Avoiding Adverse Drug Events: Antibiotic Stewardship and Anticoagulation

Essential Hospitals Engagement Network

June 5, 2014
The chat tool is available to ask questions or comments at any time during this event.
RAISE YOUR HAND

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ENGAGE AT OUR NEW WEBSITE!

Network with peers, learn how essential hospitals are changing lives
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AGENDA

• Partnership for Patients and 2014
• Building, sustaining and evaluating an antimicrobial stewardship program (UCLA Health)
• Reducing anticoagulation ADEs (Hennepin County Medical Center)
• Q & A
• Upcoming events
MEMBERS-ONLY ADE RESOURCES

• ADE tab includes
  » Resources
  » Links
  » Discussion thread
  » Recordings of past webinars

Visit http://essentialhospitals.org/groups/ehen/adverse-drug-events/ to learn more today.
SPEAKER INFORMATION

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Director of Quality Improvement and Associate Clinical Professor in the Division of Infectious Diseases,
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Department of Quality Management
UCLA Health
Los Angeles, CA
Our Facility

RONALD REAGAN MEDICAL CENTER
– 520 private patient rooms with capability to transform into intensive care room
– Level 1 trauma center
– 23 operating rooms
– 6 cardiac cath labs
– 8 procedural suites for interventional imaging
– 46 pre- and post-recovery spaces
– Surgical Observation Unit for additional post-operative or post-procedural care

PEOPLE
– Faculty (phys and non-phys): 2,000
– Clinical voluntary faculty: 1,877
– Registered nurses: 3,350
– Residents and fellows: 1,010
– Staff members (therapists, technicians and other staff): 11,476
Geography of Carbapenemase producing Enterobacteriaceae

Nov, 2006
Geography of Carbapenemase producing Enterobacteriaceae

2007
Geography of Carbapenemase producing Enterobacteriaceae

2011
Geography of Carbapenemase producing Enterobacteriaceae
Geography of Carbapenemase producing Enterobacteriaceae

Current
Antibiotic are Widely Abused

- 30% of all hospitalized inpatients at any given time receive antibiotics
  - >60% at UCLA
- 1/3 to 1/2 are inappropriate or unnecessary
- Antimicrobials account for upwards of 30% of hospital pharmacy budgets.
- Inappropriate and excessive use leads to:
  - Resistance, *C. difficile*, increased morbidity, mortality, increased cost, increased litigation
Why so much misuse?

- Fear of inadequate empiric coverage
- High number and complexity of drugs, syndromes, and pathogens
- Poor training in antibiotic use
- Perceived conflict between what is best for a patient and what is best for public health
  - “Our patients are different…”
What we set out to accomplish...

Our Team Aim:

**Goal**: To promote the appropriate use of antimicrobials** by selecting the appropriate dose, duration and route of administration, to eliminate unnecessary and inappropriate use and to decrease adverse effects of overuse.

**including antifungals

Elevator Speech: We want to get the right antibiotics at the right time for the right length to the right patient. New antibiotics are not being developed, bacteria (and patients) are gaining resistance to the drugs we already have.
Developing an Antimicrobial Stewardship Program: The Core Team and Supporting Stakeholders

- Develop a culture change which embraces prudent antibiotic use
- Identify and gain solid commitment from members of the ASP
- Administrative support is essential
- ASP operates under auspices of the CMO and QA/Safety
- A commanding Chief Medical Officer, Medical Executive Committee, and Pharmacy and Therapeutics Committee enhance the success of an ASP
- Patient safety is linked to antibiotic resistance – make them believe it
Adequate Opportunities to Exercise Stewardship and Interventions: “The 5 D’s”

Select Accurate Empiric Drug Therapy
- Education using antibiograms
- Consensus Guidelines & clinical pathways; clinical decision support tools
- Antibiotic order forms
- Appropriate consideration of combination therapy

Select Dose
- Education using PK/PD concepts
- Consensus Guidelines & clinical pathways; clinical decision support tools
- Antibiotic order forms, especially for prolonged infusions
- Use adequate dose/duration to cure infection & reduce toxicity

De-Escalate
- Education
- Discontinue combinations if not indicated by C&S
- Pathogen-directed therapy based on C&S results
- IV-to-PO therapy

