NYSPFP ADE/Medication Safety
“Office Hours” Webinar

December 19, 2013

A partnership of the Healthcare Association of New York State
and the Greater New York Hospital Association
# Agenda

I. Review of ADE/Medication Safety Pilot Project Tools and Resources

II. Hospitals’ Experiences with Carrying Out their Action Plans

III. Hospitals’ Strategies for Collecting Data Related to the new NYSPFP ADE Measures

IV. Interactive Audience Discussion and Q&A

---

### Featuring NYS Hospital Representatives

<table>
<thead>
<tr>
<th>Name</th>
<th>Role and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kathryn Mason</td>
<td>RN, MSN, Project Manager and Clinical Educator, St. Luke’s Cornwall Hospital</td>
</tr>
<tr>
<td>Andrew DiLuca</td>
<td>R.Ph., Pharmacy Director, Kaleida Health</td>
</tr>
<tr>
<td>John Siejak</td>
<td>Pharmacist Computer Services, Kaleida Health</td>
</tr>
<tr>
<td>Stanley Pierre</td>
<td>MD, MPA, Associate Director of Regulatory Affairs, Queens Hospital Center, NYCHHC</td>
</tr>
<tr>
<td>Maria Szczupak</td>
<td>BS, PharmD, American Academy HIV Pharmacist, Queens Hospital Center, NYCHHC</td>
</tr>
</tbody>
</table>
NYS PARTNERSHIP FOR PATIENTS

NYSPFP GUIDING PRINCIPLES
FOR THE REDUCTION OF ADVERSE DRUG EVENTS & MEDICATION SAFETY

INNOVATE
Test new processes or protocols, organization or team approaches, hand-offs, and pharmacy-led or managed interventions.

Use smart infusion pumps for IV medication administration of all high risk medications (e.g., opioid PCA, epidural, antithrombotics, platelet inhibitors, insulin) with functionality employed to:
- Intercept and prevent wrong dose errors.
- Intercept and prevent wrong infusion rate errors.

Develop an internal business case for reorganized processes, including the establishment of a hospital-based medication management team. For example, this may include analyses of the potential reduction of waste (i.e., time, resources), the mitigation of risk, and the value of positive outcomes.

ENGAGE
Engage pharmacists in a pharmacy-led medication reconciliation and counseling process for high-alert drugs.
- Engage pharmacists in the medication reconciliation process on admission and at discharge.
- Establish a process to review medication orders at the time of transition for accuracy, necessity, potential side effects, and/or interactions for patients.

Confirm that the facility’s patient and family education on anticoagulants, hypoglycemic agents, and opioids includes, at a minimum, indication, symptoms for monitoring, dietary issues, drug interactions, disease interactions, monitoring requirements, duration of therapy and potential adverse effects.

Incorporate a teach-back methodology into the facility’s routine patient and family medication education process. Improve dissemination and sharing of strategies and results from your facility’s quality improvement initiatives targeted at adverse drug event prevention across all levels of staff, and with other stakeholders.

Ensure leadership sponsorship for the re-design of more effective processes to reduce ADEs.

INTEGRATE
Establish hospital-based, high-alert drug management teams (for opiates, insulin, and anticoagulants) that include or are led by a pharmacist, or pharmacy technician.
- Ensure venous thromboembolism (VTE) reduction team efforts are aligned closely to anticoagulant-related adverse drug event (ADE) prevention efforts.
- Ensure the integration and alignment of team efforts related to insulin management in developing and implementing standard processes and protocols for managing insulin in the surgical, critical care, and pharmacy departments.
- Ensure that ventilator-associated event (VAE) and delirium reduction teams, as well as pain management teams, are coordinating with all opioid-related ADE prevention efforts.

Integrate specific improvement goals for high-alert drugs into existing care transition models and processes.

Promote a multidisciplinary, coordinated, and systematic approach to inpatient medication management, e.g., “Anticoagulation rounds,” pharmacist-nurse-managed medication management services, “Anticoagulation Stewardship,” and “culture of safety” around medication management.

