

Wednesday, 12:30 – 2:00, E6

Working to Ensure Safe and Effective Use of Medication by People with Developmental Disabilities

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Objectives:

1. Identify effective methods for the practical application of concepts related to improving the delivery of services for persons with developmental disabilities
2. Identify advances in clinical assessment and management of selected healthcare issues related to persons with developmental disabilities
3. Discuss the ethical issues related to persons with developmental disabilities

Notes:

Working to Ensure Safe and Effective Use of Medications by People with Developmental Disabilities

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Objectives

- Identify effective methods for the practical application of concepts related to improving the delivery of services for persons with developmental disabilities
- Identify advances in clinical assessment and management of selected health care issues related to persons with developmental disabilities
- Discuss the ethical issues related to persons with developmental disabilities and medication management
- Identify and emphasize attitudes to enhance the opportunities for persons with DD to achieve their optimal potential (self-administration and monitoring of medication).

Medications are Effective

- Efficacy versus Effectiveness
 - Clinical trials versus real life
- Disease control
 - Take hypertension as an example
 - Clinical trials on medications, diet, exercise show these interventions reduce blood pressure
 - Population based cohort studies show benefits of treatment in reducing stroke, renal failure, heart failure
 - Observational studies also confirm benefit of interventions

Safe Use of Medications

- Overwhelmingly, medications are safe for use
- Problems occur due to
 - Medication side effects, unintended effects
 - Administration errors
- Approximately 1.3 million people injured annually in U.S. by medication errors

National Coordinating Council for Medication Error Reporting and Prevention

Illness in People with DD

- People with DD are living longer
 - People with Down Syndrome in 1983 mean age of death was 25 years. In 2000, it was 58.6 years
- Chronic illness
 - Hypertension, Diabetes, Asthma, Osteoarthritis
- DD Condition-related illness
 - Mobility-related problems, seizures, sensory impairment
 - Gastrointestinal, endocrine (thyroid), dementia
- Medications play an important role in controlling chronic illness, as well as acute problems

Yang et al 2002

Disparities

- Mortality, Life expectancy
- Morbidity
- Uptake of health promotion and disease prevention activities
- Health care access
- Utilization
- Quality

Ouellette-Kuntz H. Understanding health disparities and inequities faced by individuals with intellectual disabilities. J Applied research Intel Disabil 2005;18:113-121

Medication Related Problems in General

- Under-treatment
- Over-treatment
- Poor adherence
 - Up to 50% of people prescribed a medication do not continue it or will take less than prescribed
- Inappropriate drug selection (prescriber, patient)
- Adverse events occur in up to 25% of people in the community

Gandhi TK, Weingart SN, Borus J, et al. Adverse drug events in ambulatory care. N Engl J Med 2003;348:1556-1564

Medication Use Process

- Patient presents to the health care provider
- Decision made to prescribe/discontinue medication
- Prescription communicated to pharmacy or taken to the pharmacy
- Medication is acquired
- Medication is taken home/stored
- Medication taken (self, administered)
- Monitor therapy - observe and report intended and unintended effects
- Reorder – repeat cycle

Patient presents to the health care provider

- Insufficient numbers of health care professionals with experience working with patients with DD.
 - Doctors reported inadequate training in areas of behavioral or psychiatric conditions, human relations and sexuality, complex medical problems, preventative care for people with DD
- Over 90% indicated wanted more training

Phillips A, Morrison J, Davis RW. General practitioners' educational needs in intellectual disability health. J Intellect Disabil Research 2004;48:142-149.

Presents to health provider

- Communication
 - Patient-Caregiver dyad
 - Presence of caregiver promotes interaction and patient autonomy in decision-making
 - Provided caregiver does not dominate
 - People with DD were dissatisfied with doctor-patient communication
 - Time
 - Communicating what will happen during the exam
 - Lack of 2-way or 3-way communication

Presents to the health care provider

- Access
 - Physicians/clinicians who will take patients with DD
 - Transportation
 - Proximity
 - Reliability
 - Physical access to the building/room/equipment

Decision made to prescribe/discontinue medication

- Must have accurate, reliable data
 - Communication difficulties
 - Patient
 - Health provider
 - Caregiver
 - Incomplete data from home
 - Diaries, monitoring charts, medication lists
 - Medical records from other physicians