Adequate Duration
- Education
- Consensus Guidelines & clinical pathways for some infections
- Antibiotic order forms with automatic stop orders
- Clinical decision support tools and computer prompts
- Use adequate dose/duration to cure infection & reduce toxicity

Decreased Potential for Emergence of Resistance
Core Strategies Include a Large Number of Tactics

**Definition:** Judicious use of antimicrobials in order to improve patients outcomes, control resistance and decrease healthcare expense

**Achieved through:**

- **Education**
  - Stewardship training; Grand Rounds
  - Institution-specific empiric therapy guidelines

- **Guidelines**
  - CAP, HAP, VAP, IAI, SCIP (surgical prophylaxis), UTI, SSTI/DFI, FN
  - Renal dosing, PK/PD, monitoring anti-fungal therapy (TDM), aminoglycoside/vancomycin
  - Early conversion to PO

- **Order Sets**
  - De-escalation of therapy; appropriate duration of therapy; infection markers

- **Dose Optimization**

- **IV to PO**

- **Streamlining**
  - Intervention tracking; develop tools

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Primary Drivers

1. Timely and appropriate initiation of antibiotics
   - Decreased incidence of antibiotic-related adverse drug events (ADEs)
   - Decreased prevalence of antibiotic resistant healthcare-associated pathogens
   - Decreased incidence of healthcare-associated C. difficile infection
   - Decreased pharmacy cost for antibiotics

2. Appropriate administration and de-escalation

3. Data monitoring, transparency, and stewardship infrastructure

Secondary Drivers

1. Promptly identify patients who require antibiotics
2. Obtain cultures prior to starting antibiotics
3. Do not give antibiotics with overlapping activity or combinations not supported by evidence or guidelines
4. Determine and verify antibiotic allergies and tailor therapy accordingly
5. Consider local antibiotic susceptibility patterns in selecting therapy
6. Start treatment promptly
7. Specify expected duration of therapy based on evidence and national and hospital guidelines
8. Make antibiotics patient is receiving and start dates visible at point of care
9. Give antibiotics at the right dose and interval
10. Stop or de-escalate therapy promptly based on the culture and sensitivity results
11. Reconcile and adjust antibiotics at all transitions and changes in patient’s condition
12. Monitor for toxicity reliably and adjust agent and dose promptly
13. Monitor, feedback, and make visible data regarding antibiotic utilization, antibiotic resistance, ADEs, C. difficile, cost, and adherence to the organization’s recommended culturing and prescribing practices
14. Develop and make available expertise in antibiotic use
15. Ensure expertise is available at the point of care
## Current Status and Plans for working on the Secondary Drivers

### Primary Driver: Appropriate selection, administration and de-escalation

<table>
<thead>
<tr>
<th>Secondary Driver</th>
<th>UCLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local antibiotic susceptibility patterns</td>
<td><strong>Prospective audit/feedback</strong></td>
</tr>
<tr>
<td></td>
<td>- Online antibiotic handbook with web-app, annual revisions to reflect antibioticogram</td>
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<tr>
<td></td>
<td>- Increase visibility of antibiogram</td>
</tr>
<tr>
<td></td>
<td>- Epic Decision Support/Order Sets</td>
</tr>
<tr>
<td>Antibiotic allergies and tailor therapy</td>
<td><strong>Prospective audit/feedback</strong></td>
</tr>
<tr>
<td></td>
<td>- Antibiotic hotline</td>
</tr>
<tr>
<td>Do not give abx w/ overlapping activity or unsupported by evidence</td>
<td><strong>Prospective audit/feedback</strong></td>
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<td>Stop or de-escalate therapy promptly based on culture/sensitivity results</td>
<td><strong>Prospective audit/feedback</strong></td>
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<tr>
<td></td>
<td><strong>Blood culture monitoring for drug/bug mismatches</strong></td>
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<tr>
<td>Monitor &amp; adjust at all transitions and changes in patient’s condition</td>
<td><strong>Vanc/AG monitoring per pharmacy</strong></td>
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<tr>
<td></td>
<td><strong>Hospitalist outreach</strong></td>
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<td>Monitor for toxicity reliably and adjust agent/dose promptly</td>
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## Current Status and Plans for working on the Secondary Drivers

