Best Practice Initiative: Inpatient Anticoagulation Stewardship

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Objectives
- Become familiar with JC National safety goal for warfarin anticoagulation
- Understand the steps of implementing a new pharmacy service
- Review the tools available to optimize patient’s anticoagulation management
- Understand the challenges in transition of patients on anticoagulation therapy
- Understand the role of a technician in anticoagulation management

Preventable Disaster #1
- 46 yo comes to ED c/o disorientation, headache, and ataxia. History of HTN, hypothyroidism, PUD. Was on warfarin 6mg daily for DVT/PE, CT of head revealed subdural hematoma, cerebral edema.
  INR > 15. Patient did not recover
  What could we have done to prevent this outcome?

Preventable Disaster #2
- Patient in the hospital, on warfarin, started on TMP/SMX for uncomplicated cystitis. Three days later patient has gross blood in their stool and low blood pressure, INR checked and found to be 10
  What recommendations could pharmacy give to help minimize this adverse event?

Preventable Disaster #3
- Patient with an in range INR, mitral mechanical heart valve admitted to hospital for a new hip fracture. Patient given 10mg oral vitamin K to lower INR for surgery the next day. After her surgery, she remains in the hospital for 7 days as the clinicians attempt to get her INR therapeutic (pt not a candidate for LMWH)
  What cost implications does this have to the hospital?
  What could we have done to minimize this?
**Patient Safety Standards**

- The hospital implements a defined anticoagulation management program to individualize the care provided to each patient receiving anticoagulant therapy.
- The hospital uses approved protocols for the initiation and maintenance of anticoagulation therapy appropriate to the medication used, to the condition being treated, and to the potential for medication interactions.

http://www.jointcommission.org/PatientSafety/NationalPatientSafetyGoals/

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**Why Anticoagulants**

- Fanikos, et. al. analyzed medication errors reported in a hospital and found 7.2% were due to anticoagulants.
  - 6.2% of these patients required medical intervention and 1.5% needed a prolonged hospital stay.
- Winterstein, et. al. showed that 32.2% of preventable ADEs in a teaching hospital involved anticoagulants.
  - Double the amount caused by any other medication class.


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**Why Anticoagulants**

- Top 50 Reported Drug Errors
  - #5. heparin
  - #7. warfarin
  - #12. enoxaparin
- Top 10 Drug Errors Causing Harm
  - #3. heparin
  - #4. warfarin
- Medication Errors Occurring in Patients’ Homes
  - #1. warfarin
  - #5. enoxaparin
  - #7. heparin

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**Why do this …**

- Patient safety concerns
- Regulatory Compliance
- Financial Implications
Safety Practices Focus

- Written guidelines/policies
- Standardized order set
- Standardized chart documentation
- Defined monitoring standards
- Document anticoagulation education
- Transition of care at the point of discharge (order set)

Benefits of the program

- Improve patient care
  - standardization practices
  - reduced complications
  - improve compliance
  - Reduce cost
  - Improve continuity of patient care
  - Reduce inpatient mortality rates
  - Improve patient experience

The Model for Improvement

- What are we trying to accomplish
- Available resources/Team members
- Design a step-wise approach
- Identify and create resources
- Identify parameters to measure success
- Prepare for modifications to improve implemented processes
- Build a case for coverage and expansion

Improvement Team

- Characteristics – position power, expertise, credibility, leadership
- Disciplines – pharmacy, physicians, nursing, quality, information technology
- Goal – assess/plan/implement a process to improve and maintain best practice with ongoing monitoring
- Objective – create a pharmacist-driven warfarin management service

Getting started …

- Identify a physician champion
- Creation of the warfarin order set
- Propose and implement a pilot
- Create policies for approval
- Education of the staff
  - Pharmacists
  - Nursing
  - physicians
- Set expectations and communication tools

Warfarin Order Set
Warfarin Discharge Order Set

Expectations for ALL patients
- Defines a baseline INR as occurring within the last 24 hours prior to the current order for warfarin
  - INRs from any facility are acceptable
- Pharmacists to review the baseline INR **prior** to dispensing the first dose of warfarin
  - Applies to new starts and continuation patients
- Pharmacists to review the patient record to assess the appropriateness of the dose
- Pharmacists will be able to independently order INR if needed

