Medication Adherence in the Elderly with Diabetes: Strategies to Improve Outcomes Amidst Challenges in the Geriatric Population

Monday, June 24, 2019

HARVARD MEDICAL SCHOOL

Beth Israel Deaconess Medical Center

MCPHS UNIVERSITY

WHITTIER STREET HEALTH CENTER
Comprehensive. Compassionate. Community.

Reminders

- Mute your phone to prevent echo and background noise
- Use the chat box to type a question during the webinar
- This webinar is being recorded and will soon be available on the NCECE website: **bit.ly/NCECEwebinars**

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

About the National Center for Equitable Care for Elders (NCECE)

Who We Are: Established in 2017, the National Center for Equitable Care for Elders (NCECE) is a training and technical assistance Center that provides innovative and culturally competent models of care, inter-professional training and educational resources to health care professionals providing care to older adults.

Our Mission is to build strong, innovative and competent health care models by partnering with CHCs, PCAs and FQHCs to provide quality and inclusive care for older adults.

Stay Connected With NCECE After the Webinar:

Twitter: twitter.com/NationalECE

LinkedIn: linkedin.com/company/ncece

Website: ece.hsdm.harvard.edu

Email: ece@hsdm.harvard.edu

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Meet Today's Presenters

Dr. Michael Carvalho, PharmD, BCPP
Assistant Dean of Interprofessional Education
and Clinical Affairs
MCPHS University

Dr. Medha Munshi, MD
Director of Joslin Geriatric Diabetes Programs
Beth Israel Deaconess Medical Center

Dr. Elena Toschi, MD
Instructor of Medicine
Harvard Medical School

Dr. Nikhil Sangave, PharmD
Clinical Pharmacist
Whittier Street Health Center

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Overview

- Medical complexities involved in the treatment.
- Importance of medication reconciliation in transitions of care.
- Motivational interviewing as a means of improving medication adherence
- Utilization of a clinical pharmacist in the community health center to facilitate medication treatment monitoring.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Clinical Case: Mr. G

- Mr. G is an 84-year-old man with a type 2 diabetes diagnosed 15 years ago.
- Mr. G lives alone since his wife passed away 3 years ago. His two children, one son and one daughter live close by and visit him about once week.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Past Medical History:

- T2DM
- Hypertension
- Hyperlipidemia
- Atrial fibrillation
- Osteoarthritis
- Insomnia.

Medications:

- metformin 1000 mg twice a day
- glipizide 5 mg twice a day
- metoprolol tartrate 100 mg twice a day
- hydrochlorothiazide 12.5 mg daily
- lisinopril 10 daily
- apixaban twice a day
- aspirin 81mg daily
- simvastatin 40mg daily
- multivitamin for seniors daily
- calcium and vitamin D twice a day
- acetaminophen 500 mg 1-2 tablets three times a day as needed
- Advil PM one at bedtime for insomnia

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Clinical Case: Mr. G

- About 3 weeks ago, Mr. G developed high grade fever, cough, lethargy, and anorexia leading to fall. He was taken to the emergency department.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

ED Visit

- Mr G. was diagnosed with pneumonia, dehydration, and acute renal failure.

- His vital signs in the ED showed BP 98/68, pulse 102/min, irregularly irregular, and temp; 102.5^{0}F.

- Lab data in ED: HbA1c: 8.3% L SEP Serum creatinine: 2.1 mg/dL BUN: 54 mg/dL L SEP Serum potassium: 3.6 mEq/L, WBC: 14.5 K/ul

- He was admitted for IV antibiotics, fluids, and oxygen therapy.

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

In Hospital – Day 1:

Metformin and glipizide were stopped.
Basal bolus insulin regimen was initiated:
15 units of basal insulin at bedtime and sliding scale insulin before each meals and at bedtime based on the finger stick glucose readings.

His blood pressure was low during hospital stay, therefore lisinopril was stopped and metoprolol dose was decreased to 100 mg once a day.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

In Hospital – Day 2:

Mr. G's appetite improved and his fever and blood count normalized.

