

# Identifying & Preventing Adverse Drug Events In the Elderly

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## Atlantic Quality Innovation Network (AQIN)

- The federally funded Medicare Quality Innovation Network – Quality Improvement Organization (QIN-QIO) for New York State, the District of Columbia, and South Carolina.
- Led by IPRO.
- Partners include
  - Delmarva Foundation in the District of Columbia and
  - The Carolinas Center for Medical Excellence in South Carolina.
- One of 14 QIN-QIOs operating across the U.S.

## Atlantic Quality Innovation Network (AQIN)

- Works toward better care, healthier people and communities, and smarter spending
- Catalyzes change through a data-driven approach to improving healthcare quality.
- Collaborates with providers, practitioners and stakeholders at the community level to share knowledge, spread best practices and improve care coordination.
- Promotes a patient-centered model of care, in which healthcare services are tailored to meet the needs of patients.

# Objectives

**Define adverse drug event (ADE)**

**Discuss patient specific factors that contribute to ADEs in seniors**

**Identify ADEs of commonly prescribed meds**

**Apply knowledge to avoid future ADEs**

# Adverse Drug Event Definition

**ANY undesirable experience associated with the use of a medical product in a patient**

# Contributing Factors

**Kidney function**

**Liver function**

**Multiple medications**

**Multiple health conditions**



# Most Common ADE Medications

**Blood thinners**

**Diabetes medications**

**Opioids (controlled substance pain reliever)**

# Blood Thinners

**Coumadin (warfarin or jantoven)**

**Eliquis**

**Pradaxa**

**Xarelto**

**Plavix (clopidigrel)**

**Aspirin**



# Concerns with Blood Thinners

**Adherence**

**Blood work**

**Drug/Food interactions**

**Drug/Drug interactions**

# Adherence

**Is the patient taking the medication as prescribed?**

**Are doses missed?**

**Does the pharmacy have the medication in stock?**

**Has the prescriber changed your dose since writing the prescription?**

# Blood Work

**Coumadin, warfarin, and jantoven require regular blood level monitoring**

**Do you know how often you need to have your blood tested?**

**Do you know what range your blood work should be in?  
When was your last blood draw?**

# Drug/Food Interactions

**Coumadin, warfarin, and jantoven all have interactions with certain foods and vitamins**

**Are you aware of the foods that should be avoided or eaten with consistency and moderation?**

**Are you willing to abide by these dietary considerations for the entire time taking this medication?**

# Drug/Food Interactions

## Foods or vitamins containing vitamin K

What happens if you have too much of a food containing vitamin K?

What contains vitamin K?

- Leafy greens – kale, spinach, brussels sprouts, collard and mustard greens, chard, and green tea
- Cranberry juice
- Alcohol