### Primary Driver: Data Monitoring and Transparency

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<th>Secondary Driver</th>
<th>UCLA status/plans</th>
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</table>
| Monitor, feedback and make visible data regarding abx utilization, abx resistance, ADEs, *C. difficile*, cost and adherence to the organization’s recommended culturing and prescribing practices | - **Prospective audit with concurrent review and feedback**  
- Participation in Infection Control, Clinical Effectiveness Committees  
- Standardize MD protocols and pathways  
- Surveillance and reporting of antimicrobial utilization  
- Academic detailing  
- Get Smart About Antibiotics Week (CME, Nov 19th)  
- Housestaff education curriculum  
- Education and marketing campaign (see posters) |
# Current Status and Plans for working on the Secondary Drivers

## Primary Driver: Availability of expertise at the point of care

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| Develop and make available expertise in pharmacology and antimicrobial spectrum and activity | - Get Smart About Antibiotics, including CME course (November 19, 2011)  
- ASP website with resources  
- Online antibiotic handbook with web-app  
- Working with Epic team to develop Abx link and information at point of care  
- ASP Hotline  
- Vancomycin/AG dosing per pharmacy protocol |
| Ensure expertise is available to clinicians at the point of care                 | - ASP Hotline  
- Website/handbook  
- Academic detailing  
- Educational curriculum                                                                                                                                 |

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*UCLA Health*
Barriers to Implementation

- **Economic**
  - Program costs money (funding for an ID pharmacist, ID physician, data analyst; space)
  - Program does not generate revenue

- **Philosophic**
  - Prescribers must accept that a 3rd party will be involved in decisions made about their patients
  - Institution must support this principle

- **Administrative**
  - Coordination of several groups required (e.g. hospital leadership, pharmacy, infectious diseases division, microbiology, etc.)
Economic Issues

• Few people can put together a plan on paper that provides an economic reason for a stewardship program

• Danger of basing case for a stewardship on plan for saving money
  • Takes a while to happen
  • Continuous cost reduction not possible
  • Cost-shifting may not be meaningful to the bottom line of departments

• The economic impact of a program on ID consultation requests
Philosophic Issues

• Must assess the climate at the institution to determine optimal approaches to getting physician buy-in

• Reframe goals—many physicians respond poorly to the construct of saving money for the greater good
  • Limit antibiotic resistance
  • Limit antimicrobial toxicity
  • Optimize patient care and safety
  • Education
  • My patients are different
**Philosophic Issues**

• Common approach has been to identify leaders who buy-in to the concept and influence their own
  • Champion in administration
  • Champion in departments (e.g. surgery, OB)
• Very physician-oriented
• Approach may be different in teaching vs. non-teaching environment
• Others who should be involved in changing the philosophy of antimicrobial use
  • Nursing, non-ID pharmacists, hospitalists
Making the Business Case for Antimicrobial Stewardship

• Quality of care
• Core measures/regulatory issues
• Reimbursement (lack of) for healthcare associated infections
• Antimicrobial resistance
• Cost
These recommendations have been categorized by impact and amount of effort for implementation. Implementation will be completed in three phases: immediate, short-term, and long-term.

**Immediate:**
- Prospective audit with concurrent review and feedback
- Online antibiotic handbook with web-app

**Short Term:**
- Surveillance and reporting of antimicrobial utilization
- Standardize MD protocols and pathways
- Initial formulary restrictions
- Vancomycin/AG dosing per pharmacy protocol

**Long Term:**
- Develop health system ASP dashboard
- Novel PD strategies and dose optimization
- Evidence-based CareConnect content
- CareConnect reporting & BPAs

**Immediate:**
- Education and marketing campaign
- Academic detailing

**Short Term:**
- Disease state-specific DUEs
- Get Smart About Antibiotics Week (CME)
- CareConnect antimicrobial dosing
- Develop and report outcome measures

**Long Term:**
- Improve micro lab test utilization
- Discharge planning optimization
- Housestaff education curriculum
- Develop physician-based utilization reports for benchmarking
- NHSN AUR module
Introduction

Antibiotic resistance has increased dramatically over the past several decades. Increasing resistance, coupled with a pipeline for new antimicrobial agents which has all but dried up, has meant prudent use of antibiotics is critically important. The selection of optimal therapy for infections can be a daunting task for healthcare professionals. Antibiotic resistance is among the most serious issues facing contemporary healthcare. Changing antibiotic resistance patterns, rising antibiotic costs and the introduction of new antibiotics have made selecting optimal antibiotic
Education and marketing campaign