He was still weak and unsteady when walking.

His kidney functions also improved, however, serum creatinine was not at baseline.

Patient was evaluated by PT and was transferred to rehab for physical therapy on 3rd day after admission.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Labs at discharge:

Serum creatinine: 1.6 mg/dL (on admission 2.1)

BUN: 28 mg/dL (on admission 54)

WBC: 6.5 (on admission 14.5)

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Discharge from Hospital to Rehab:

Medications:

- basal insulin 15 units at bedtime, sliding scale meal-time insulin before each meal and at bedtime
- metoprolol tartrate 150 mg twice a day
- hydrochlorothiazide 12.5 mg daily
- lisinopril 10 mg daily
- apixaban twice a day
- aspirin 81mg daily
- simvastatin 40mg daily
- multivitamin for seniors daily
- calcium and vitamin D twice a day
- acetaminophen 500 mg 1-2 tablets three times a day as needed
- Advil -PM one at bedtime for insomnia

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Rehab stay:

- Mr. G's strength and overall feeling of well-being improved.
- His finger stick readings were checked by staff of rehab and showed fasting glucose 80-160, pre-lunch glucose; 120-210, pre-dinner glucose: 180-300, and bedtime glucose 190-300.
- Lab data at discharge from rehab: HbA1c: 8.4% Serum creatinine: 0.9 mg/dL BUN: 14 mg/dL

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

At Home:

After one week at the rehab, Mr. G was ready to return home, however, his family was concerned about insulin therapy and his ability to maintain on this complex regimen.

Because of that, Mr. G was switched to pre-mixed insulin 20 units bid. He was also prescribed short acting insulin to be taken before meals and at bedtime as needed based on the sliding scale.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Two-weeks later at PCP's office

- Mr. G visits PCP's office with his son and daughter.
- They were very concerned that Mr G was not doing well with his diabetes. Since his discharge from the rehab, he had fallen at night when he was alone.
- They are also concerned that he is not checking his finger stick glucose readings at each meal as prescribed and forgets to take evening dose of insulin "a few times" a week.
- He has been afraid of falls now and has stopped going for walks daily as he used to do before hospitalization. They have also noticed that Mr. G seems forgetful and confused from time to time. His family would like Mr. G to go to a supervised facility, but Mr. G wants to remain in his house, where he has lived for nearly 50 years.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

At PCP office- Concern #1:

- EMS were called and he was treated for blood glucose level of 45 mg/dL. Since than, his family has been reminding him of taking his meals and snacks between his meals.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

At PCP office - Concern #2:

- They are also concerned that he is not checking his finger stick glucose readings at each meal as prescribed and forgets to take evening dose of insulin “a few times” a week.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

At PCP office -- Concern #3:

- He has been afraid of falls now and has stopped going for walks daily as he used to do before hospitalization. They have also noticed that Mr. G seems forgetful and confused from time to time. His family would like Mr. G to go to a supervised facility, but Mr. G wants to remain in his house, where he has lived for nearly 50 years.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

