Reducing Rehospitalizations Through the Prevention of Adverse Events

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"The future of long term care"
PHCA
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Center for Assisted Living Management

Objectives

- ✓ Provide an overview of the relationship between adverse events and rehospitalizations
- ✓ Review common types of adverse events
- ✓ Discuss the increased regulatory focus on adverse event prevention
- ✓ Provide tools to evaluate current processes on adverse event prevention

The Impact of Adverse Events on Rehospitalizations

The majority of adverse events result in rehospitalization

- Driving up the cost of care
- Impacting quality of care
- Lowering quality measure performance
- Potentially leading to a cascade of events for the resident

Adverse Events (AEs) are…

- Described as harm to a patient or resident as the result of medical care, including the failure to provide needed care.
- Include medical errors, but they may also include more general substandard care that results in patient or resident harm
  - Infections
  - Falls
- Adverse events do not always involve errors, negligence, or poor quality of care and are not always preventable.

Source: OIG Report

Adverse Event Categories

Medication Events

- Medication-induced delirium or other change in mental status
- Excessive bleeding due to anticoagulant medication
- Fall or other trauma with injury secondary to effects of medication

Resident Care Events

- Fall or other trauma with injury related to resident care
- Acute kidney injury (AKI) secondary to fluid maintenance
- Exacerbations of preexisting conditions resulting from omissions of care

Infection Events

- Aspiration pneumonia and other respiratory infections
- Catheter Acquired Urinary Tract Infection (CAUTI)

Common Causes of Adverse Events

- Poor communication among multiple doctors or members of care team
- Misinterpretation of doctor's order
- Poor hygiene
- Equipment failures
- Mistaken diagnoses
- Misuse or overuse of lab tests and other services
- Medications—wrong meds, misuse or overuse
- Falls

*Source: The Essential Guide to Health Care Quality (NCQA)

Regulatory Focus: Office Of Inspector General Report

- In 2014 , the Office of Inspector General released a report on *Adverse Events in Skilled Nursing Facilities—National Incidence Among Medicare Beneficiaries*
  - Congressionally Managed Study conducted from 2008-2012 on hospital adverse events defined as harm resulting from medical care
  - Expanded to include Medicare beneficiaries discharged from hospitals to SNFs for post-acute care

OIG Report Findings

- Approximately one in five Medicare SNF residents experienced AEs during a nursing home stay
- 2.6% of the residents experienced more than one AE
- Over 50% of residents that experienced adverse events returned to the hospital
- Physicians reviews determined that 59% of the adverse events and temporary harm events were clearly or likely preventable
- In 2011, a total of 2.8 billion dollars was spent on hospital treatment for AEs with harm; an estimated cost to Medicare of $208 million

AE Category Breakdown from OIG Report

Medication Events 37%

Resident Care Events 37%

Infection Events 26%

OIG Report Harm Categories

NCC MERP Harm Scale:

- F level—Harm occurred that prolonged the SNF stay or led to a transfer to a different SNF or other post-acute facility and/or hospitalization (i.e., admission to a hospital observation unit, emergency department, or inpatient care)
- G level—Harm occurred that contributed to or resulted in permanent resident harm.
- H level—Harm occurred that required intervention to sustain the resident's life.
- I Level—Harm occurred that may have contributed to or resulted in resident death.

OIG Adverse Event Classifications

Level of Harm	Percentage of Adverse Events
F level: Resulted in prolonged SNF stay, transfer to a different SNF or other post-acute facility, and/or hospitalization (i.e., admission to inpatient care, hospital observation unit, or emergency department)	79%
G level: Contributed to or resulted in permanent resident harm*	--
H level: Required intervention to sustain the resident's life	14%
I level: Contributed to or resulted in resident death	6%

Table 2: Adverse Events Classified as F-I on OIG's Modified NCC MERP Index for Categorizing Adverse Events by Level of Harm

See Appendix D for confidence intervals.