Decision to prescribe/discontinue

- Clinicians should speak directly to patient as well as caregiver
- Encourage the patient to be actively involved
- Ask provider to use pictures or diagrams if necessary to explain
 - Aided communication strategies – need time

Prescribing – Things to Ask

- Name of medication (brand, generic), what it is used for, what its supposed to do
- How long to take? When to take?
- What food, drinks, supplements, other medicine should be avoided or cautious
- Side effects (including time to side effect)
- When to expect medicine to work
- Cost and availability, insurance coverage
- Monitoring
- Dosage form, tablet size, taste of liquid

Prescribing: Electronic medical records are great, but...

- One study found 60% of patients in a health system which uses electronic medical records had at least one discrepancy in the electronic medication list
 - Commission 36%
 - Omissions 27%
 - Duplications 11%
 - Alterations 19%
- Be aware of client's medication; have an accurate medication list, make sure all prescribers have access to the updated list

Linsky A, Simon SR. Medication discrepancies in integrated electronic health records. *BMJ Qual Saf* 2012. Doi:10.1136/bmjqs-2012-001301

Prescription communicated to pharmacy or taken to the pharmacy

- Electronic – computer to computer
- Written prescription
- Telephoned
- About 4-7 % of prescriptions never picked up
 - Why?

Medication is acquired

- Read carefully any written information provided by the prescriber or pharmacy
- At the pharmacy, its OK to ask to be counseled on your medicine
 - Also ask the pharmacist what is the most important thing to know about this medicine?
- Have an up to date medication list, which includes drug name, strength, directions for use. This includes nonprescription drugs and supplements
 - Share with doctors, pharmacists, other prescribers

Obtaining the Medication from the Pharmacy

- Issues
 - Insurance coverage
 - Out of pocket expenses
 - Drug availability (shortages)
 - Prior authorization
 - Not carried by the pharmacy
- Issues may delay therapy, lead to nonadherence
- Mail order versus community pharmacy
 - Internet pharmacy?

Written Medication Information Directly for the Person with DD

- Study of people with IDD, to determine gaps in medicine knowledge and information sources.
- 66% of subjects were receiving help with their medicines.
- No effect on knowledge gained or understanding.
 - Of 21 people with mild to moderate cognitive impairment, 52% could read their prescription medication labels.
 - 84% knew the medication name or could explain or describe the medicine.
 - 65% knew the indication for using the medicine.
 - 48% knew of contraindications or things to avoid
 - 62% knew of adverse effects.
- Poor study design, poor description of study participants. Not enough information on the development and testing of the information documents.

Strydom A, Hall I. Randomized trial of psychotropic medication information leaflets for people with intellectual disability. J Intell Disabil Res 2001;45:146-151.

Medication is acquired

- As a caregiver, you may know that the client may not like or be able to handle certain dosage forms
 - Large tablets or capsules
 - Inhalers
- Check to see what the medication looks like in anticipation of any medication taking problems.

Medication is taken home/stored

- Storage issues
 - Refrigeration, freezing, light sensitive
 - Safe so that other residents/room mates cannot obtain
 - Diversion
 - Expiration date
 - Prescription, nonprescription medications
- Safety tops versus easy-off tops
- Transfer to reminder boxes or systems
- Transfer to smaller portable containers for day use

Medication Administration

- Self administered, guided self administration, caregiver administered
- All require understanding of basics
 - Drug name and look
 - Time of dose
 - Dose
 - Special instructions
 - Special technique

The 5 Rs of Medication

- Right person
- Right medication
- Right dose
- Right time
- Right documentation

Medication Management

- Medication management is a dynamic process
- Includes evaluation to determine needs and interests
- Support should be provided in accordance with the individual's plan
- The plan should consider the individual's skills/interest and must be individualized to address expectations and needed
- Needs may be affected by changes in health and behavior.
- Needs should be reevaluated when changes in health and behavior
- Adaptive equipment may be needed to promote functional independence

Caregiver Administration Safety and Errors

- Very few studies for people with DD
- Most studies are associated with hospitals (nurses), pediatrics (parents), people with dementia (spouse, family)

