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CAHF - 2019

Adverse Drug Events – a 4 Billion Dollar Problem

4 Ways to Reduce the Occurrence of Preventable ADEs

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Learning Objectives

At the end of this session, attendees will be able to:

1. Describe the impact of ADEs in Long Term Care
2. Articulate the value of teams and communication in preventing ADEs
3. Implement practical approaches and technology systems to reduce the risk of ADE's and improving outcomes when ADEs occur

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Defining Adverse Drug Events

An adverse drug event (ADE) is defined as **harm** experienced by a patient (resident) as a result of **exposure to a medication**.

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Industry Background

ADE's in Healthcare – The Numbers

700,000 ED visits annually

120,000 hospitalized as a result of ADEs

> 65 years, **2x** more likely to go to ER with ADE symptoms

> 65 years, **7x** more likely to be hospitalized from an ADE

- **4x** more likely to be hospitalized as a result of an ADE than a younger adult

1/6 hospital admissions of those **> 65** years related to ADE

1/3 hospital admissions of those **> 75** years related to ADE

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ADE's and Long-Term Care
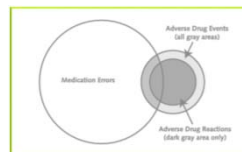

ADE's in LTC

ADEs are the most **clinically significant** medication-related problem in Nursing Homes

- 93,000 deaths/year, **$4 billion** in excess healthcare expenditures
- 37% of all adverse events in LTC related to ADE
- ~2,000,000 ADEs annually in NH
- ~135 ADEs in each nursing home
- 1/7 NH residents will be hospitalized due to ADE
- **800,000** are deemed **preventable**

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Aging and Medications

Medications have a different effect on the elderly
Age-related Physiologic changes:
- Kidney – less able to excrete drugs into urine
- Liver – less able to metabolize (break-down) drugs
- Cardiac – less able to distribute the drug
- Decrease H_2O availability in tissues – ↑ drug concentration
- ↑ in % body fat – drugs dissolving in fat accumulate at higher levels

Side effects can be exacerbated
    Constipation
    Confusion
Co-morbidities increase need for medications increases risk of interactions and side effects

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Addressing Preventable ADE's

Preventable ADEs

Focus should be on **risk identification and prevention**
Study = of all ADEs that occurred, **42%** were **preventable**
- Increased to 61% of all ADEs considered serious/life threatening

Resident Risk Identification
    Increased age
    Number of Medications
    Type of Medication (High Risk)
    Multiple Co-morbidities
    Impaired Kidney/Liver Function
    BMI/Nutrition

Process Risk Identification
    Medication Management
    Transitions of Care (planned/unplanned)
    Number of prescribers
    Staff Training

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Risks in Medication Management

Pharmacovigilance

Pharmacovigilance is defined as the science and activities related to the detection, assessment, understanding and prevention of adverse effects or any other drug-related problem.

Medication Errors can **increase risk** of an ADE
- Can occur any time during management of medications
- Education and autonomous reporting
- Encourage identification and process improvements

Prescribing practices can **decrease risk** of an ADE
- Reduce number of prescribers
- Clinical Decision Support during ordering process – drug to drug, duplicate therapy, dose checking
- High Risk medication identification and management

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Medication Administration and Documentation

Closed loop systems

Frequency of medication administration management
- PRN and Standing
- Prevent administration **too soon**

Alerts and Notifications
- Alerts indicating **drug to drug** interactions
- **Black Box** warnings

Forced Compliance
- **Required** documentation, Vitals, PRN follow-up, charting explanations

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Monitoring and Oversight

- Maintaining error rates **below 5%**
- Stay on top of process – **audit**, **audit**, **audit**
- Review **timing** and **number** of meds per pass
- Work with **pharmacists** and **physicians** to reduce medication usage or reduce frequency where possible with similar alternate therapy
- Implement **monitoring activities** where applicable
- Dashboards and support
- **Education** back to families and aides

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Use of Teams to Mitigate Risk

Care Aides and Risk

First line help in determining what symptoms of decline to look for in this resident.

- Include signs and symptoms associated with new or high-risk medications on POC devices so that CNAs know what to look for
- Most common side effects noted in ADE's:
  - Confusion – disorientation, change in cognition, falls
  - Over sedation – sleepiness , lethargy, falls
  - Delirium – delusions, acute confusion, pallor, sweating, warm to touch, falls
  - Bleeding – bruising, constipation, black stool, confusion, dizziness, falls
  - GI Symptoms – diarrhea, constipation, bloating, pain, increased or decreased sounds, falls
- Use prompts and alerts to communicate what should be observed for and when those symptoms are observed.