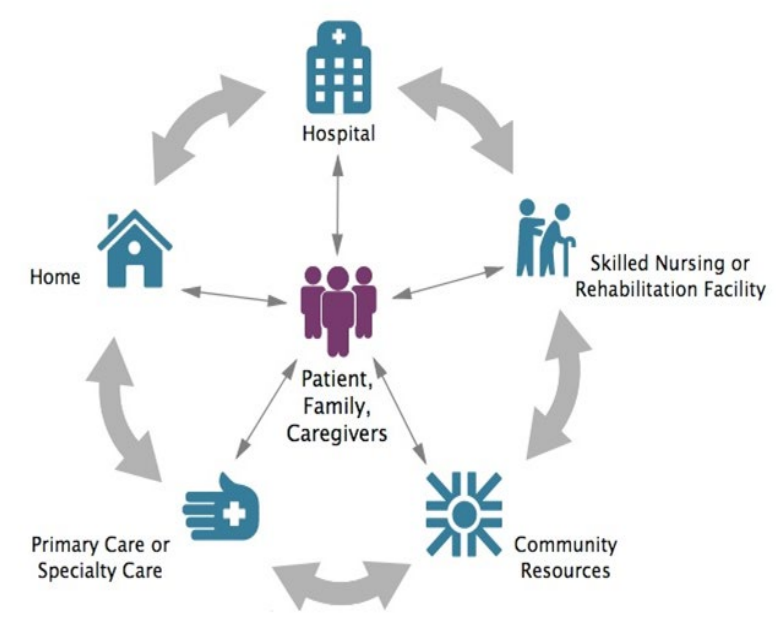
Case Discussion

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Transitions of Care

Centers for Medicare and Medicaid Definition:

"The movement of a patient from one setting of care (hospital, ambulatory primary care practice, ambulatory specialty care practice, long-term care, home health, rehabilitation facility) to another." [1]



When does this occur?

1. Within healthcare a setting
2. Between healthcare settings
3. Between providers
4. Across health states

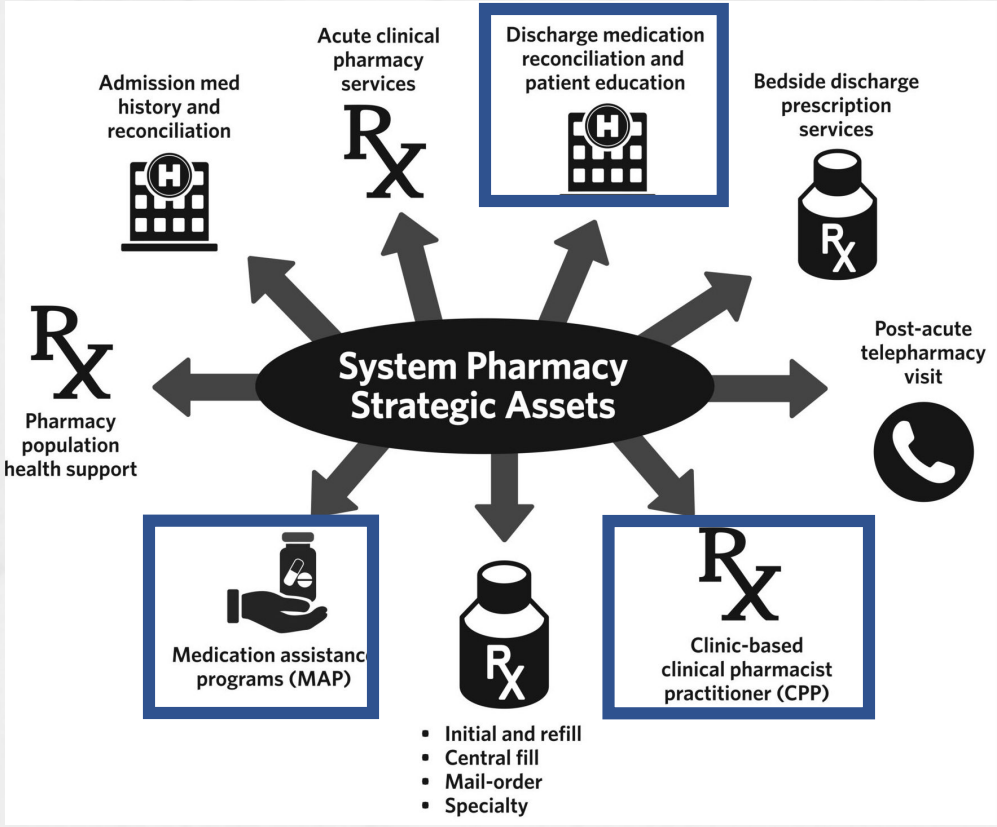
NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

About Transitional Care. (2019, May 03)

Transitions of Care (Continued)

Role of the Pharmacist:

- Medication Reconciliation
- Medication Access
- Medication Education/Adherence
- Communication



CMS. Transitional Care Management Services. 2013.