Med Errors - Review

- 91 unique studies were included in a review of the literature
- Median error rate was 19.6% (range 8.6 to 28.3%) of total opportunities for error
- Wrong time, omission, wrong dose the 3 most common errors
 - Others include unauthorized drug administered, poor administration technique (inhaler, injection)
- Cardiovascular, nutrition-blood products, gastrointestinal, CNS, anti-infective drugs most common drug categories

Keers RN, Williams SD, Cooke J, Ashcroft DM. Prevalence and nature of medication administration errors in health care settings: a systematic review of direct observational evidence. *Ann Pharmacother* 2013; 47. doi: 10.1345/aph.1R147

Medication Self-Administration

- In the general population, some patients have difficulty in sharing the burden of quality control in health care and medication self-administration.
- Researchers examined electronic copies of all US death certificates (49,586,156) for 1983 and 2004.
- Domestic fatal medication errors not involving alcohol and/or street drugs increased by 564% between 1983 and 2004.
- Authors highlight the need to
 - Evaluate patients' capacity to manage their own medicines
 - Educating patients about the risks associated with their medications
 - Monitoring patient performance.

Phillips DP, Barker GEC, Eguchi MM. A steep increase in domestic fatal medication errors with use of alcohol and/or street drugs. *Arch Intern Med* 2008;168:1561-1566

Med Pass Errors People with DD

- Disguised observation study to identify the frequency of administration errors as well as the determinants for those errors in the Netherlands in an institutional setting (series of group homes) where people with IDD lived.
- 953 drug administrations to 46 clients were observed.
- 25.4% of doses had at least one error.
 - When wrong time errors were excluded, 22.4% of doses had at least 1 error.
 - The primary error had to do with administration technique errors, such as giving a med with meals rather than before meals; giving a medication via feeding tube while the enteral feeding was still being administered (increasing drug-food interaction).
 - Inhalation meds were associated with errors. The authors state that inhalation orders and respiratory drugs were two predictors of administration errors.
- None of the observed administration errors were formally reported to the voluntary reporting system, representing a substantial amount of underreporting.

Van den Bemt PMJA, Robertz R, de Jong AL, van Roon EN, Leufkens HGM. Drug administration errors in an institution for individuals with intellectual disability: an observational study. J Intel Disab Reseach 2007;51:528-534

DD and Med Admin

- 13 month's worth of data from a single provider agency. The agency operated 14 residences for 41 individuals with IDD, with 150 staff members.
- Data were obtained from incident reports, medication error reports, and administrative files. Data included demographic descriptors of the residents, personnel variables, system delivery variables, and environmental variables, as well as staff demographics, medication regimens in the residences.
- Staff data included age, gender, hours worked, time of day, and date of certification for medication administration training.
- Medication errors sorted by type of occurrence, transcription, and documentation problems.

Stupalski KA, Russell GE. Reported medication errors in community residences for individuals with mental retardation: a quality review. Mental Retardation 1999;37:139-146. Roseman and Booker, Scholtz, Galdstone.

Medication Administration Errors

- 462 scheduled medications that were given on a daily basis, 112 were psychotropic.
- A total of 182,952 scheduled medication doses were administered during the 13 months study period.
- 221 analyzable medication errors. 35 of the 41 residents (85%) experienced at least one reported medication error.
- The error rate was 0.12% of administered doses. (Remember the source of the data). Consistent with literature, omissions, transcription errors, and wrong dose were most common errors.
- 65% turnover rate among staff.
- Residences with the most medication doses per day had the most medication errors. Smaller residences had lower staff turnover rates.
- 23 staff members made 35 serious errors. 14 staff who made serious errors also made 3 or more med errors during the study period. Medication errors based on work shift were disproportionately higher on days on which the highest number of part time and interim staff members were working. As well, most errors made at the end of a work shift.