ANTIMICROBIAL AGENTS

Benefits of Oral Therapy
- Equally as effective as IV
- Shortened length of stay
- Fewer bloodstream infections
- Reduction in administration and preparation time
- Decreased drug cost

Which Agents?
- Ciprofloxacin
- Levofloxacin
- Floccinazole
- Metronidazole
- Clindamycin
- TMP/SMX
- Doxycycline
- Linezolid

When to Transition?
- Functional 48 hour
- Stable vital signs
- WBC normalizing

Which Infections?
- Respiratory tract infections
- Urinary tract infections
- Including pyelonephritis
- Skin and soft tissue infections
- Intra-abdominal infections
- Intra-abdominal infections

How to transition?
- Transitioning the same drug is easy:
  - e.g. Levofloxacin IV → Levofloxacin PO
- Exception: Clindamycin 600 mg IV → 300 mg PO
  - Other options:
    - Piperacillin/Tazobactam (Zosyn)
    - Ciprofloxacin + Clindamycin
    - Ciprofloxacin + Amoxicillin/Clavulanate
    - Levofloxacin + Metronidazole

Let's Go PO
Transitional Antimicrobial Therapy

Call the Antimicrobial Stewardship Program Hotline with questions about transitions to oral therapy at x7-7567

UCLA Health
Education and marketing campaign

Antimicrobial Stewardship Hotline: 310-267-7567
www.asp.mednet.ucla.edu Email: asp@ucla.edu

ANTIMICROBIALS:
IF IT DOESN’T
GROW
JUST SAY NO

MRSA Doesn’t Hide!
1. **Timeliness**
   - Monthly (or more frequent) associated with better performance than quarterly or annually

2. **Individualization**
   - Rather than group or aggregated feedback

3. **Lack of punitivity**

4. **Customizability**
   - Feedback deemed meaningful associated with better performance
Daily antibiotic reports generated

Identify patients requiring potential intervention

Focused patient record review/computer record review

Supplemental strategies:
- Clinical practice guidelines
- Pharmacodynamic dose optimization
- Streamlining/de-escalation
- IV to oral therapy
- Education

No intervention

Routine intervention

Additional clinical input/evaluation necessary

Recommendation/educational note left in a non-permanent fashion in the patient’s medical record OR prescriber contacted
Types of Interventions

- Streamlining
- Regimen Change
- Drug Addition
- IV to PO
- Dose Change
- Drug Interaction
- ID Consultation
- Surgical Prophylaxis

Impact Measures:
- Decrease Resistance
- Improve Quality
- Decrease Cost
Data Tracking

• Use existing software/systems to create DOT/1000 Pt days run charts

• **Software:** Excel (it’s free!)

• **Information:**
  - Antimicrobial start/stop date for each patient
  - Item description (drug)
  - Route
  - Census data

• **Formulas:** (see next slide, also free!)

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Pharmacy  IT

IP or Quality
Formulas

Adjusted Start/Stop Times

=IF(D3>$D$1,$D$1,D3) or =IF(D3<$D$1,$D$1,D3)

This corrects the date to the 'adjusted date' to make sure you are only counting days between the particular time period.

Count the days between start/stop times

=IF(DAYS360(C3,E3)<1,1,(DAYS360(C3,E3)))

This counts the number of days between two cells. If it is less than 1, it makes it 1. This one can also be adjusted to estimate prophylactic DOT/1000 pt days. If days360<2 then you make it 0.

Sum all days of therapy to create total

=sum(C2:C123)
SPEAKER INFORMATION

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Ambulatory Pharmacist Manager
PGY-2 Ambulatory Care Residency Program Director
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Minneapolis, MN

Jean Kohs, RPh
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Minneapolis, MN
Reducing Anticoagulation ADEs – Hennepin County Medical Center

Haley Holtan, PharmD, BCPS, BCACP
Jean Kohs, RPh, CPHQ
Hennepin County Medical Center
Minneapolis, MN
Hennepin County Medical Center

- Safety Net Hospital
- Level 1 Adult & Pediatric Trauma Center
- Major teaching hospital

2013 Statistics

- 455 operating beds
  - Average daily census 348
- >107,000 ED Visits
- >65,000 Ambulance runs
- >537,000 Clinic visits
- >66,000 Poison Center calls
Patient Story – 
Warfarin/Drug Interaction