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Medication Reconciliation

Agency for Healthcare Research and Quality:

- “Medication reconciliation is a complex process that impacts all patients as they move through all health care settings. The process involves comparison of a patient’s current medication regimen against a physician’s admission, transfer, or discharge orders to identify discrepancies. Study data show that an effective process can detect and avert most medication discrepancies, potentially avoiding a large number of adverse drug events and related costs for care of affected patients.”

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Pharmacist Role in Medication Reconciliation

Conducting medication reconciliation:

1. Gather relevant patient information
2. Comprehensive discharge medication list
3. Assess medications
   a. Compare current medications with new medication orders
4. Medication Reconciliation
5. Communicate and document

Table 1 Pharmacist Contribution to Decreased Mortality When Completing Medication Admission Histories[8,a]

Annual number of admissions per hospital with pharmacist-provided admission drug histories (mean ± standard deviation [SD])	11,239 ± 4,462
Annual number of deaths per 1,000 admissions at a hospital with pharmacist-provided admission drug histories (mean ± SD)	38.29 ± 19.67
Annual number of deaths per 1,000 admissions at a hospital without pharmacist-provided admission drug histories (mean ± SD)	47.88 ± 40.18
Reduction in the number of deaths[b]	3,988
Reduction in the number of deaths per hospital (mean ± SD)	107.78 ± 87.6 (20.2%)

[a] Researchers compiled data from 2,836,991 patients in 885 hospitals. Data from hospitals that had 14 clinical pharmacy services were compared with data from hospitals that did not have these services.
[b] Difference in death rates multiplied by number of admissions per year multiplied by number of hospitals.

Table 2 Summary of National Transitions of Care Coalition Strategies to Improve Care Transitions[12]

1. Assess the safe use of medication management by the patient and the family.
2. Ensure a formal process is in place for the safe transition of patients.
3. Actively engage the patient and his or her family in the decision-making process through education and counseling.
4. Transfer and share important information in a timely manner between the patient and other health care providers.
5. Facilitate follow-up care of the patient.
6. The health care provider must be actively engaged in the ownership of the health care of the patient.
7. Accountability for the care of the patient is shared between both the transitioning provider and the receiving provider.

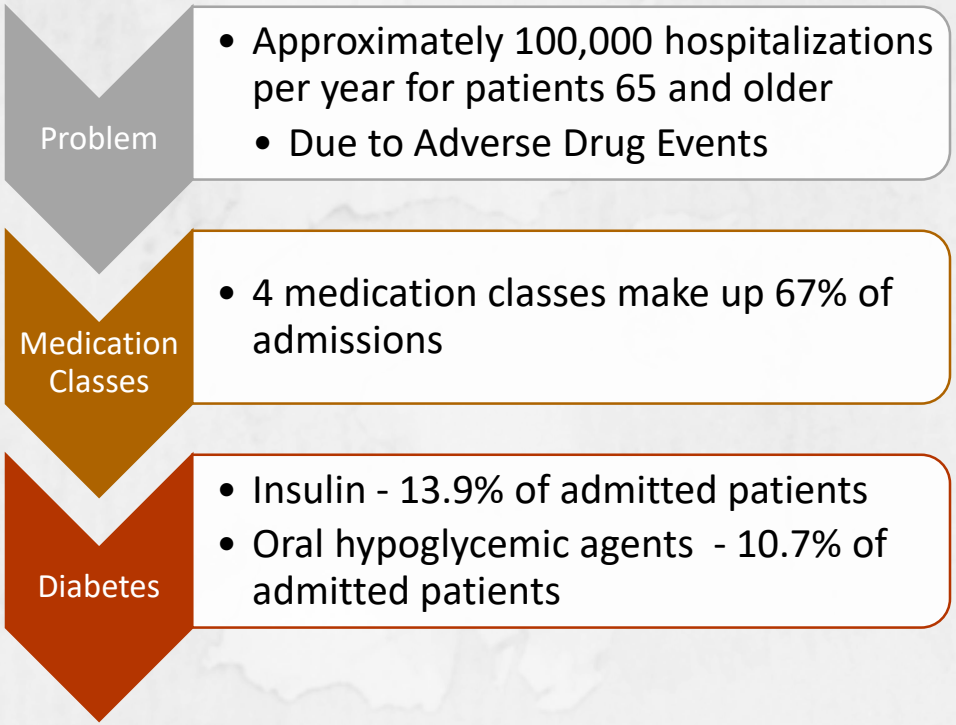
Splawski, J., & Minger, H, 2006

Steeb D et al. Improving Care Transitions: Optimizing Medication Reconciliation. American Society of Health-System Pharmacists . Accessed June 17, 2019.