*We are unable to reliably project the weighted point estimate for adverse events classified as G Level harm because of the small number of sample occurrences.

Source: OIG analysis of SNF stays for 653 Medicare beneficiaries discharged in August 2011.

AEs Identified Among Medicare SNF Residents by Category

Types of Adverse Events	Percentage*
Events Related to Medication	37%
• Medication-induced delirium or other change in mental status	12%
• Excessive bleeding due to medication	5%
• Fall or other trauma with injury secondary to effects of medication	4%
Constipation, obstipation, and ileus related to medication	4%
• Other medication events	14%
Events Related to Resident Care	37%
• Fall or other trauma with injury related to resident care	6%
• Exacerbations of preexisting conditions resulting from an omission of care	6%
• Acute kidney injury or insufficiency secondary to fluid maintenance	5%
Fluid and other electrolyte disorders (e.g., inadequate management of fluid)	4%
Venous thromboembolism, deep vein thrombosis (DVT), or pulmonary embolism (PE) related to resident monitoring	4%
• Other resident care events	14%
Events Related to Infections	26%
Aspiration pneumonia and other respiratory infections	10%
• Surgical site infection (SSI) associated with wound care	5%
Urinary tract infection associated with catheter (CAUTI)	3%
• Clostridium difficile infection	3%
Other infection events	5%
Total	100%

Temporary Harm AE Event Types (Medicare Residents)

Types of Temporary Harm Events	Percentage*
Events Related to Medication	**43%**
• Hypoglycemic episodes (e.g., low or significant drop in blood glucose)	16%
• Fall or other trauma with injury associated with medication	9%
• Medication-induced delirium or other change in mental status	7%
• Thrush and other nonsurgical infections related to medication	4%
• Allergic reactions to medications (e.g., rash, itching)	3%
• Other medication events	3%
Events Related to Resident Care	**40%**
Pressure ulcers	19%
• Fall or other trauma with injury associated with resident care	8%
• Skin tear, abrasion, or breakdown	7%
Other resident care events	6%
Events Related to Infections	**17%**
CAUTI	5%
• SSI associated with wound care	5%
• Other infection events	7%
Total	**100%**

Table 4: Temporary Harm Events Identified Among SNF Residents by Category

*The percentages for conditions listed within the clinical categories do not sum to 100 percent because of rounding. See Appendix D for percentage estimates and confidence intervals. See Appendix F for a complete listing of all temporary harm events identified by the reviewers. Source: OIG analysis of SNF stays for 653 Medicare beneficiaries discharged in August 2011.

OIG Recommends

- The Agency for Healthcare Research and Quality (AHRQ) and CMS raise awareness of nursing home safety and seek to reduce harm through methods used to promote hospital safety efforts including collaboration to create and promote a list of potential nursing home events
- CMS should also instruct State agency surveyors to review nursing home practices for identifying and reducing adverse events

Regulatory: Focus Surveys

July 2015 CMS Memorandum on Medication-Related Adverse Events in Nursing Homes (Ref: S&C: 15-47-NH)

- CMS initiated pilot testing the Focused Survey on Medication Safety Systems
- CMS Adverse Drug Event Trigger Tool

Medication Events

- Medication-induced delirium or other change in mental status
- Excessive bleeding due to anticoagulant medication
- Fall or other trauma with injury secondary to effects of medication

CMS Adverse Drug Event Focus Surveys

- An adverse event is defined as the untoward, undesirable and usually unanticipated event that causes death, serious injury, harm or the risk thereof.
- The focus surveys will target adverse drug events defined as an injury resulting from drug-related medical interventions.

Medication-Related AEs in Nursing Homes

- ✓ Evaluate nursing home practice around high-risk and problem-prone medications
- ✓ Identify preventable adverse drug events (ADEs) that have occurred or may occur
- ✓ Determine whether NFs identify risk factors for ADEs and implement individualized interventions to eliminate or mitigate those risk factors
- ✓ Determine if the NF has implemented effective systems to prevent ADEs as well as recognize and respond to ADEs that do occur in order to minimize harm for the individual and prevent recurrence of the event

So, of course prevention of adverse events is the goal…but why is it so difficult?