IDD Study

- Examples of medication errors include omitted doses; medications not given as directed, administration of unauthorized medication, and errors in preparation
- People with DD are at risk for medication errors due to not understanding therapy, communication problems, having multiple diagnoses and complex functional, medical, and behavioral problems.
- Two-thirds of people with DD have chronic medical conditions for which staff members with limited training and high turnover rates administer medications

Stupalski KA, Russell GE. Reported medication errors in community residences for individuals with mental retardation: a quality review. *Mental Retardation* 1999;37:139-146

Repeated Errors – Nursing Home

- Repeat medication errors, or identical events occurring multiple times in the same patient, may be particularly preventable.
- Assessed factors that contribute to repeat medication errors and the association between repeat medication errors and patient harm.
- Medication errors reported to the North Carolina's Medication Error Quality Initiative system were analyzed.
- 37.3% of reported errors were repeated one or more times (5615 errors). Among repeat errors, the associated event within each error was repeated a mean of 10.7(14.3) times.
- Wrong dosage (65.1%) and wrong administration (10.2%) were the most frequent events. Multivariate analysis found predictors of fewer repeat errors: younger residents, residents able to direct their own care compared to cognitively impaired residents.

Crespin DJ, Modi AV, Weil D, Williams CE, Greene SB, Pierson S, Hansen RA. Repeat medication errors in nursing homes: contributing factors and their association with patient harm. *Am J Geriatr Pharmacother* 2012;6:258-270.

Health Literacy

Important factor associated with administering medications safely

Health Literacy Definition

- How well people comprehend health care information
- The ability to read, understand, and use health care information to make effective health care decisions and follow instructions for treatment

Institute of Medicine

Scope of the Problem

- Estimated that 89 million people in the U.S. lack sufficient health literacy to effectively undertake and execute need medical treatments and preventive health care
- About 14% of U.S. adults have health literacy skills below basic level
- Affects all segments of the population
 - Elderly
 - Poor
 - Minority
 - English as a second language

Problems Associated with Low Health Literacy

- Poor use of preventative care
- Worse self-management of chronic disease
- Incorrect medication use
- Increased hospitalizations
- Increase in all cause mortality and cardiovascular death

Factors Associated with Low HL

- Ability to read – general literacy
- Amount of experience in the health care system
- Complexity of information presented
- Cultural factors that influence decision making
- The way the health information is communicated

Medication Administration

- The Big Picture is the Medication Use Process
 - From prescribing, acquiring, storing, administration, documentation, monitoring, reordering
- People with I/DD are often reliant on others for medication administration
- Medication Administration
 - Determining which med should be given at specific time, dose, route, special techniques
 - Follow the “Five Rights”

Inadequate Health Literacy Among Paid Caregivers of Seniors

Lindquist et al. J Gen Intern Med 2010;26:474-479

- Objectives: determine health literacy levels and association between HL and medication administration errors (standardized skill test)
- 98 paid unrelated caregivers of seniors
- Assessment
 - Test for Functional Health Literacy (TOFHLA)
 - Medication Administration/Dispensing Test

Findings

- Inadequate HL found in 35.7% of caregivers
- 60.2% of all caregivers made errors with the Medication Administration Test
- Significant and meaningful difference in scores on medication administration test based on level of health literacy

Current Study – Specific Aims

- Measure the HL of caregivers of adults with I/DD
- Measure the association between HL and ability to perform on a standardized medication administration skills test
- Identify caregiver characteristics associated with HL and with performance on medication administration skills test

Subjects

- Unpaid caregivers (50) and employed direct care staff (50) aged 18 years and older caring for person who takes one or more prescription medications
- Unpaid caregivers recruitment through Arcs
- Direct care staff recruitment through service providers/agencies
- Approved by human subjects committee
 - Written informed consent
- Incentive

Recruitment

- Newsletter announcement
- Mailings
- Recruitment letters handed out with paycheck

Data

- Short Test of Functional Health Literacy in Adults (STOFHLA)
 - Samples ability to read and comprehend actual hospital and medical texts; quantitative information and reading. Monitoring blood glucose, keeping clinic appointments, taking medications, instructions for preparation of upper GI, Medicaid patient rights, hospital informed consent
 - Score range 0 to 36
 - 0-16 inadequate; 17-22 marginal; 23-36 adequate

Medication Administration Skills Test

- Five medication vials with labels mimicking pharmacy labels. Contents are placebo pills.
- Must interpret drug name, strength, instructions for use.
- Must fill a 7 day medication storage box with appropriate number of pills and at the appropriate times of the day based on prescription label
- Timed test
- Score range 0 (lowest) to 15 (highest)