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

MTM in a Community Health Center

- What is Medication Therapy Management?
  - Patient centered and comprehensive approach to improve medication use
- What is the role of the pharmacist?
  - Medication/Device Counseling
  - Medication Adherence
  - Therapy Optimization



NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Budnitz DS, et al. N Engl J Med. 2011;365:2002–12

Case of Mr. G

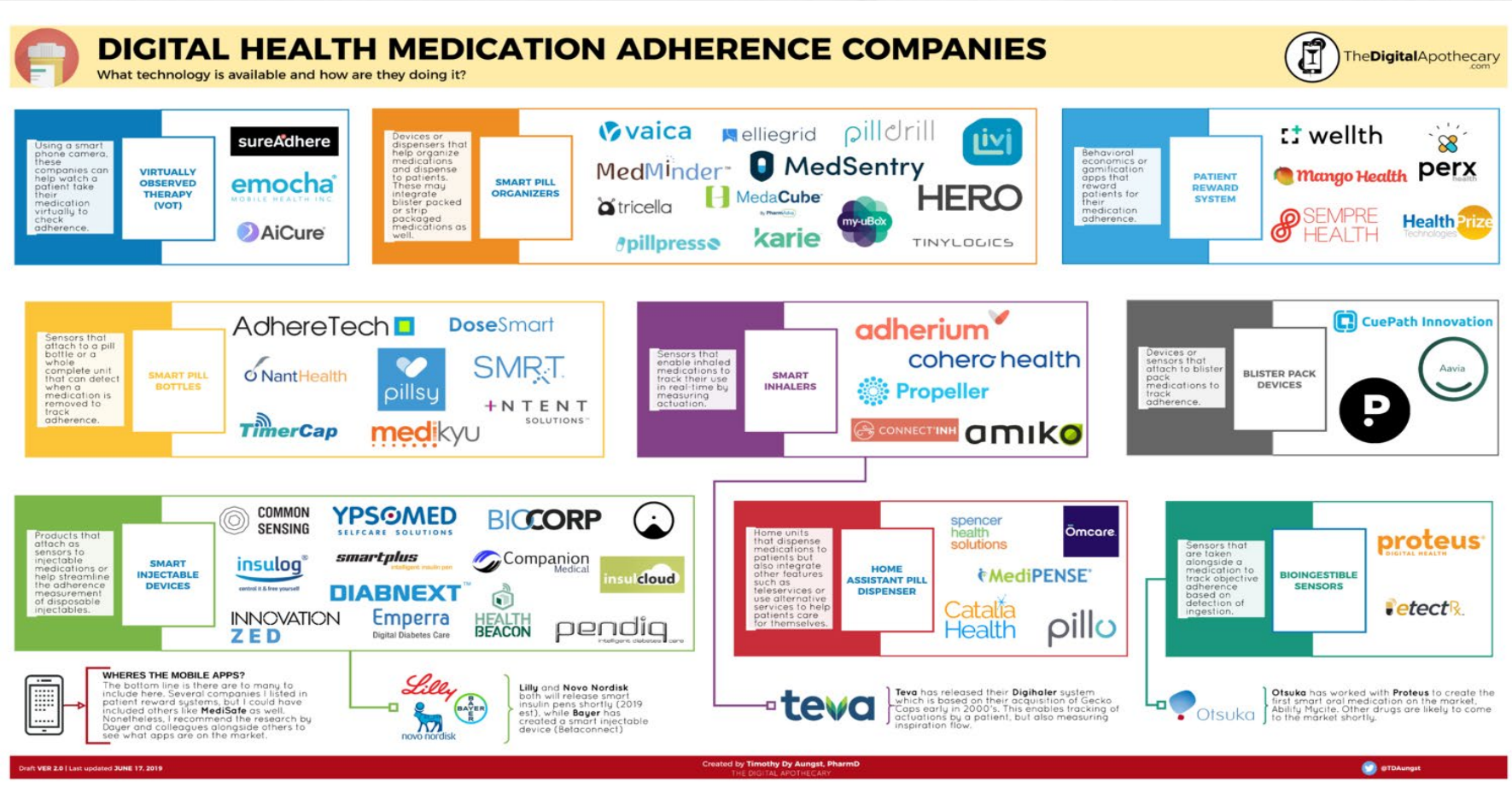
1. Concern 1: Hypoglycemia
   - Goal adjustments
   - Medication adjustments
     - Sliding scale insulin
     - Hypoglycemia minimization (GLP-1 agonists, DPP-IV/SGLT-2 inhibitors, TZDs)