HARDWARE
Develop and implement standard policies and practices for managing the initiation and maintenance of anticoagulation, insulin, and opioid therapy.
- Establish processes for addressing lab results that are out of the normal range in a timely manner.
- Develop opiate rescue protocols.
- Develop a process for the implementation of VTE prevention recommendations post high-risk screening.
- Utilize basal-bolus insulin management protocols.

Build internal systems to capture data on relevant ADE process and outcome measures to track performance over time.
- Develop EHR tools to enable provider access to real-time, integrated pharmacy-laboratory data to facilitate seamless access to pertinent medication and laboratory data and optimal inpatient medication management.
- Track adherence to protocols across all patients.

Implement clinical decision support tools specific to medication management.

Establish and/or utilize post-hospital Coumadin or anti-coagulation, pain management, or diabetes self-education clinics.
# Action Planning Worksheets

**NYSPFP Adverse Drug Event Reduction Initiative**
**Team Action Planning Worksheet for Anticoagulants**

The following practice recommendations checklist, developed by NYSPFP in partnership with the Institute for Safe Medication Practices (ISMP), provides anticoagulant-related process improvement strategies for consideration as hospitals work to reduce adverse drug events.

<table>
<thead>
<tr>
<th>Practice Recommendations for Anticoagulants</th>
<th>Checklist of Hospital’s Implementation Status</th>
<th>Action Plan/Next Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate baseline laboratory values (H&amp;H, serum creatinine, or platelet count) are obtained prior to the initiation of anticoagulant therapy.</td>
<td>Fully</td>
<td></td>
</tr>
<tr>
<td>A baseline INR is obtained on all patients admitted on warfarin therapy.</td>
<td>Partially</td>
<td></td>
</tr>
<tr>
<td>An actual metric weight is obtained for patients on continuous heparin therapy.</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Patients on warfarin have an order for daily INR monitoring.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A baseline assessment of the patient’s medical history and risk factors (e.g., history of trauma, HIT, prior anticoagulant use) is performed prior to prescribing anticoagulant therapy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disease specific protocols (DVT, AF, PE) are readily available and used to provide appropriate and safe anticoagulant therapy.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hospitals Experiences with Carrying out their Action Plans
Adverse Drug Events

A Commitment to Patient Safety in 2014
About Us:

• 200 inpatient beds in Newburgh, NY
• Emergency Department in Cornwall, NY
• Underserved community
• Culturally-diverse population
• The pharmacy processes approximately one million medication orders per year
Background

• Began participation with NYSPFP- April 2012
• Monthly reporting of Adverse Drug Events
• Evaluating Medication Reconciliation at both the points of admission and discharge
• Continue to find challenges with medication accuracy within the processes
• Attended Regional Meeting- November 2013
Our Light Bulb Moments

• SLCH’s Adverse Drug Event Team:
  o Director of Pharmacy (Kristi Tudor)
  o Manager of Pharmacy (John Battiato)
  o Clinical Pharmacist (Dr. Katie Boyd)
  o Project Manager (Kathryn Mason)

• The ISMP presentation at the NYSPFP Regional Conference stirred thoughts and conversation about current practices at SLCH

• Our plans for moving forward in 2014:
Improving Our Safety - Weight

- **Weights** - Real weight, not assumed or “eye ball” weight; if a patient’s weight is estimated, then the documentation must reflect it within the electronic medical record
- Weight is obtained using consistent procedure and equipment, example: clothing, bedding, etc.
- New protocol describing process (as above) currently under pilot in the ICU, arising from the ICU Practice Guidelines Committee
Improving Our Safety - Expert Review

- **Pilot Project**- A Pharmacist performs a Medication Reconciliation review at admission/discharge; educates patient about new meds, high alert drugs, antibiotics; may contact physicians/pharmacies as necessary; 100% review on the Pilot unit, Monday through Friday
- In November, 59 patients’ medications were reviewed for safety and accuracy by the pharmacist
• **Insulin drips are only mixed only in the pharmacy**- Investigating the feasibility of an insulin “kit” in which there is a disposal field, insulin vial, 0.9 NS 100 mL bag and explicit instructions on the standardized mixing of an insulin infusion (overnight use only)