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Families and Risk

- Families help establish behavioral and physical norms
  - Helps in differentiating expected from unexpected
- Educate families as to potential side effects that should be monitored
- Encourage reporting of ANY changes away from the expected norms for this resident
- When family are in – provide tick sheets or access to POC for documentation of observed changes

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Physicians and Pharmacists and Risk

Best medication administration practices
- Start low and go slow
- Once a day dosing reduces risk of error/improves adherence
- Ensure appropriate symptom monitoring is in place and communicated
  - Technology to support outcomes
- Instead of medicating for symptom relief, try a different medication
- Education before Medication
  - Documentation before administration

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Physicians and Pharmacists and Risk

Drug Utilization and Medication Regimen Reviews
- Psychotropic drug reduction strategies
- Lowest possible dose strategies
- Alternate therapy options
- Overall drug utilization
- PRN/Standing order reviews – pain medications, opiates, antipsychotics
- Looking for inappropriate medications
- Identification of high-risk medications

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Increasing Awareness with High Risk Drugs

High-Risk Medication - A medication that has an inherent narrow therapeutic index and/or has the potential to cause serious adverse events when not used *appropriately*.

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What are High Risk Medications?

Seemingly **normal**, **everyday medications** can have very **serious effects** on the elderly
- Benadryl   (confusion, decrease appetite, constipation)
- Aspirin   (GI symptoms, bruising, internal bleeding)
- Zantac   (delirium)

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High Risk in LTC Daily Use

Warfarin
- Bruising
- GI/intracranial bleeds
  - Confusion, fatigue, lethargy, pallor
- Stroke

Insulin
- Sliding scales are listed as most risk and **NOT** recommended in the elderly
- Hypoglycemia
  - Increases risk for falls
  - confusion

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High Risk in LTC Daily Use

Xanax
Klonopin
Valium
Ativan
Ambien

Benzodiazepines
- Dose tolerance
- Risk for falls increases, and fractures
- Confusion/delirium
- Memory loss
- Respiratory depression
  - Change in coloring, SOB, breathing slowly

Digoxin
- Confusion
- Heart Block
  - Dizziness
  - Fainting (Syncope)
- Headaches

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High Risk in LTC Daily Use

Opioids

- Sedation – lethargy, over sleeping, nodding off in activities or lunch
- Decrease in appetite
- Decrease respirations
  - Change in coloring
  - Breathing slowly
- Falls
- GI symptoms
  - Nausea
  - Vomiting
  - CONSTIPATION

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High Risk in LTC Daily Use

Anti-psychotics

- Drowsiness
- Dizziness
- Restlessness
- Blurred Vision
- Low BP
- EPS – Parkinson's like symptoms

- Seizures
- Decreased white cell count
- GI symptoms
  - Nausea
  - Vomiting
  - CONSTIPATION
  - Dry Mouth

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High Risk in LTC Daily Use

- CMS, JCHAO
  - List of high-risk medication but not just for the elderly
- Beers List – specific to people >65 years, developed by panel experts in geriatrics
  - Increase nursing awareness
  - Monitor for adverse effects
- Provides a list of medications to avoid, the rationale, strength of evidence to support adding the medication to the list and alternatives where possible
- Professional and Consumer versions available
- Can be used as an education guide for staff – by classification

https://www.guidelinecentral.com/summaries/american-geriatrics-society-2015-updated-beers-criteria-for-potentially-inappropriate-medication-use-in-older-adults/#section-420

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ADE Risk and Transitions of Care

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Admission/Readmission

Medication Reconciliation - "a formal process in which healthcare providers work together with patients, families and care providers to ensure accurate and comprehensive medication information is communicated consistently across transitions of care."

- Consultation with resident, family, transferring setting, pharmacies, and physician's involved in care
- Determine a comprehensive list, compare treatment to diagnosis and symptoms
- Modify for setting and treatment moving forward
  - Appropriateness/risk
  - Dosing
  - Possible alternatives

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Transfer/Discharge

Transfer
- Ensure clear communication of resident's medical needs and treatments
- CCD – Continuity of Care Document/Transfer Form
  - Standardized
  - Comprehensive
  - Eliminates the need to find and print or photocopy reems of information
  - Human or machine read

Discharge
- Clear MARs and TARs
- Discharge instructions
  - Appointments
  - Next doses
- Prescriptions
- Drug information sheets
  - Remind family or care giver of high risk medications side effects and potential ADE symptoms

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Improving Outcomes when ADEs Occur

Response to ADEs

- Recognition that symptoms are present
  - Monitoring
  - POC devices
  - Team
  - Education

- Communication that symptoms are present
  - Secure Messaging/Texting
  - Mobile access to charts
  - COPE

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Conclusion

End notes….

- ADEs pose significant physical risk to patients and financial risk to institutions and care givers
- Team work is a must
- Implement systems to reduce risk
  - Resident risk
  - Process risk
- Use technology to improve:
  - Risk for error
  - Transitions of Care
  - Communication
  - Outcomes

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