- June 4\textsuperscript{th} - Inpatient admission Dx: asthma exacerbation
- Medication list includes warfarin with recent therapeutic INR & prednisone 10 mg daily
- Prednisone dose increased (burst of 40 mg daily then a taper)
- Augmentin x 10 day initiated
- Warfarin monitoring by PharmD
- Discharge to home

Patient readmitted 6/17 for supratherapeutic INR of 7.4
Where the system went wrong:

• Patient was discharged on PTA dose of warfarin and prednisone taper over 16 days down to dose of prednisone 10 mg daily.
• Patient also discharged on Augmentin 875mg BID x 10 days
• Possible interaction was not clearly addressed in documentation in either case
• No follow-up appointment scheduled with anticoagulation clinic at time of DC
• Patient placed on warfarin in 2009
• Reason for therapy – unprovoked DVT
• Patient seen regularly by anticoagulation clinic
• Multiple notes in chart about patient not liking to take warfarin
• Inpatient admission due to supratherapeutic INR in 2010 (minor bleed)
Patient Story - Duration of therapy

- April 2013, first visit with PharmD in anticoagulation clinic.
- Identified: recommended duration of therapy with warfarin was 3-6 months
- PCP contacted re: indication for therapy
- May 2013, warfarin discontinued

Estimated cost avoidance: one avoidable hospitalization, 3.5 yrs of warfarin therapy and associated clinic visits, improved patient quality of life, improved patient satisfaction = $$$
MN Hospital Association (MHA)

- MHA represents 143 hospitals and health systems
- Supply resources, best practices and guidance to provide high quality, affordable service and support to patients
- Partnership for Patients program
• MHA Hospital Engagement Network (HEN)
  – 113 hospitals providing data
  – Total of 10 focus areas
• MHA Road Map to Adverse Drug Event Reduction Program
  – ADE advisory group developed a “road map” based on evidence based best practices focusing on:
    • Anticoagulants
    • Hypoglycemics
    • Opioids
• Tool Kit
• Gap Analysis documents
MHA provides Tools Kits to member hospitals. The Anticoagulation Tool Kit includes:

- CHEST guidelines
- Joint Commission Sentinel Event Alert #41
- IHI Anticoagulation Took Kit
- ISMP Anticoagulation Self Assessment Tool
- Joint Commission Stroke Document
- INR Range and Duration sample document
- Staff Education examples
Anticoagulation Agent Adverse Drug Event Gap Analysis

5 areas addressed:

• Antithrombotic Management Practices
• Warfarin Management Practices
• Parenteral Antithrombotic Management Practices
• Critical Thinking & Knowledge Strategies
• Patient Education
Anticoagulation Agent Adverse Drug Event Gap Analysis:

Gap Analysis Results

• 2012 & 2013 data
  – 43% reduction in events resulting in an INR > 5
  – The hospital with highest compliance achieved 85% of best practices
  – MN hospitals overall were at 78% compliance
All hospitals compliant in the following areas:

- Providers have ready access to inpatient and outpatient laboratory results and drug-drug interaction information
- Blood draws for INR and warfarin dosing occur at the same time each day
- INR is primary laboratory test used to monitor warfarin therapy
- UFHs are available in limited concentrations/vial sizes/prefilled syringes or premade solutions
- PTT drawn no sooner than 6 hours after UFH initiated
- Pharmacists are available to assist with education for any patients at risk of non-compliance
Areas that continue to be difficult to achieve:

- Automatic nutrition consults when patients are placed on warfarin (41%)
- Prior to ordering any heparin product, the facility requires prescribers to specifically ask patients if they have a known history of HIT (31%)
- For initial antithrombotic education for new hires and existing staff, education includes a post-test incorporating a case-study approach (28%) and plans for targeting gaps in knowledge (38%)
- Use of a standardized tool prior to initiating antithrombotics including nutritional status, bleeding associated with previous antithrombotic use, clotting history, and recent trauma (31-55%)
- For critical test results, a defined acceptable length of time between receipt of results and clinically appropriate antithrombotic dose change (52%)
Gap Analysis

How is HCMC doing?
Areas of high compliance at HCMC:

• Pharmacist dosing of warfarin
• Order sets for all anticoagulants which include baseline labs, dosing, and monitoring
• Guidelines (such as VTE prophylaxis, anticoagulant reversal, surgical holds) frequently imbedded into documentation with Smart text/smart phrase and use of flowsheets
• Building best practices into EHR as defaults
• Use of Smart pumps
• Availability and timing of labs (recently went to bedside barcoding of labs which significantly decreased wrong patient/wrong test errors)
Areas difficult to achieve:

- **Automatic nutrition consults when patients are placed on warfarin**
  - Not automatically ordered, dietary follows low Vitamin K menu
- **Prior to ordering any heparin product, the facility requires prescribers to specifically ask patients if they have a known history of HIT**
  - Difficult to require and control questions asked by each provider
- **Use of a standardized tool prior to initiating antithrombotics including nutritional status, bleeding associated with previous antithrombotic use, clotting history, and recent trauma**
  - Something that we need to build into EHR
- **For critical test results, a defined acceptable length of time between receipt of results and clinically appropriate antithrombotic dose change**
  - Time for critical result to be reported is defined, but we have yet to formally define time goal for when to act on the result
How is our performance?
INR >5 in patients on warfarin per 1000 patient days

- Blue bars: INR >5 in patients on warfarin per 1000 patient days
- Black line: Linear (INR >5 in patients on warfarin per 1000 patient days)

Time periods:
- Jan-10 to Jan-14
Anticoagulant-Related ADE

- 2009: 120
- 2010: 110
- 2011: 70
- 2012: 50
- 2013: 80

# anticoag
### Increased use of anticoagulants

<table>
<thead>
<tr>
<th>Inpatient Only</th>
<th># warfarin orders</th>
<th># enoxaparin orders</th>
<th># heparin SQ orders</th>
<th># heparin Infusion orders</th>
<th># dabigatran/rivaroxiban orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2012</td>
<td>1726</td>
<td>1286</td>
<td>2062</td>
<td>283</td>
<td>8/4</td>
</tr>
<tr>
<td>Q1 2013</td>
<td>1779</td>
<td>1265</td>
<td>2399</td>
<td>298</td>
<td>10/1</td>
</tr>
<tr>
<td>Q1 2014</td>
<td>1903 (10% increase)</td>
<td>1556 (20%)</td>
<td>2286 (11%)</td>
<td>326 (15%)</td>
<td>8/12 (67%)</td>
</tr>
</tbody>
</table>

* Increased use of anticoagulants → increased amount of ADEs
Why the increase?

Timeline of Events possibly related:

• 2012 VTE core measures work begun
• 2013 VTE order sets added
• 2013 All clinical personnel educated on reporting any event (ex. ADEs) – spike in voluntary reporting seen
What about the patients?

- Enhanced documentation
- Enhanced flowsheet (inpatient and outpatient see/document in same location)
- Collaboration with clinic to ensure patient slots always available for hospital follow-up
- Updated patient education materials (same inpatient/outpatient)
- Updated anticoagulation information on the AVS to include duration of therapy
- Work towards certification of RNs in anticoagulation clinic
- Define stand role of PharmD in outpatient anticoagulation management (ex. high risk cases)
Planned Improvements

- Integration of SMART pumps with EHR
- Formation of Anticoagulation Oversight Committee for improved transitions of care
- Updated patient education materials (same for inpatient/outpatient)
- Updated anticoagulation information on the AVS to include duration of therapy
- Continue to refine the VTE program
• Jean Kohs, Medication Safety Manager
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• Haley Holtan, Ambulatory Pharmacist Manager
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QUESTIONS

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UPCOMING EVENTS

• Leadership for Safety: Safety and the EHR  
  JUL 10, 2014 AT 12:00 PM EDT

• Learning New Ways of Communicating  
  AUG 13, 2014 AT 2:00 PM EDT

Visit http://essentialhospitals.org/webinar/ to register today.
VITAL2014, America's Essential Hospitals’ annual conference, is coming to San Antonio! Plan now to join us Wednesday, June 25, through Friday, June 27, at the Westin Riverwalk for the premier national event for hospital and health system professionals. Together, we will support our shared mission of ensuring high-quality health care for vulnerable patients.

THANK YOU FOR ATTENDING

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Visit [http://essentialhospitals.org/groups/ehen/](http://essentialhospitals.org/groups/ehen/) to **collaborate today.**