Other Data

- Demographics
- Education
- Work experience with medical-related tasks
- Work related training – medication administration
- Personal experience with medication-related tasks

Health Literacy Preliminary Findings

- Nineteen people enrolled to date
- 16 females, 3 males
- Average age 52.5 (± 14.2) years, range (24-74)
- STOFHLA score average 34.5 (± 3.2), range 22 to 36 (only one case in Marginal category)
- Medication Administration Test average score 12.4 (± 2.2), range 8 to 15
- Correlation between STOFHLA and Medication Administration Test = 0.75, $p < 0.001$

Health Literacy Study

- Goal is 50 people (more), well on the way
- Demonstrate that health literacy is important to assess in caregivers as being associated with ability to understand medication administration task
- Training programs should understand that caregivers may have limited understanding of the health care process
 - Education
 - Resources

Health Literacy of People with DD?

Self-Administration

Self-Medication - CMS

- 3/18/2011 clarification of self-administration of medications: Requires the interdisciplinary team (IDT) to develop and implement training objectives for individuals, determined to be appropriate for self administration of medications unless the client's physician specific otherwise.
- The IDT must determine, based on comprehensive assessment, whether an individual possesses, or has the potential to develop, the requisite skill set needed to safely self administer medications and individually tailor training objectives to advance the individual toward the goal of self administration.

Self-Administration

- Goal: for the individual to develop skills and gain independence in medication management overall.
- The individual's ability to self administer medications is determined by an assessment process, perhaps an assessment tool. The individual requiring support may possess many skills but may not be able to independently self-direct.

What are the characteristics needed to safely self medicate?

Interpretation of self-directed medication management

- Obtaining
- Using as prescribed or recommended
- Monitoring for efficacy and/or side effects
- Reporting concerns to the practitioner
- Assuring adequate supply

Patient Characteristics Necessary to Successfully Self-Administer Medications

- Cognitive skills
- Behavior or emotional status
- Functional/motor ability/physical dexterity/hand strength
- Sensory and communication skills
- Numerical literacy
- Complexity of medication regimen
- Environmental considerations (safely stores and accesses medication); uses adaptive devices independently or with limited assistance
- PRN medications – assessment of individuals ability to determine when to use and how much.
- What else?

Assessing Ability to Self-Medicate

- Not a lot of literature on assessment of medication regimen complexity, self-medication assessment, and DD
- Capacity to manage medications may be linked to medication adherence as well as medication errors.
- A number of assessment scales have been developed and tested for elderly people

What processes do you use to assess an individual's ability to self-medication or guided (supported) self-medication?

Tools to Assess Capacity to Self-Medicate

- No tools specific to people with DD, at least in the medical literature
- Primarily developed for older patients, physical rehabilitation, focused groups of patients (heart failure, post-stroke)
 - Medication Management Ability Assessment
 - Drug Regimen unassisted Grading Scale
 - Hopkins Medication Schedule
 - Medication Management Instrument for Deficiencies in the Elderly
 - **Characteristics of scales (mode of admin, length, concepts covered)**
 - **A good tool would identify deficits, some of which may be remediated**

Complexity of Medication Regimens

- Total number of prescriptions
- Number of fills for medications in different classes
- Number of chronic medications
- Number of doses per day
- Special techniques
- Number of physicians
- Number of pharmacies
- Number of pharmacy visits per month, synchronization

Complexity of Medication Regimen

- Examining cholesterol therapy and drugs used to treat hypertension (ACE-I, ARBs)
- Medication adherence was assessed
- Patients with the least refill consolidation (synchronization) had adherence levels 8% lower.
- Greater number of prescribers, greater number of visits to pharmacies, greater number of pharmacies, associated with lower adherence

Choudhry NK, Fischer MA, Avorn J, Liberman JN, Schneeweiss S, Pakes J, Brennan TA, Shrank WH. The implications of therapeutic complexity on adherence to cardiovascular medications. Arch Intern Med 2011;doi:10.1001/archinternmed.2010.495

Other Medication Administration Issues

Medication Disposal

- What do you do with medications that have been discontinued or past expiration date?
- Survey of medication users
 - Over 50% throw in household garbage
 - 31% flush
 - 15% return to pharmacy or physician's office
- 80% of people said they never receive information about proper disposal
- Concern
 - Contamination of drinking water
 - Diversion

Wieczorkiewicz SM, Kassamali Z, Danziger LH. Behind closed doors; medication storage and disposal in the home. *Ann Pharmacother* 2013; doi: 10.1345/aph.1R706.