Challenges in the Prevention of Adverse Events

- Culture of Regulation and Penalties for Mistakes
- Competing Organizational Priorities
- Lack in adoption of technology
- Fragmentation in care transitions

Strategies to Prevent Adverse Events

- ✓ Build a culture that does not blame, but encourages transparency, teamwork and accountability
- ✓ Education and Competency Programs for AE risk areas
- ✓ Engage patients and/or caregivers
  - Ask questions about conditions/treatments
  - Know medication allergies
  - Keep a list of medications
  - Include in the plan of care

Strategies to Prevent Adverse Events

- ✓ Collaborate with referral sources to stress the importance of full and complete medical information during transfers
  - This includes NFs having a standardized process for sending complete information during a transfer
  - The use of data to guide conversations

Strategies to Prevent Adverse Events

- ✓ Review, adapt or implement systematic processes
  - Quality Improvement Process
    - Shift to implementing processes that can be sustained
    - Implement or Review a Medication Reconciliation Process, along with related Policies and Procedure
    - The Institute for Healthcare Improvement recommends utilizing record reviews to identify and investigate potential or actual AEs (Tools are available)
    - CMS Adverse Drug Event Trigger Tool
  - Survey Readiness/Plans of Corrections
    - Remember these areas can be cited during annual and/or complaint visits.
    - Ensure that root cause is being determined and that systems are being reviewed

CMS AE Trigger Tool for Surveyors

ADE	Risk Factors	Triggers: (S/S)	Triggers: Clinical Interventions	Surveyor Probes
Bleeding related to antithrombotic medication use	--Anticoagulant, antiplatelet, or thrombolytic medication use --Concurrent use of more than one antithrombotic medication (e.g., use of aspirin while on anticoagulants) --History of stroke or GI bleed --NSAID medication use while on anticoagulants --Antibiotics use while on anticoagulants --Amiodarone use	--Elevated PT/INR, PTT --Low platelet count --Bruising --Nosebleeds --Bleeding gums --Prolonged bleeding from wound, IV, or surgical sites --Blood in urine, feces, or vomit --Coughing up blood --Abrupt onset hypotension	--Stat order for PT/INR, PTT, platelet count, or CBC --Abrupt stop order for medication --Administration of Vitamin K --Transfer to hospital	--Does the medical record include documentation of clinical indication? --Is there evidence the facility routinely monitors lab results of all residents on anticoagulant/antiplatelet therapy? --Is there a system to ensure lab results, including PT/INRs, are appropriately communicated to the physician including when panic values are obtained? --Is there evidence that the facility educates caregivers on risk factors and symptoms and signs that may be indicative of excessive bleeding due to antithrombotic medications? --Are residents/families educated regarding the risks associated with antithrombotic medication use and the signs and symptoms of excessive bleeding? --Is there evidence of system to alert prescribers

17 Adverse Drug Event Worksheets

- Change in Mental Status Delirium
  - Related to opioid use
  - Related to psychotropic medication use (antipsychotics, antidepressants, anxiolytics and hypnotics)
- Hypoglycemia related to the use of antidiabetic medication
- Ketoacidosis related to insulin therapy
- Prolonged constipation, ileus or impacted related to opioid use
- Electrolyte imbalance (including dehydration and acute kidney injury) related to diuretic use
- Drug toxicity related to
  - Acetaminophen
  - Digoxin
  - Levothyroxine
  - Angiotensin-converting enzyme (ACE) inhibitors
  - Phenytoin
  - Lithium
  - Valproic Acid
  - Antibiotics