• **Development of a standardized hypoglycemic protocol**- Planned as an ICU Practice Guidelines project for 2014
Improving Our Safety - Insulin

- **Consistency of blood glucose documentation** - Address and eliminate multiple sites/choice within the Electronic Health Record (EHR) for charting finger stick blood glucose
- **Standardized sliding scale insulin practices for NPO patients** - For review and discussion in 2014
Improving Our Safety- Anticoagulation

- Baseline evaluation of risk factors- Trauma, fall risk, GI bleeding
- Heparin-induced thrombocytopenia (HIT) is evaluated and added as an allergy to the EHR
- Anticoagulation reversal- Review Vitamin K usage/ dosing/ route of administration; consider automatic substitution from IM to IV
Improving Our Safety - Anticoagulation

- **Heparin flush solution** - Restrict availability of heparin solution to only one strength and volume; for implementation in 2014
- **Real weight for patients receiving heparin** - Accuracy/standardization of obtaining weights addressed in earlier slide
Improving Our Safety- Opioids

- **Patient’s opioid status (naïve vs. tolerant)** – Documentation of opioid status prior to the administration of opioid medications
- **Opioid status guides medication orders** - Long-acting opioids are reserved for tolerant patients
- **Pain protocols** - Planned as an ICU Practice Guidelines project for 2014
Improving Our Safety - Opioids

- **Naloxone as a component of opioid orders** - Evaluate the ability to implement a ‘reflex’ order for naloxone; facilitate tracking/trending of use, which is currently an organizational challenge
- **Basal Patient Controlled Analgesia (PCA)** - Ordered only for the opioid-tolerant patient
• New metrics for high alert medications- SLCH’s IT department is currently developing reports to facilitate collecting data for anticoagulation, insulin and opioids required for participation in the NYSPFP initiative

Questions?

Thank you!
NYSPFP Adverse Drug Event/ Medication Safety Initiative: Kaleida Health

Andrew DiLuca, R.Ph., Pharmacy Director, Kaleida Health
John Siejak, Pharmacist Computer Services, Kaleida Health
About Kaleida Health System

- Kaleida Health is the largest healthcare provider in Western New York, serving the area's eight counties with state-of-the-art technology and comprehensive healthcare services.

- Kaleida facilities include:
  - Buffalo General Medical Center,
  - DeGraff Memorial Hospital,
  - Gates Vascular Institute,
  - Millard Fillmore Suburban Hospital,
  - Women & Children's Hospital of Buffalo, and
  - Numerous community healthcare centers.

- Kaleida Health also provides important services through two long-term care facilities, behavioral health programs and the Visiting Nursing Association of WNY, Inc.
# Nursing Centered Initiatives

## Adverse Drug Events

### NYSFP ADVERSE DRUG EVENT REDUCTION INITIATIVE

#### TEAM ACTION PLANNING WORKSHEET FOR ANTICOAGULANTS

The following practice recommendations checklist, developed by NYSFP in partnership with the Institute for Safe Medication Practices (ISMP), provides anticoagulant-related process improvement strategies for consideration as hospitals work to reduce adverse drug events.

<table>
<thead>
<tr>
<th>PRACTICE RECOMMENDATIONS</th>
<th>CHECKLIST OF HOSPITAL'S IMPLEMENTATION STATUS</th>
<th>ACTION PLAN/NEXT STEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice Recommendations for Anticoagulants</td>
<td>FULLY</td>
<td>PARTIALLY</td>
</tr>
<tr>
<td>Appropriate baseline laboratory values (H&amp;H, serum creatinine, or platelet count) are obtained prior to the initiation of anticoagulant therapy.</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>A baseline INR is obtained on all patients admitted on warfarin therapy.</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>An actual metric weight is obtained for patients on continuous heparin therapy.</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>Patients on warfarin have an order for daily INR monitoring.</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>A baseline assessment of the patient's medical history and risk factors (e.g., history of trauma, HIT, prior anticoagulant use) is performed prior to prescribing anticoagulant therapy.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Disease specific protocols (DVT, AF, PE) are readily available and used to provide appropriate and safe anticoagulant therapy.</td>
<td>✗</td>
<td></td>
</tr>
</tbody>
</table>

List specific activities your team will try to accomplish to fully implement each practice recommendation. Include a detailed plan (what, who, how, and starting when) in your notes.