Medication Disposal

- Prescription and nonprescription drugs
- Controlled substances: take back day
- Cities may have household hazardous waste collection day
- For solid medications such as pills and capsules, add a small amount of water to at least partially dissolve them. Seal the container with duct or other opaque tape
- For liquid medications, add enough table salt, flour, charcoal, or nontoxic powdered spice such as turmeric or mustard to make a pungent, unsightly mixture. Seal the container with duct tape or other opaque tape.
- For blister packs, wrap in multiple layers of duct tape. For unused ampules, vials, and IV bags, do not open them. Wrap with duct tape to minimize breakage, and place in an opaque plastic container.
- Mixing in kitty litter. Just make sure it is placed into a container and sealed before placing in trash.

Pouring and measuring liquids

- There are multiple devices used to measure liquids. The objective of the study was to determine the rate and magnitude of liquid medication dose errors that occur with patient/caregiver use of various measuring devices.
- 300 people participated. The devices with the greatest error were, for a 5 ml dose; 5.552 ml for 17 people who used the regular (etched) dosing cup and 4.66 ml for the dosing spoon (n=10).
- Only 34 cases (11.3%) had errors of greater than 10%. Approximately 1 in 10 participants measured doses of liquids with a volume error greater than 10%.

Ryu GS, Lee YJ. Analysis of liquid medication dose errors made by patients and caregivers using alternative measuring devices. *J Manag Care Pharm* 2012;18:439-445

Medication Crushing Dilemma To crush or not to crush...that is the question

- One on hand, crushing a tablet is a convenient way to administer a medication that is too large, client will not tolerate, or that is not available as a liquid.

Crushing Medications

- Many medications cannot be crushed for various reasons.
 - Some are enteric coated, which is important for increasing drug absorption or adverse effects in the stomach.
 - Other drugs are packaged in a time-release formula or even a time-release capsule. Examples include: Enteric coated aspirin. Metoprolol XL. Crushing a delayed release product will lead to too much drug being available for absorption and drug toxicity can occur. There is a do not crush drug list that health professionals often consult.

Crushing Medications

- Before crushing a medication, caregivers should obtain the OK to do so from the patient's physician and/or pharmacist. There may be liquid or sublingual forms of the medicine, but a doctor must write a new prescription if there is to be a change in therapy.
- Another factor to consider when crushing medication is whether the person administering the medication is sensitive to it. Crushing may lead to product being aerosolized or getting on to a caregivers skin, lungs, or eyes.
- Some products can be compounded. Specialty pharmacy practice which prepares medication ordered by a doctor for a particular patient in a form not available by manufacturer. Prescribers should be part of the decision to use a compounded product.

Monitor therapy

- Intended effect of medication
 - Disease control
 - Side effects
- Blood pressure monitoring
- Blood glucose monitoring
- Peak flow meters
- Fever
- Symptom assessment
- Others?
- Monitoring may lead to changes in therapy – documentation

Reorder – repeat cycle

Other Medication Related Issues

Transitions of Care

- Moving from one living setting to another, often temporary setting
 - Home to hospital and back again
 - Home to vacation
- Daily routine changed, altered
 - Includes medication
- Errors can occur at many points in a transition

Transitions and Medication Errors

- Transcription by the health professional
- Education of the patient and caregiver
- Who "owns" the medication list?
 - Caregiver is essential in making sure the medication list is current and accurate
- What do you do with the client's medication?
 - Hospital policies? Facility policies?

Medication Reconciliation

- When a person is admitted to a health care facility, there should be assessment of meds prior to admission. When discharged, should be another assessment of medications, possibly with follow-up
- Study of VA patients discharged to skilled nursing facilities.
 - One time, 2 hour visit before discharge, medication coordination, communication with outpatient providers, education of caregivers
 - Readmission rate 23% usual care versus 14% intervention ($p=0.02$). Intervention group also had shorter stays when readmitted.

