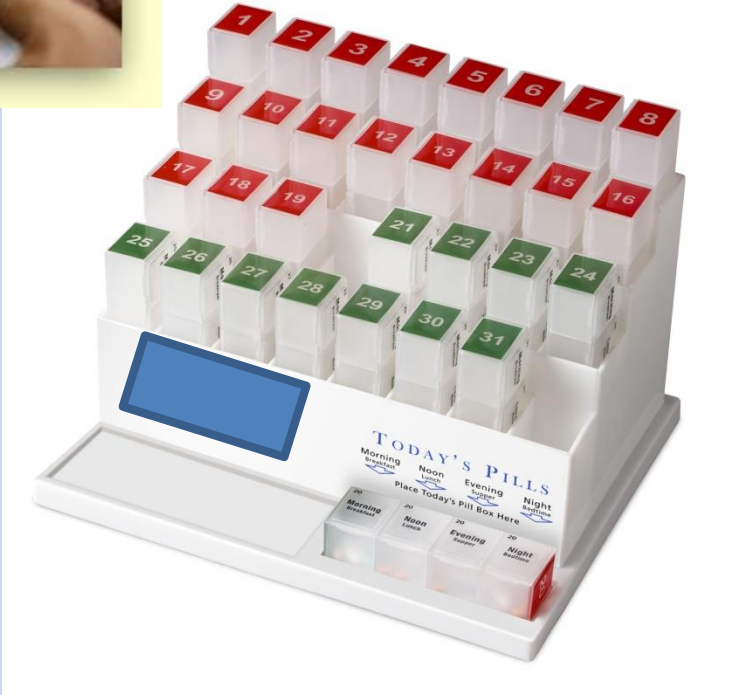




# FOR FORGETFULNESS?

- Pill organizers
- Visual/audible reminders
- Links to ADLs
- Follow-up reminders







# AND FOR LACK OF KNOWLEDGE?

- Client teaching/counseling (MAKE NO ASSUMPTIONS)
  - Reason for the med
  - Clinical parameters
  - Length of therapy
  - What to do if problems
  - Side effects are really pretty rare
- Pharmacist teaching/counseling
- Teach back methods
- Visual aids



### Patient Medication Schedule

Harry Heart

6/11/2006 - 6/17/2006

Sun 06/11	Mon 06/12	Tue 06/13	Wed 06/14	Thu 06/15	Fri 06/16	Sat 06/17	Time	Dosage	Medication & Instructions
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7:00:00 AM	1 cap orally	amoxicillin by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8:00:00 AM	1 tab orally	aspirin by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8:00:00 AM	1 tab orally	atenolol by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8:00:00 AM	1 tab orally	klotrix by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8:00:00 AM	1 tab orally	lisinopril and hydrochlorothiazide by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8:00:00 AM	1 tab orally	metformin hcl by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3:00:00 PM	1 cap orally	amoxicillin by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6:00:00 PM	1 tab orally	klotrix by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7:00:00 PM	1 tab orally	metformin hcl by mouth
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10:00:00 PM	1 cap orally	amoxicillin by mouth





# AND FOR SIDE EFFECTS OR ADVERSE REACTIONS?

- Client teaching
- Follow-up counseling





# AND FOR COMPLEXITY OF REGIMEN?

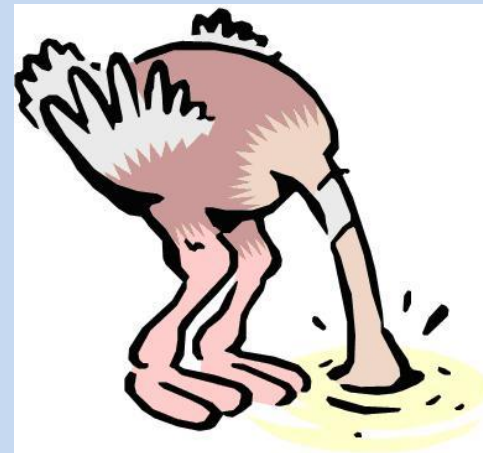
- Adherence aids
- Simplify medication combinations
- Decrease frequency of regimen
- Promote association between ADLs and taking medication





# AND FOR DENIAL?

- Patient readiness
- Education
- Promote association between patient taking medication and quality of life



# AND FOR CULTURAL AND RELIGIOUS BARRIERS?

## ➤ LEARN Framework

- L = listen with empathy
- E = explore and understand patient beliefs
- A = acknowledge differences between patient and provider beliefs
- R = recommend treatment
- N = negotiate an agreement



# AND FOR FINANCIAL BARRIERS?

- Prescribe generics
- Explore alternative avenues to obtain prescriptions
- Provide opportunities for patient discount programs
- Explore financial assistance options



# AND FOR DEPRESSION?

- Identify depressive symptoms
- Assess effectiveness of psychological and/or medical treatments



# AND FOR LOW HEALTH LITERACY?

## ➤ Teaching opportunities

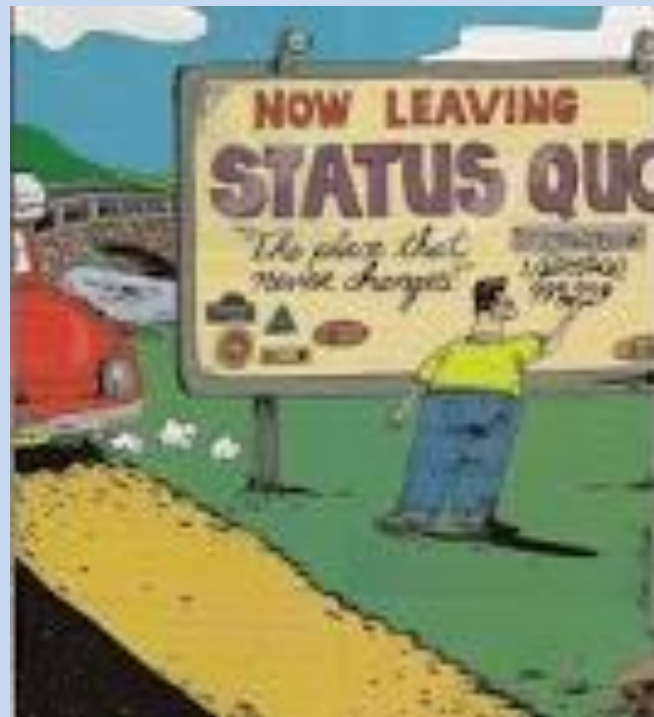
- Written materials at appropriate literacy
- Consider picture based materials
- Remember some rely on oral literacy
- Interpreter
- Use non-technical language
- Visual aids
- Teach back method



# AND FOR POLYPHARMACY?

- Education
- Beware of the prescribing cascade
- Have them bring in their bottles
- Encourage them to go to one pharmacy
- Invest (time & \$) in the EMR





**QUESTIONS?**





# REFERENCES UPON REQUEST