# Warfarin/Antimicrobial Interactions

This Does NOT include all possible interactions

## Antimicrobials include:

- Antibiotics
- Antifungals
- Antivirals
- Anti-infectives



# Antibiotics

**Amoxicillin**

**Ampicillin**

**Augmentin (amoxicillin/clavulanic acid)**

**Avelox (moxifloxacin)**

**Bactrim (sulfamethoxazole/trimethoprim)**

**Biaxin (clarithromycin)**

**Cipro (ciprofloxacin)**

**Dicloxacillin**

# Antibiotics

**Doxycycline**

**Ery-Tab (erythromycin)**

**Levaquin (levofloxacin)**

**Minocycline**

**Ofloxacin**

**Pen VK (penicillin)**

**Tetracycline**

**Zithromax (azithromycin)**



# Antifungals

**Diflucan (fluconazole)**

**Griseofulvin**

**Itraconazole**

**Ketoconazole**

**Miconazole**

**Terbinafine**

**Voriconazole**

# Antivirals

**Aptivus (tipranavir)**

**Crixivan (indinavir)**

**Invirase (saquinavir)**

**Lexiva (fosamprenavir)**

**Norvir (ritonavir)**

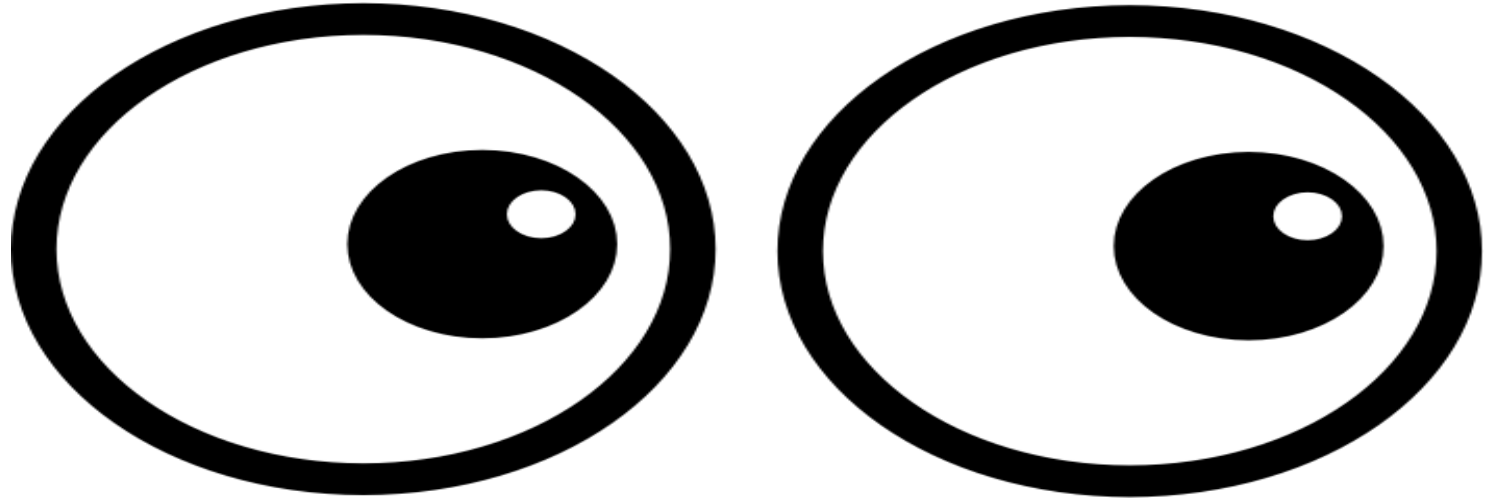
**Prezista (darunavir)**

**Tamiflu (oseltamivir)**

**Viracept (nelfinavir)**

# Other Anti-infectives

## Flagyl (metronidazole)



**What to look for...**

# Signs of Bleeding

Increased bruising

Bleeding gums/nose

Bright red blood in stool

Black (tarry) stool

# Signs of Clotting

## Stroke

- **Facial drooping**
- **Numbness or weakness on one side of the body**
  - **Arm**
  - **Leg**
  - **Entire side of body**
- **Speech difficulty**

# Signs of Clotting

## Heart Attack

- Chest pain
- Arm pain
- Trouble breathing
- Tightness in chest
- Nausea
- Cold sweat
- Lightheaded



# Signs of Clotting

## Deep Vein or Arterial Thrombosis (clot)

- **Pain in an extremity**
- **Swelling**
- **Redness**
- **Numbness**



# Diabetes Medications

Almost all diabetes medications

Includes oral and injectable medications

Too many to list



# Concerns with Diabetes Medications

## Blood sugar levels going too LOW

- **Blood sugar = blood glucose**
- **Low blood glucose = hypoglycemia**

## Adherence

## Blood work

## Drug/drug interactions

# Low Blood Sugar

**Even taking diabetes medications correctly can lead to low blood sugar**

**Can be dangerous...even life threatening**

**At home monitoring can help identify and prevent low blood sugar**

**Knowing the signs and symptoms of low blood sugar is key!**

# Signs & Symptoms of Low Blood Sugar

**Confusion\***

**Sweating/chills\***

**Shaking\***

**Dizziness\***

**Nervousness/anxiety\***

**Nausea\***

**Rapid heart beat**

**Seizures**



**Irritability\***

**Headache\***

**Weakness\***

**Tiredness\***

**Blurred/impaired vision**

**Lack of coordination**

**Anger or sadness**

**Unconsciousness**

\* Most Common

# How to Treat Low Blood Sugar

**Consume 15-20 grams of glucose or simple carbohydrates**

**Check your blood glucose after 15 minutes**

**If blood glucose is still low, REPEAT**

# Examples of 15 grams of glucose/simple carbohydrates

**Glucose tablets (see instructions on package)**

**Glucose gel (see instructions on package)**

**4oz (½ cup) of juice or regular soda (NOT diet)**

**1 tablespoon sugar, honey, or corn syrup**

**Hard candies, jelly beans, or gumdrops (see package to determine how many to consume)**

# Tips for Avoiding Low Blood Sugar

**Take medications exactly as prescribed**

**If you miss a dose, do NOT double up on the next dose**

**Monitor blood sugar as directed by your prescriber**

**Learn to recognize the signs of low blood sugar early so you can treat it before it becomes worse**

# Causes of Low Blood Sugar

Taking more of your medication than is prescribed

Not eating your normal amount of food

Being sick

Increase in physical activity from normal

Taking medications that interact with your diabetes medications





# Interactions/Medications

## Taking multiple diabetes medications

- Additive effect of lowering blood sugar

## Antibiotics

## Alcohol

**\*\*Not an all inclusive list\*\***

# Help Yourself!!

**Wear a med alert bracelet or something that will alert others that you are diabetic in case you become unconscious**



# Opioids

- **Used to treat moderate to severe pain**
- **Need to be used with caution in the elderly**
- **Controlled substances**
- **Have abuse and addiction potential**

