VTE Prevention in Long Term Care Residents

Incidence
Venous thromboembolism (VTE) is an important healthcare problem resulting in significant morbidity, mortality and cost every year. In the United States alone, there are over 1 million deep vein thrombosis events and over 100,000 deaths from pulmonary embolism each year. About 10% of deep vein thrombosis cases and 8% of pulmonary embolism cases that have occurred in elderly patients have been in nursing home residents. In the elderly population, the mortality rate one year after deep vein thrombosis is 21% and 39% one year after having a pulmonary embolism. Long term morbidity is also common due to complications resulting from thrombosis such as leg ulcers, leg pain and pulmonary hypertension. Many elderly patients have frequent hospitalizations that often result in long term care admissions. Due to the increased risk of VTE in hospitals and nursing homes and the increased risk of mortality associated with VTE in elderly patients, this population must be vigilantly managed. Therefore, prevention of VTE in residents of long term care facilities is imperative.

Risk factors for VTE
General risk factors for venous thromboembolism can be broken down into predisposing risk factors (age, obesity, history of VTE, and venous insufficiency) and exposing risk factors (acute medical illness, immobility, trauma, institutionalization, cancer, central venous catheter, and hormone therapy). Upon admission into a long term care facility, all patients should be assessed for VTE risk. Limited mobility is one of the most common VTE risk factors in elderly patients. Being bedridden for more than 14 days has been reported to increase DVT risk more than 5 times in elderly patients. It is essential to evaluate patients with acute medical illness to determine if VTE prophylaxis is indicated. Examples of acute medical illnesses to consider in elderly patients include acute MI, heart failure, respiratory failure, infection, ischemic stroke, rheumatic disease, malignancy, paraplegia and inflammatory bowel disease. Residents with advanced age, acute medical illness and limited mobility should be considered candidates for pharmacological prophylaxis. Major surgeries, such as total hip or knee replacement,
What is MRSA?
Methicillin-resistant Staphylococcus aureus (MRSA) is an infection caused by a strain of Staphylococcus aureus bacteria. S. aureus is a common type of bacteria that normally lives on the skin and the nasal passages. MRSA refers to S. aureus strains that do not respond to the antibiotics normally used to cure staph infections and is sometimes referred to as a “superbug”. This incidence of MRSA is on the rise, having increased from 2% of all staph infections in 1974 to 63% in 2004.

Types of MRSA infections
- Healthcare-associated MRSA (HA-MRSA) infections occur in people who are or have recently been in the hospital or the long term care setting and manifest as pneumonia, bacteremia, skin and soft tissue infections or UTI's.
- Community-associated MRSA (CA-MRSA) infections are ones that occur in otherwise healthy people who have not recently been hospitalized. These are usually skin and soft tissue infections.

MRSA in Long Term Care
MRSA is responsible for approximately 1900 deaths per year. As many as 25% of residents admitted to long term care facilities are colonized upon arrival and another 10% of residents will more than likely become infected with MRSA while in the facility. Staff may be colonized with MRSA unknowingly. Risk factors include age over 65, open wounds, severe underlying illnesses such as diabetes, dialysis, prolonged hospitalization/ICU exposure, surgeries, in-dwelling percutaneous medical devices and catheters and prolonged antibiotic treatment especially with multiple broad-spectrum antibiotics. Infection control, in particular prevention and management of MRSA, is one of the biggest challenges in the LTC setting. This setting is unique in that it is a healthcare setting as well as the resident’s home. Residents experience longer stays than they would in a hospital and they in closer proximity to each other. LTC institutions do not usually have the resources for dedicated infection-control personnel.