Park HK, Branch LG, Bulet T, Vito BB, Roever CP. Influence of a transitional care clinic on subsequent 30-day hospitalizations and emergency department visits in individuals discharged from a skilled nursing facility. J Am Geriatr Soc. 2012; DOI: 10.1111/j.1532-5415.2012.03051.x

Transitions

- When transitioning, obtain an updated medication list
- Compare the list to previous medication list
- Ask questions about any new medication or changes in dose and frequency
- Ask if any special instructions
- Ask for written directions and well as educational information if available
- Ask for contact information for questions
- Other?

Technologies

- Medication packaging
- Medication dispensing in the home
 - Automation
- Reminder systems
 - Take meds
 - Reorder meds
- Monitoring systems

Dispensing Products

- Regular prescription vials with weekly/monthly reminder system at home
- Customized Medication Packaging
 - Bubble packs- 30 day supply
 - Strip packets – 30 day supply
- Useful for organizing, reminding to take
 - Problems can still occur
 - Changes in therapy
 - Others?

Simple Technology

- Systems give the user an audible or visual cue (or both)
 - It's up to the user to follow through and actually take the pill. Unusually work for simple medication regimens and schedules. Medication reminders can be as simple as a wrist-watch alarm or as complex as a programmable smartphone app. They are generally very portable, which means that older adults can incorporate them very easily into their daily routines.

Reminders Plus Dispenser

- Some medication adherence systems combine a reminder with a dispensing mechanism that releases medication doses at times or intervals specified by the user.
- Some devices only dispense one medication at a time. Others can handle several medications that must be taken on different schedules.
- Generally, these dispensers are not portable and require electric or battery power.

Reminder, dispenser and monitor

- The most advanced at-home medication systems remind the user to take medication, provide the pill, and record the date and time the user took the pill.
- Some devices use the Internet or a telephone line to report this information to a server that creates a medication adherence record and can alert a clinician and/or caregiver via e-mail or text messages.
- This communication helps professional and family caregivers track whether the older adult is taking medications properly. If problems occur, the caregivers can intervene before an ADE occurs. Some of these devices are portable, while others are larger.

Other Technologies Used?

How do you determine when to use?
Who determines what to use?
Who pays for it?

Health and Medication Information

This is a topic that warrants it's own presentation

Caregiver

- Qualitative study of caregivers beliefs and attitudes about administering psychotropic medication
- Six factors emerged
 - General attitude to compliance, or noncompliance
 - Caregiver adhering to the medication regimen as directed by the doctor
 - Caregiver displaying generic attitudes towards the use of medication for psychiatric illness
 - Caregiver holding a confused attitude towards the continued use of medication upon symptom relief
 - Caregiver questioning the benefits of the medication
 - Influence of the medical team on compliance (feeling it is up to the doctor to decide when the client should go off medication)

Rasaratnam R, Crouch K, Ragan A. Attitude of medication of parents/primary carers of people with intellectual disability. J Intellect Disabil Research 2004;48:754-763.

Caregiver Feelings and Attitudes

- Overall attitude towards medication is a composite of both favorable and unfavorable attitudes towards the benefits and negative consequences of taking medications.
- It was found that family caregivers and professional caregivers were similar in their beliefs toward positive attitudes about medication, but that family and DSP were significantly different in feelings about negative attitudes.
- Negative attitudes include strong dislike of the negative consequences such as side effects and addiction, with an appreciation of benefits in other areas such as reduced psychotic symptoms, or a strong extreme negative attitude including a minimization or denial of any benefits to be gained from the medicine. Generally speaking, there may be genuine positive belief about medication, but a strong negative belief (side effects).

Knowing Your Limits

The caregivers should be aware of their limits in the medication administration process.

Feel comfortable and safe asking questions about the use of a medication, how it is administered, or how to monitor the therapy.

Caregivers should be familiar with knowledgeable and reputable sources for information. These may include the direct support staff coordinator, the pharmacist, or the prescriber.

Summary

- Medication related problems occur
- The prescribers, caregivers, and clients need to be on the same page – communication
- Caregivers should be knowledgeable, comfortable and confident, when administering medication.
- Know when to go for help
- Know where to go for help
- Let's not forget including the client in the process
 - Assessment, Education, Inclusion
- Don't be afraid to check out technologies that may help, when needed.
- Other take home messages?