# Concerns with Opioids

## Opioids can cause...

- Drowsiness
- Dizziness
- Confusion
- Decreased breathing
- Lowered blood pressure
- Nausea
- Constipation



**ALL of these INCREASE risk of FALLS**

# How to Avoid Opioid Issues

- **ONLY** take if absolutely necessary
- Take as little as possible to treat pain
- Do **NOT** take any medication that is not prescribed to you
- Do **NOT** share your medication with others
- Store your medication in a safe/secure place
- Dispose of medication properly

# What now??

You know 3 drug classes that are associated with high incidence of ADEs

You know what symptoms to look for

**BUT**

**What do you do...**

# When You Recognize a Sign/Symptom?

- Immediately treat to avoid worsening of problem
- Notify your doctor and/or pharmacist
- If severe, go to nearest emergency room



# How to Prevent ADEs



- Only take medication prescribed for you
- Do NOT share your medications with others
- Take your medications exactly as prescribed
- Never skip a dose or increase a dose unless instructed to do so by your physician
- Ask your pharmacist or doctor before taking any over the counter or herbal medications

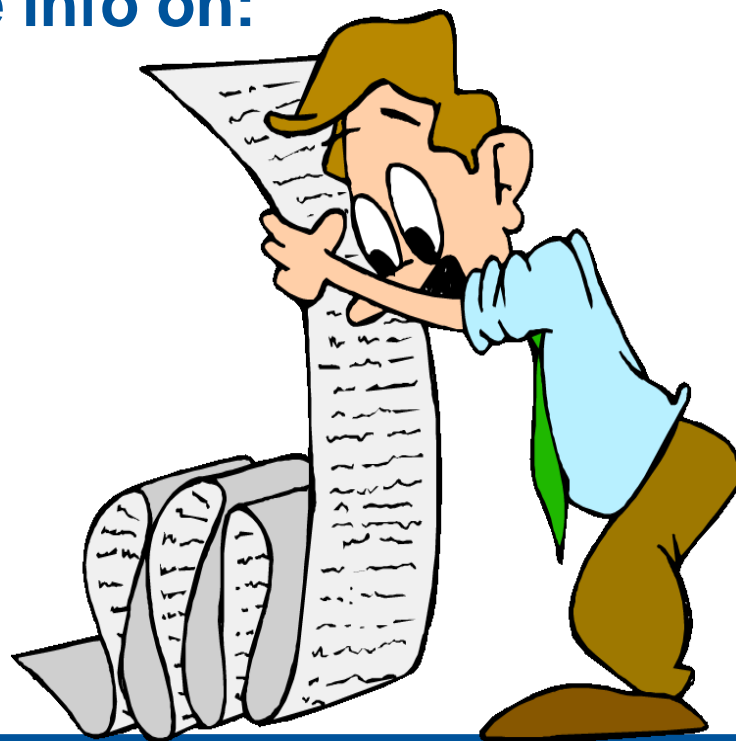


# How to Prevent ADEs

**ALWAYS** have a list of your medications with you

**The list should include up-to-date info on:**

- Medication name
- Strength
- How often you take it
- Why you take it
- Prescriber



# How to Prevent ADEs

Inform **EVERY** physician of **ALL** medications you are currently taking

- Including over the counter and herbal medications

Get **ALL** medications from the same pharmacy

- If you have to use different pharmacies, tell each pharmacist **ALL** of the medications you are taking



# How to Prevent ADEs

**ASK QUESTIONS!!!!!!**

**Be your own advocate**

**Don't expect your prescriber to ask all the right questions**

**Don't expect your prescriber to know all the medications you are taking**

# How to Prevent ADEs

**KNOW** your medicine!

**KNOW** your pharmacist!!

Ask questions about your medications

Confirm with your pharmacist that all new prescriptions are okay with what you are currently taking

# Choose the best answer

Alice is on warfarin and started an antibiotic 4 days ago. Now she is having black, tarry stools. What should she do?

- A.** Wait and see if it goes away in a couple days
- B.** Call her doctor
- C.** Go to the emergency room
- D.** Stop taking the antibiotic
- E.** Stop taking her warfarin

# Choose the best answer

What could Alice have done to prevent this from happening?

- A.** Tell the prescriber she is a warfarin patient
- B.** Tell the pharmacist she is a warfarin patient
- C.** Give a list of all her meds to the prescriber
- D.** Ask the pharmacist if the antibiotic interacts with any of her medications
- E.** All of the above

# Thank You!

**This material was prepared by the Atlantic Quality Innovation Network (AQIN), the Medicare Quality Innovation Network - Quality Improvement Organization for New York State, South Carolina, and the District of Columbia, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents do not necessarily reflect CMS policy. 11SOW-AQINNY-TskC.3-17-05**

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