Infection Control
Infection occurs mainly through person to person contact and less commonly through aerosol transmission. Interventions apply to both colonized and infected residents and commonly include the following:

- Screening to identify residents carrying MRSA
- Hand hygiene either with soap and water or antibacterial cleansing gels after contact with each resident, change gloves in-between residents. Note: although hand washing is the single most important means of infection control, studies show routine compliance is no more than 60%. If the resident is visibly infected, cleansing gels should not be substituted for hand washing.
- Contact precautions such as gloves, gowns and drapes used for procedures such as catheter and percutaneous device insertions and wound care
- Daily decontamination of the environment in particular beds, bedside stands, bed rails, toilets and bathrooms, dining tables, light switches, door knobs, as well as equipment used by staff such as phones, computers and pagers
- Dedicating equipment such as stethoscopes and sphygmomanometers to residents infected or colonized with MRSA, sterilizing equipment that must be used on multiple residents
- Proper handling of contaminated bed-linens and laundry
- Consider placing infected or colonized residents in private rooms or with each other
- Limit transport or movement of infected patients outside of room; if transport is necessary, contain and cover infected or colonized areas.
- Contact precaution zones
- Monitoring antibiotic use and resistance rates
• Staff/volunteer education and teamwork that includes accountability, reminders, refreshers and incentives
• Proper training of housekeeping staff and the use of checklists to ensure daily decontamination
• Cautious use of pets for “pet therapy” as dogs and cats can be infected or colonized with the same strains of MRSA as humans
• Ask visitors to wash hands

**Diagnosis**

Diagnosis is made by a positive culture (obtained from blood, wounds, respiratory secretions and urine) along with signs and symptoms of infection. Common sites of infection and colonization include wounds, trach sites, and IV and catheter sites.

**Treatment**

• The standard treatment for MRSA in the long term care setting is IV Vancomycin. Common side effects include infusion reactions and renal failure.
• Other treatment options include IV and oral Zyvox (linezolid) for diabetic foot infections, pneumonia and uncomplicated skin and soft tissue infections caused by MRSA.
• IV Cubicin (daptomycin) is used for bacteremia caused by MRSA.
• IV Tygacil (tigecycline) which is mainly used in the hospital setting, is used for treatment of complicated skin and soft tissue infections as well as abdominal infections caused by MRSA. Common side effects are nausea and vomiting.
• Avoid unnecessary antibiotic use with all patients.
• Decolonization of residents and staff is not currently recommended.

*more information about MRSA may be obtained at http://www.cdc.gov/ncidod/dhqp/ar_mrsa_prevention.html

**LATE BREAKING NEWS**

On November 17, the FDA recommended that the co-administration of clopidogrel (Plavix) and omeprazole (Prilosec/Prilosec OTC) be avoided because omeprazole reduces the effectiveness of clopidogrel. The new recommendations are based on study results from the manufacturers of clopidogrel. Patients who are at risk for heart attacks or strokes may not get the full protective anti-clotting effect if they are using clopidogrel and omeprazole together. The studies confirm that co-administration of omeprazole with clopidogrel results in decreased levels of clopidogrel’s active metabolite (through inhibition of the CYP 2C19 enzyme), reducing clopidogrel’s anti-clotting effect.

Other stomach acid reducing drugs, such as Zantac (ranitidine), Pepcid (famotidine), Axid (nizatidine), or antacids are not expected to interfere with the anti-clotting activity of clopidogrel because they do not inhibit CYP 2C19 activity. Tagamet (Cimetidine) does inhibit CYP 2C19 activity and should not be used.

Until further information is available, the FDA recommends the following:

• Avoid using omeprazole and clopidogrel together and at any time of the day. Separating the dose of clopidogrel and omeprazole in time will not reduce this drug interaction.
• Avoid using other potent CYP 2C19 inhibitors, including esomeprazole, with clopidogrel.
• At this time, the FDA does not have enough information about drug interactions between clopidogrel and other PPI’s other than omeprazole and esomeprazole to advise on their use together.
• Patients who use clopidogrel and need a medication to reduce stomach acid can use antacids and most H2 Blockers such as Zantac (ranitidine), Pepcid (famotidine), Axid (nizatidine), but NOT Tagamet (Cimetidine).
• Patients taking clopidogrel should consult with their healthcare provider if they are currently taking or considering taking omeprazole, including Prilosec OTC.

