Objectives

- Examine the impact of Adverse Drug Events (ADE’S) created by anticoagulants on safety, quality of care and cost.
- Identify key concerns/issues in the nursing home setting related to anticoagulants.
- Examine strategies (opportunities for improvement) to mitigate the risk of safety issues related to anticoagulants in the nursing home setting.
- Identify resources that can be utilized to prevent anticoagulant-related ADE’s and improve resident safety, health and quality of care.

Background

Adverse Drug Event

Defined by Office of Inspector General (OIG) as “being harm to a patient/resident as a result of medical care or in the health care setting.”

Results in prolonged skilled nursing facility (SNF) stay, hospitalizations, emergency room (ER) visits, permanent harm, or death.

Adverse Drug Event

Defined by Institute of Medicine (IOM) is “an injury resulting from medical intervention related to a drug.”
- Includes harm that occurs during medical care that are caused directly by the drug and includes medication errors, adverse drug reactions, allergic reactions, and overdoses.
- An Adverse Drug Reaction (ADR) is a “harm directly caused by a drug at normal doses.”

(https://www.pbm.va.gov/PBM/vacenterformedicalsafety/tools/AdverseDrugReaction.pdf)

Statistics

- More than thirty million prescriptions for warfarin are written annually.
- The annual cost of hospitalizations in adults age sixty-five and older is estimated to be hundreds of millions of dollars.
- Estimated that 34,000 life threatening or serious warfarin-related ADE’s occur every year in long term care.
The OIG report concluded that the second most frequent cause of medication-related ADE’s was excessive bleeding related to anticoagulants. The elderly receive more than 50 percent of all prescription medications. Comorbidities such as diabetes, congestive heart failure, hypertension contribute to multiple medications.

22 percent of Medicare SNF residents experienced adverse events during their SNF stays. (OIG) 21,777 post-acute Medicare SNF residents experienced at least one adverse event. An additional 11 percent of residents experienced temporary harm events. (OIG) Ecchymosis, gross hematuria, overt and occult gastrointestinal bleeding, epistaxis, and microhematuria were the most common types of bleeding events.

Most (80 percent) of the preventable events are associated with monitoring and prescribing errors.
**Issue: Therapeutic Range**

- Nursing home residents on warfarin are frequently maintained outside the optimal therapeutic range thus reducing the benefits of therapy.
- A study published in 2014 by the lab company Quest Diagnostics found that patients taking Coumadin or its generic had lab results showing that the drugs had the desired effect only **54 percent** of the time.

**Issue: Polypharmacy**

Risk OF ADE’s is:
- **15 percent** with two medications
- **58 percent** with five medications
- **82 percent** with greater than or equal to seven medications

Additional medications lead to greater incidence of drug interactions.

**Issue: Communication**

- Communication with the laboratory, the provider, between care givers, the resident and resident representatives
- Frequently the root cause of an error
- Documentation
- Shift to shift report
- Timely provider notification/Change of condition
- Transitions of Care
Issue: Bridging

• “Bridging” refers to the use of short-acting anticoagulants (heparin or LMWH) for a period of time during interruption of warfarin therapy when the international normalized ratio (INR) is not within a therapeutic range.
• Lots of literature about the benefit versus the risk in the elderly population (before and after surgery).
• Some orthopedic surgeons use it routinely following scheduled hip and knee surgery.
• Specific protocols for administration.

Issue: Direct Oral Anticoagulants (DOAC)

• Apixaban
• Dabigatran
• Edoxaban
• Rivaroxaban
• Don’t require lab monitoring
• Need to be taken with food
• More expensive than warfarin
• Still have bleeding risks and may cause renal issues
• Limited antidote availability

Strategies/Tools for Mitigation of Anticoagulant ADE’s

“Watch List”
• Residents receiving concomitant antiplatelet drugs (clopidogrel (Plavix) and/or aspirin)
• Residents older than 65 years
• Residents with prior stroke, renal impairment or anemia
• Residents with frequent falls
Strategies/Tools for Mitigation of Anticoagulant ADE’s

Trigger tools
- Centers for Medicare and Medicaid (CMS) Adverse Drug Event Trigger Tool
- Institute for Healthcare Improvement (IHI) Trigger Tool for Skilled Nursing Facility
  http://www.ihi.org/resources/Pages/Tools/SkilledNursingFacilityTriggerTool.aspx

Quality Assurance Performance Improvement (QAPI)/Failure Modes Effect Analysis (FMEA)
- A structured way to identify and address potential problems, or failures and their resulting effects on the system or process before an adverse event occurs.
- FMEA involves identifying and eliminating process failures for the purpose of preventing an undesirable event.

Track and Trend Medication Errors and Near Misses
- QAPI/Root Cause Analysis (RCA)
- Data
- Consider using a Severity Rating for errors
- Track hospitalizations and re-hospitalizations related to anticoagulants (high risk)
Strategies/Tools for Mitigation of Anticoagulant ADE’s

Communication
• Resident’s Care Plan
• Transitions of Care
• Between shift
• RN, LPN, CNA, Pharmacist, Providers, Families, Anticoagulation Clinic and the RESIDENT
• Develop a standardized process - SBAR (Situation, Background, Assessment, Recommendation), TeamStepps (Check Back), INTERACT

Strategies/Tools for Mitigation of Anticoagulant ADE’s

Education/Competencies for Licensed Staff
• Point of care machines – quality controls (strips, temperature, validating readings, cleaning)
• Interactions with other medications (supplements, herbals, etc.)
• Bridging protocols/orders
• Change of condition reporting/timeliness

Strategies/Tools for Mitigation of Anticoagulant ADE’s

Education/Competencies for Licensed Staff
• Monitoring/Assessing
  • Signs/symptoms
  • Vital Signs
• Awareness of Direct Oral Anticoagulants (DOAC)
• Bridging Protocols for Lovenox
Strategies/Tools for Mitigation of Anticoagulant ADE's

Education/Competencies for Certified Nursing Assistants

- What to watch for?
  - Bleeding gums, bruising, blood in urine/stool/vomit, nosebleeds
- What is warfarin and how it works?
- Are they aware what residents take warfarin and why?
- If their resident is on warfarin and falls?
- What to report, to whom and when?

Strategies/Tools for Mitigation of Anticoagulant ADE's

- Critical Element Pathway: Unnecessary Medications
- Institute for Healthcare Improvement Skilled nursing trigger Tool for Adverse Events

Preparing for Phase III

QAPI Feedback/Data collection/Monitoring

- Includes adverse event monitoring
- Methods by which the facility will systematically identify, report, track, investigate, analyze and use data and information relating to adverse events in the facility, including how the facility will use the data to develop activities to prevent adverse events
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Resources

- PowerPoint educational presentation on warfarin safety for licensed nurses
- PowerPoint educational presentation on warfarin safety for patients
- PDF copy of the Medication Safety Reference Card
- PDF copy of MetaStar’s Adverse Drug Event Tool Kit

https://www.lsqin.org/medication-safety-in-wisconsin/

Resources

- Assessing ADE’s/Anticoagulants
- Blood Thinner Zone Tool
- Anticoagulation Centers of Excellence
- Quality Assurance Performance Improvement
  https://www.lsqin.org/initiatives/nursing-home-quality/

Resources

- Wisconsin Clinical Resource Center
  https://crc.chsra.wisc.edu/
- National Action Plan for Adverse Events
Resources

• Root Cause Analysis (RCA)

• TeamStepps
  https://www.ahrq.gov/teamstepps/lngtermcare/index.html

• INTERACT

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Questions?

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