2. Concern 2: Adherence to Medications and SMBGs
   - Family involvement
     - Clinic setup
   - Glucometers
     - Long-term SMBG data

3. Concern 3: Falls
   - Hypoglycemia minimization
   - Cognitive assessment
   - Assisted living

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Digital Health



1. mHealth Apps for diabetes management
   - SMBG logs
   - Medication adherence
   - Insulin calculator
   - Exercise tracking
   - Nutrition
2. Smart connected devices

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Hood M, et al.. *Journal of Beh Med*. 2016;39(6):981-994..

Figure 1. Retrieved from thedigitalapothecary.com

Use of Motivational Interviewing to Assess Non-Adherence to Treatment

- Important to understand the patient's difficulties with treatment prior to formally determining level of medication adherence.
- Patient may have a basic disagreement with treatment, not understand it's relevance, or be *incapable* of complying even when there is intact cognition.
- Intensity of medication changes and complexity of regimen, along with age and disease related cognitive changes also have a large impact.

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Clinician's Need to Challenge Basic Assumptions: Adherence to a "Bad" Treatment Plan

- Is the current treatment regimen appropriate for the patient given his current situation?
- Acute, intensive treatment that was required for a disease exacerbation in the hospital or rehab setting may *not* be required in a more stable environment.
- Transitions in *care* usually require transitions in *treatment.*

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Key Aspects of Motivational Interviewing

- MI Core Principles: RULE
- MI Mindset: PACE
- MI Core Skills: OARS

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

RULE (Principles)

- **R**esist giving direct suggestions to problems.
- **U**nderstand the patients motivation and attempt to elicit patient's own motivation for behavioral change
- **L**isten with a patient centered empathetic approach.
- **E**mpower the patient to take control of his actions and elicit the steps needed to change.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

PACE (Mindset)

- **P**artnership: Collaborate and encourage power sharing in decision-making utilizing the patient's ideas.
- **A**cceptance: Non-Judgmental, empathetic, affirmative approach which emphasizes patient's autonomy.
- **C**ompassion: Acknowledge patient's struggles and experiences in a non-punitive way.
- **E**vocation: Proactively bring out patient's own reasons for change or resisting change and their ideas in eliciting behavioral modification.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

OARS (Skills)

- **O**pen-ended questions: "How is it going?"
- **A**ffirmations: Recognize strengths, intentions and efforts.
- **R**eflective Listening: Listen to the patient, then reflecting his comments back to him to confirm understanding.
- **S**ummaries: Encapsulate the conversation and offering it back to the patient to enhance understanding and reinforce that you have been listening closely.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

Advantages of MI in the Elderly and Cognitively impaired

- Can help determine the degree of cognitive impairment since you are eliciting the patient's reflections.
- Uses the patients own words/ language skills to express their opinions.
- Requires patients to evoke their own ideas to determine their readiness for adherence rather than responding to commands that may not be well understood.
- Can breakdown complexities into a number of simpler steps that may be easier to assimilate for the patient and family.