*Article by Dianne Higgins, PharmD*
present a very high risk for VTE. The clinical data strongly supports pharmacological thromboprophylaxis in patients undergoing a major surgery. It is common for elderly patients to have multiple risk factors for VTE and each additional risk factor multiplies their overall risk. To account for each individual patient’s predisposing risk factors and exposing risk factors, a risk-assessment model may be useful. Risk assessment models stratify patients based on their specific VTE risk factors, then lead to evidence-based recommendations for prophylaxis based on the composite risk estimate.

Preventative Measures
Several nonpharmacological strategies may be used for VTE prophylaxis. These include early mobilization, leg elevation and mechanical prophylaxis. Realistically, most elderly patients will not be ambulatory immediately following surgery. In addition, most symptomatic thromboembolic events occur after patients are mobile, indicating ambulation is not enough to prevent VTE. Mechanical prophylaxis methods include compression stockings, pneumatic compression devices and the venous foot pump.

Pharmacologically, there are several drugs that may be used for prevention of venous thromboembolism. The ACCP guidelines recommend against the use of aspirin alone as thromboprophylaxis against VTE for any patient group. Vitamin K antagonists, including warfarin, generally are not prescribed as primary VTE prophylaxis. However, patients who are already taking warfarin for another reason will likely also gain benefit for VTE prevention. Both low molecular weight heparin (LMWH) and unfractionated heparin (UFH) have been shown to reduce the risk of DVT by about 70%. When using unfractionated heparin, the free heparin levels vary between individual patients. LMWH has been shown to have similar efficacy and safety compared to UFH. The low molecular weight heparins include enoxaparin, dalteparin and tinzaparin. Advantages of LMWH over UFH include reduced incidence of thrombocytopenia, high bioavailability, and a more predictable pharmacological profile allowing once to twice daily outpatient dosing.

Complications of VTE treatment
Elderly patients are the most likely to benefit from anticoagulation, however, they may also be at increased risk of complications related to treatment. Existing comorbidities, increased number of medications for possibilities of drug interactions, and increased risk for falls are all factors that lead to high bleeding risk in residents of long term care facilities. Furthermore, impaired renal function is 10 times more common in elderly patients. Since LMWH is significantly excreted by the kidneys, renal function must be assessed prior to prescribing an anticoagulant in any elderly patient. Body weight must also be considered when using anticoagulants in the elderly population. A benefit to risk assessment is essential for every individual patient prior to initiating thromboprophylactic therapy. Bleeding risk must be taken into consideration. Therapy should be delayed or avoided in patients who have an active bleed or who are at high risk for bleeding. Risk factors for bleeding include increased age, history of a GI bleed, history of a stroke, diabetes, hematocrit below 30% and serum creatinine greater than 1.5 mg/dL. The risk of advanced age alone will not outweigh the benefit of anticoagulation in most elderly patients.

Current Protocols
Most hospitals in the United States are either currently developing or have already put a VTE prophylaxis protocol into practice for general medical patients and patients undergoing surgery. The hospital protocols seem to consistently use the recommendations published by the ACCP for their protocol. General recommendations from ACCP guidelines for VTE prevention in hospital patients are dependent on the risk level. For low risk patients, ACCP recommends early aggressive ambulation with no specific preventative interventions. In those at moderate risk, LMWH at recommended doses, low dose UFH given 2 or 3 times daily, fondaparinux, or mechanical methods with high bleed risk are recommended. For high risk patients, LMWH at recommended doses, fondaparinux, and warfarin with dose titration to an INR of 2.0 – 3.0 are recommended. In comparison to data for hospitalized patients, there is very little good quality data for VTE prophylaxis in the long term care setting. Currently, no long term care pharmacy Lovenox protocols are readily available for reference.