Pilot Program: Pharmacy Consult Service
- Pharmacy consulted by medical staff for anticoagulation management
- Pharmacy Residents with preceptor guidance
  - Receive consult calls
  - Review patient case
  - Documentation (initial consult note, daily notes)
  - Communicate with provider to address urgent warfarin related issues
  - Place orders (doses, INR)
- Summa Anticoagulation Clinic Patients - admitted to the hospital will be automatic consults

Resources
- Pharmacy Consult policy (P&T/Medical Executive approved)
- Warfarin dosing nomogram (P&T approved)
- Pharmacy Consult chart sticker
- Pharmacist Monitoring Form
- SAMS referral form (outpatient management)
- Tools – Phone, pager, binder
- Education In-services and resources for difficult cases
- Reporting of safety & effectiveness data

Challenges during the Pilot
- Communication – knowing exactly when and where the patient is going after discharge
- Changes in discharge plan
- Knowing when patients are discharged from SNF or Rehab
- New referrals – physicians/nurses slowly learning the process and inability to document in standing stone
- Non-SAMS patients on SAMS list in PLATO

Action Plan
- Nursing in-services – nursing units, PLATO super-user group and nurse practice council group presentations, PFE newsletter, Pharmacy newsletter
- Physician education – Family practice and internal medicine departments, SPI group
- Communication with nurses/nurse managers/physicians to plan discharges
- Communication with SAMS staff – patient list, follow up issues, weekend documentation
Warfarin
September 2011 – April 2012
n=3
Pharmacy Consult
Drug Service (n=223)
Drug
Poly Pharmacy
Adherence
n=205
PCK
n=3
Drug
n=5
Interaction
n=1
Warfarin

Total Number Warfarin Consults
Sept 2011 – April 2012

Anticoagulation Stewardship
Program – Business Case
- Communicate vision and request resources
- Outline
  - Background and environmental analysis
  - Proposal
  - Benefits to the organization
  - Resource requirement
  - Financial analysis (ROI)
  - Key deliverable actions and timelines

Anticoagulation Stewardship
- Definition .... My version
  ... Pharmacist-driven coordination of care
designed to manage, measure and
improve the use of anticoagulants by
implementing processes to promote
optimal and safe use of anticoagulant
regimen to achieve best clinical
outcome...

Summa Health System (ACH)
Anticoagulation Stewardship Program
- Objective: To improve anticoagulation
management and safety in warfarin patients
through patient education, increased
communication with providers, use of evidence-
based dosing, and focus on transitions of care
- Team Players: Lead Pharmacist, Pharmacy
residents, Pharmacy Technicians
- Clinical staff pharmacists cover the service on
weekends/holidays
Modification to Pilot Program …

- Focus on warfarin management portion of the consult service
- Warfarin order set changes
- Partnership with Internal Medicine center to provide warfarin management and outpatient transitions to patients on Medicine Teams
- Call back program to all discharged warfarin patients to follow up regarding INR checks.

Anticoagulation Stewardship: Pharmacy Technician

- Job Description (expectations/qualifications)
  - Experience interacting with patients
  - Good communication skills
  - Good computer skills (pass test – Microsoft word, excel, access)
  - Monday – Friday (first shift)
- Training
  - Computer programs – Excel, Access, PLATO, Standing stone

Anticoagulation Stewardship: Pharmacy Technician

- Responsibilities:
  - Communication with pharmacists, nurses and patients (new consults, discharges etc)
  - Call back program
  - Research – data collection/entry
  - Professional development – maintain pharmacy technician certification

Successes

- Program growth
  - 1st quarter 2012 – 114 consults
  - 4th quarter 2012 – 199 consults
- Improved transitions of care
  - Mean follow up days after discharge:
    - Consult patients: 2.9 days
    - Non-consult patients: 6.9 days

Readmission Rate for Consult Group

Number of SAMS Referrals
Current Challenges

- Coverage for time off
- Training of weekend/holiday coverage pharmacists
- Coordination of follow up on weekends/holidays
- Work load (rapid growth)
- Transitions of care to other settings (SNF, Rehab, HC, PCP)

Future Enhancement

- Anticoagulation transitions in the ED
- Anticoagulation selection for new starts
- Formal anticoagulation stewardship rounds with a physician
- Anticoagulation in pre-operative & pre-procedural patients – develop bridging protocol and order set
- Standardize Anticoagulation patient education across all units (booklet, TV, Nursing/pharmacy)

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References


QUESTIONS??