Adverse Drug Event Worksheets Continued

- Altered output related to cardiac medications (blood pressure medications and beta blockers)
- Bleeding related to antithrombotic medication use
- Thromboembolism related to anticoagulant medication use

Bringing Quality to the Bedside

Oral Anticoagulants

June 2015, Pennsylvania Patient Safety Authority publishes a research article on Oral Anticoagulants—A Review of Common Errors and Risk Reduction Strategies

- Analysts reviewed medication error reports submitted from July 2013 - June 2014 through the Pennsylvania Patient Safety Reporting system
- Reviewed four oral anticoagulants—Warfarin, Apixaban, Rivaroxaban and Dabigatran

Categories of Medication Errors

831 errors related to oral anticoagulants were analyzed

Event Type	n	%
Dose omission	270	32.5
Other	154	18.5
Extra dose	97	11.7
Wrong dose/over dosage	50	6.0
Monitoring error: clinical (lab value, vital sign)	46	5.5
Wrong time	40	4.8
Unauthorized drug	34	4.1

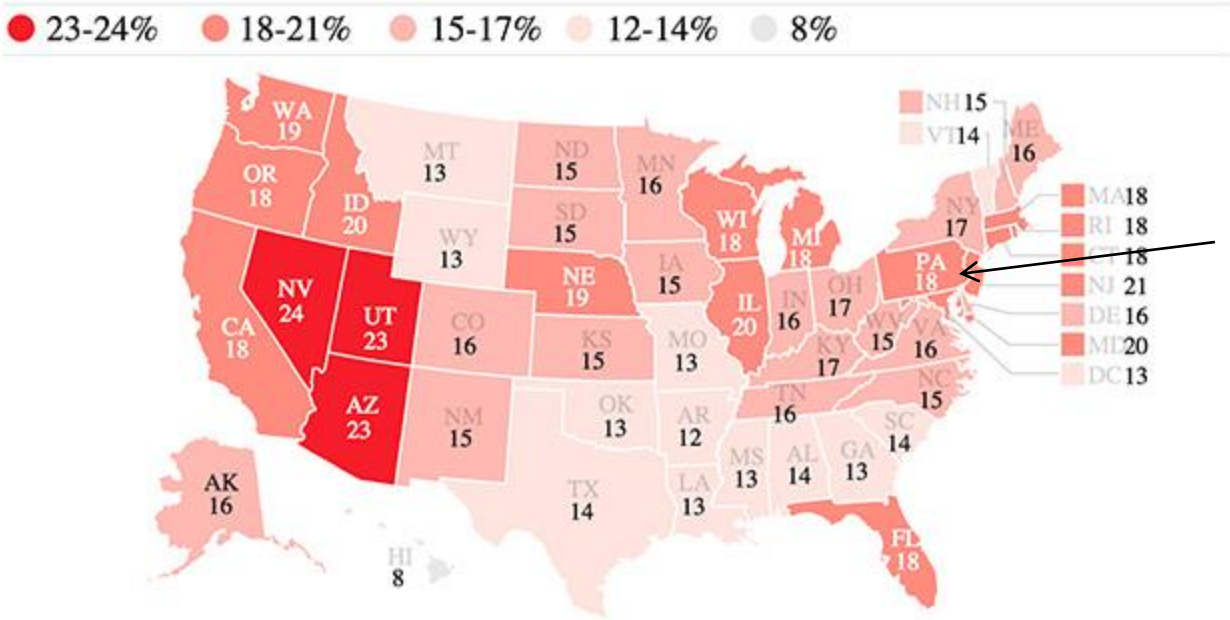
Oral Anticoagulants

- July, 2015 ProPublica Story article on blood thinners causing deaths in nursing homes
  - Highlighted different patient scenarios
  - Historic overview on Coumadin
  - Overview of the challenges in managing Coumadin
  - Highlighted quality improvement efforts
  - Visual reference on the usage of anticoagulants in nursing home patients Nationally

Oral Anticoagulant Example

Nursing Home Patients on Anticoagulants
Percentage of patients receiving at least one dose per week

Includes Coumadin, warfarin, heparin and other new anticoagulants
Data for first quarter of 2015
Source: Centers for Medicare and Medicaid Services.