Conclusion
Elderly patients frequently have numerous risk factors for venous thromboembolism which may put them at high risk. Patients who are at risk should be identified early in order to prevent venous thromboembolism. Patients who are acutely ill or have multiple risk factors should be considered as candidates for thromboprophylaxis. There are safe and effective preventative options for elderly patients, including UFH and LMWH. However, a risk versus benefit assessment should be performed for every patient by taking renal function, body weight and bleed risk into consideration.

By Tiffany Merritt, Pharm D Candidate
MAR Tips

- New MARs should be checked against the current MAR, taking into account any new orders since last check.
- All entries on the current MAR should be dated and initialed to facilitate checking of original MAR order.
- MARs are designed for a two check system (two lines for Nursing signature). The first line (Meds checked line) should be signed by the nurse first checking the MAR. This check should be the complete check of A side order as well as medications. The last check (second signature) should verify a check of proper transcription of any orders received since the first check. (THIS SHOULD BE DONE THE EVENING PRIOR TO THE MAR’S BEING CHANGED OUT!!)
- MARs can be checked either by LPNs or RNs (there is no rule that an RN must perform one of the checks).
- Remember, orders faxed after the MAR "cut-off" time (around the 25-26th of each month) will not appear on your new MARs. Please make sure to carefully check transcription of all orders after the cut-off date. This is where the majority of transcription/omission errors occur. Once the new MARs arrive, any subsequent telephone orders should be transcribed on the current MAR as well as the new MAR. (Remember to date and initial any order changes/deletions/new additions.)
- All prn's d/c'd per the facility automatic stop order policy (not used in greater than 30 days) should be deleted on the new MARs and the pink copy forwarded to the pharmacy. Nursing should indicate that prn has been d/c'd "per ASO". There is no need to generate a subsequent telephone order for these d/c'd medications.
- Pink copies should be forwarded to the pharmacy as soon as possible and never later than the 5th of the month to insure adequate time for all corrections.
- Lab and Diet changes can also be made directly on the new Physician order sheet as well as allergies, room changes, MD changes etc.
- Remember to check the diagnosis section to insure that each MAR lists the patient's diagnoses.
- Remember that any changes that should appear on the MAR or the A side of the MAR have to be communicated to the pharmacy in some way, either by Pink copy, telephone call or telephone order.
- Standing orders (with time limitations—Robitussin DM 1 tsp 4 hours prn cough for 2 days) are entered on the MAR with the specific start and stop times clearly indicated. For example, the above order for Robitussin should have a solid line delineating the start time and the stop time on the MAR, with all times before and after “yellowed” out. The pharmacy does not necessarily need a telephone order for standing orders. If, however, a telephone order is generated, please clearly indicate that it is a standing order by placing “S.O.” at the end of the order.
- For initial admission orders, the pharmacy must have the orders which have been verified by the physician. Thus, it is best to write out the orders rather than to fax the discharge summary. The pharmacy prefers that all admission orders be written on a blank physician’s order form.
- Be sure to use a ball point pen to correct or add to the MARs.
- Please complete the MAR scorecards each month and send them to the pharmacy for ongoing evaluation and improvement of the MAR process.
- It is important for the pharmacy to be notified when treatments are dc/d. Often, treatments are ordered for "until healed" but the pharmacy is not notified when to stop sending the treatment.
HOT TOPICS

Survey Trends

- Expiration and dating of medications with limited shelf life once dispensed or opened (as mentioned in previous newsletters).
- Locking of Medication Carts: If a med cart is pulled close to a patient’s door while the nurse in the room, it is still a good practice to lock the cart. Surveyors may site this if the nurse turns her back only momentarily. This tag results from only one occurrence observed by the surveyor team…it does not have to be a trend.
- F 329 Unnecessary Drug Tag: Surveyor questioned the use of low dose Megace (resident was receiving 40mg qd for appetite). MD felt that this was an appropriate dose and resident had weight gain on this dose, but the surveyor felt that dosing was not appropriate for the indication (dosing for weight gain is normally 800mg per day). Pharmacist was able to prevent citation, but surveyor expressed caution and concern with the use of Megace for appetite in general due to questionable efficacy in this population.
- Proper Documentation on Behavior Sheet (in particular, lack of target behaviors identified).
- New Focus on Infection Control has been noted, especially due to flu season, including H1N1. Usual areas of concern include not touching tablets or capsules with hands, washing hands with soap and water if more than casual contact occurs between nurse and resident, washing hands before and after eye medications. Another area of potential concern is dropping scoops (from Metamucil or Promod) back down in the powder (if the handle of the scoop has been touched with potentially contaminated hands).