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS

References

1. *CMS*. Transitional Care Management Services. 2013.
2. Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. Content las reviewed August 2012. Agency for Healthcare Research and Quality, Rockville, MD. https://www.ahrq.gov/professionals /quality-patient-safety/patient=safety-resources/resources/match/index.html
3. Splawski, J., & Minger, H. (2016). Value of the Pharmacist in the Medication Reconciliation Process. *P & T : a peer-reviewed journal for formulary management*, *41*(3), 176–178.

4. Steeb D, Burns A, Owen J, Reilly C, Scheckelhoff D. Improving Care Transitions: Optimizing Medication Reconciliation. American Society of Health-System Pharmacists . https://www.pharmacist.com/sites/default/files/files/2012_improving_care_transitions.pdf. Published March 31, 2012. Accessed June 17, 2019.
5. "Centers for Medicare and Medicaid Services ". US Dept of Health and Human Services . 1/18/2018 <http://www.cms.hhs.gov/>. OutcomesMTM

6. About Transitional Care. (2019, May 03). Retrieved from https://www.pcori.org/topics/transitional-care/about-transitional-care
7. Transitions of Care Summary. (2014, May). Retrieved from https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/downloads/8_Transition_of_Care_Summary.pdf
8. Marcinko, D. E. (2017, November 17). On Medication Therapy Management (MTM). Retrieved June 17, 2019, from https://medicalexecutivepost.com/2017/11/18/on-medication-therapy-management-mtm/
9. Smart Retailing Rx. (2018, March 12). Pharmacist as provider: A view of the future. Retrieved June 17, 2019, from https://join.healthmart.com/business-and-operations/pharmacist-provider-view-future/

10. Hood M, Wilson R, Corsica J, Bradley L, Chirinos D, Vivo A. What do we know about mobile applications for diabetes self-management? A review of reviews. *Journal of Behavioral Medicine*. 2016;39(6):981-994. doi:10.1007/s10865-016-9765-3.

11. .Haque S, D'Souza.A. Motivational Interviewing: The RULES, PACE and OARS. *Current Psychiatry*. 2019;18(1):27-28.

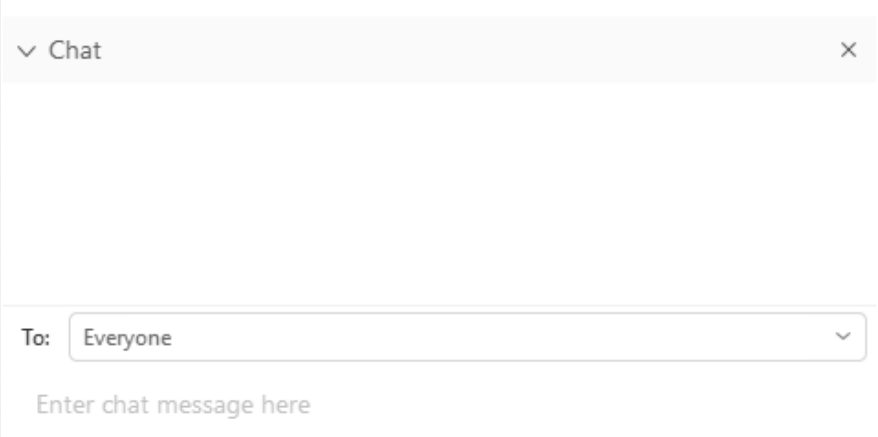
12. Palacio A, et al. Motivational Interviewing Improves Medication Adherence: a Systematic Review and Meta-Analysis. *Journal of General Internal Medicine.*2016 31(8):929-40.

13. https://motivationalinterviewing.org/ Resources for those seeking information on Motivational Interviewing:The Motivational Interviewing Network of Trainers (MINT), an international organization committed to promoting high-quality MI practice and training.

NATIONAL CENTER FOR EQUITABLE CARE FOR ELDERS

Questions?

Please use the chat box to type in your question.



Thank you for participating!

NATIONAL CENTER
FOR EQUITABLE CARE FOR ELDERS