ADE Worksheet: Bleeding related to antithrombotic medication use

Risk Factors: These increase the potential for ADEs. Multiple factors increase risk.

- Anticoagulant, antiplatelet, or thrombolytic medication use
- Concurrent use of more than one antithrombotic medication (e.g., use of aspirin while on anticoagulants)
- History of stroke or GI bleed
- NSAID medication use while on anticoagulants
- Antibiotics use while on anticoagulants
- Amiodarone use while on anticoagulants
- Dietary changes affecting vitamin K intake (e.g., dark leafy greens)

ADE Worksheet: Bleeding related to antithrombotic medication use

Triggers--Signs and Symptoms: Any of these may indicate an ADE may have occurred.

Who on the interdisciplinary team is likely to observe these s/s?

- ✓ Elevated PT/INR, PTT
- ✓ Low platelet count
- ✓ Bruising
- ✓ Nosebleeds
- ✓ Bleeding gums
- ✓ Prolonged bleeding from wound, , IV, or surgical sites
- ✓ Blood in urine, feces, or vomit
- ✓ Coughing up blood
- ✓ Abrupt onset hypotension

ADE Worksheet: Bleeding related to antithrombotic medication use

- These triggers may indicate an ADE occurred.
- Clinical Interventions may include:
  - Stat order for PT/INR, PTT, platelet count, or CBC
  - Abrupt stop order for medication
  - Administration of Vitamin K
  - Transfer to hospital

Let's be detectives….

Does the medical record include documentation of clinical indication?
Is there evidence the facility routinely monitors lab results of all residents on anticoagulant/antiplatelet therapy?
Is there a system to ensure lab results, including PT/INRs, are appropriately communicated to the physician including when panic values are obtained?
Is there evidence that the facility educates caregivers on risk factors and symptoms and signs that may be indicative of excessive bleeding due to antithrombotic medications?
Are residents/families educated regarding the risks associated with antithrombotic medication use and the signs and symptoms of excessive bleeding?
Is there evidence of system to alert prescribers and nursing staff when anticoagulants are combined with other drugs which increase the risk of bleeding?
Does the resident's dietary plan include recognition of foods that interact with antithrombotic medications (e.g., is there a plan to ensure consistent intake of foods and beverages rich in Vitamin K for residents on warfarin)?

Potential Risk Reduction Strategies

- Consider the role of the pharmacist
  - Potential review of residents with prescribed anticoagulants and complex drug regimens to decrease the risk of drug interactions
  - Collaborate on a process to handle “hold” orders as frequently with dose omissions the order was not reinstated
- Consider NF process around verbal orders
  - Read back/repeat back method
- Education of staff and patients/family members

Top Three Takeaways

- ✓ Integrate and review systematic processes to prevent adverse events and reduce rehospitalizations.
- ✓ Utilize survey readiness strategies, like the adverse event trigger tools to be prepared for the increased regulatory focus on adverse events.
- ✓ Take quality to the bedside by engaged and educating interdisciplinary approach.

Resources

Andreica, I., Grissinger, M. (2015) Oral anticoagulants: a review of common errors and risk reduction strategies. *Pennsylvania Patient Safety Advisory.* http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2015/Jun;12(2)/Documents/jun;12(2).pdf.

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Ornstein, C. (2015) Popular Blood Thinner Causing Deaths, Injuries at Nursing Homes. *ProPublica. https://www.propublica.org/article/popular-blood-thinner-causing-deaths-injuries-at-nursing-homes*

The Essential Guide to Health Care Quality (2006). National Committee for Quality Assurance. http://www.ncqa.org/Portals/0/Publications/Resource%20Library/NCQA_Primerweb.pdf.

Questions or for more information

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