Best Practices

The Best Practice Idea comes to us from Piedmont Crossing of Thomasville, NC. Practitioner visit stickers can be a great asset for nurses’ notes. They provide a quick and easy reminder of which provider(s) saw the patient and the date a physical exam, dental exam, psych consult or other specialty consults were performed. By placing the sticker in the nurses’ notes section, it serves as a helpful hint for nurses to include the following pertinent information in their entry: newly initiated orders, monitoring parameters, signs/symptoms, the presence or absence of adverse effects to newly initiated medications, new diagnoses, acute findings/presentation, and resolution of illness. This may also provide useful insight for survey teams by allowing them to refer back to a physician’s progress note if they come across the sticker and the nurse’s note that accompanies it.
Write it Right!

Series by Cathy Fuquay, RPh

When dealing with litigation in long term care, documentation is an important factor in having a substantial defense against medical malpractice claims. We are in the process of reviewing the ten most common charting mistakes, with a goal of improving overall documentation and thus minimizing the risk of litigation.

**Writing Illegible or Incomplete Orders**

Illegible entries in a chart rarely leads to a lawsuit, but in the midst of legal proceedings, it can add to the argument of inadequate care. When MD orders are not legible, it is the responsibility of nursing to call for clarification. Additionally, nursing notes must be legible and complete so that anyone picking the chart up at a future time will have no doubt as to the entry. If errors are made, they should be marked through with a single line and initialed, not treated as the example below. Incomplete orders will be discussed in detail in the next newsletter.

### 10 COMMON CHARTING MISTAKES

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<thead>
<tr>
<th>1. Failure to record pertinent patient information.</th>
<th>6. Failure to properly document a discontinued medication.</th>
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<tr>
<td>2. Failure to record nursing actions.</td>
<td>7. Transcribing orders improperly or transcribing improper orders.</td>
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<td>3. Failure to record drug reactions OR changes in condition.</td>
<td>8. Failure to record that medications have been given.</td>
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<td>4. Recording information in the wrong patient’s chart.</td>
<td>9. Failure to follow a specific physician order.</td>
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<tr>
<td>5. Writing illegible or incomplete orders.</td>
<td>10. Inappropriate use of abbreviations.</td>
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When writing orders on physician order sheets or telephone order slips with multiple copies, a ball point pen should be used with adequate pressure to assure that the order is legible on all copies. Telephone order slips “bottom copies” are frequently noted on the chart to be totally illegible because inadequate pressure was used to write the order initially. This is of particular concern when the original TOS has not been signed by the MD and returned to the chart.
...a note from the Editor

To all our partners in Long Term Care:

On behalf of all of us at Neil Medical, I want to wish each of you a blessed Holiday Season and a most Happy and prosperous New Year. We are honored to be your long term care pharmacy provider and look forward to continued good relationships with each of you. Thank you for allowing us to be a part of your health care team!

Sincerely,

Cathy Fuquay

Pharm Notes is a bimonthly publication by Neil Medical Group Pharmacy Services Division. Articles from all health care disciplines pertinent to long-term care are welcome. References for articles in Pharm Notes are available upon request. Your comments and suggestions are appreciated. Contact:

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Note: Periodically, we are asked to add a name to our distribution list. At this time, copies of Pharm Notes newsletters are distributed in bulk to Neil Medical Group customers only.