- Mandate pharmacy anticoag service at 86mc
- Enforce existing policy
- Create order sets
## TEAM ACTION PLANNING WORKSHEET FOR ANTICOAGULANTS (continued)

<table>
<thead>
<tr>
<th>PRACTICE RECOMMENDATIONS</th>
<th>CHECKLIST OF HOSPITAL'S IMPLEMENTATION STATUS</th>
<th>ACTION PLAN/NEXT STEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FULLY</td>
<td>PARTIALLY</td>
</tr>
<tr>
<td>Practice Recommendations for Anticoagulants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standardized heparin protocols are available and used.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establish protocols for standardized rapid (emergency) reversal of anticoagulation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard weight based protocols and order sets avoid the use of “u” to indicate “units” of heparin.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computerized prescriber order entry (CPOE) and pharmacy information systems alert providers to duplicate anticoagulant therapy and serious drug interactions/contraindications.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heparin flush, when necessary, is available in prefilled syringes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentrated heparin vials (e.g., 10,000 units/mL or 20,000 units/mL) are not available in automated dispensing cabinets (ADC) or unit stock.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous heparin infusions are administered using a smart infusion device which includes dose error reduction software.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent double check for IV heparin therapy occurs prior to administration, at each rate change, and with each infusion bag change.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge counseling for patients on anticoagulants is provided by a pharmacist.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Written materials on the risks of therapy and signs of toxicity are provided at the time of discharge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory results (aPTT) are available in 2 hours or less for patients on continuous heparin therapy.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

List specific activities your team will try to accomplish to fully implement each practice recommendation. Include a detailed plan (what, who, how, and starting when) in your notes.
The following practice recommendations checklist, developed by NYSPFP in partnership with the Institute for Safe Medication Practices (ISMP), provides medication reconciliation process improvement strategies for consideration as hospitals work to reduce adverse drug events and optimize care.

<table>
<thead>
<tr>
<th>PRACTICE RECOMMENDATIONS</th>
<th>CHECKLIST OF HOSPITAL'S IMPLEMENTATION STATUS</th>
<th>ACTION PLAN, NEXT STEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication reconciliation is an online process in the electronic health record (EHR).</td>
<td>✗</td>
<td>List specific activities your team will try to accomplish to fully implement each practice recommendation. Include a detailed plan (what, who, how, and starting when) in your notes.</td>
</tr>
<tr>
<td>A validation step is performed by a physician or pharmacist after the collection of a medication list.</td>
<td>✗</td>
<td>resource dependent</td>
</tr>
<tr>
<td>Dedicated practitioners are used to collect the medication history (Pharmacy technicians, pharmacists, or nurses).</td>
<td>✗</td>
<td>practitioner dependent</td>
</tr>
<tr>
<td>Admission medication reconciliation is completed by the physician within 24 hours of admission.</td>
<td>✗</td>
<td>some form of ongoing education needs to be developed</td>
</tr>
<tr>
<td>PRACTICE RECOMMENDATIONS</td>
<td>CHECKLIST OF HOSPITAL'S IMPLEMENTATION STATUS</td>
<td>ACTION PLAN/NEXT STEPS</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>FULLY</td>
<td>PARTIALLY</td>
</tr>
<tr>
<td>The discharge medication reconciliation process is completed by the physician.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients with polypharmacy (receiving 8 or more medications) or patients who are first-time users of insulin or an anticoagulant have a pharmacist consultation prior to discharge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-risk patients (heart failure, diabetics receiving new insulin, noncompliant diabetics, patients with new anticoagulant orders) have a scheduled follow up visit and an appointment for appropriate laboratory monitoring prior to discharge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The organization routinely engages the use of disease management practitioners (through Home care, case management, etc.) specifically for high-risk patients e.g., Heart Failure Patients.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A pharmacist is an active part of the home care team reviewing drug histories and managing high-risk patients.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hospital has a formalized process with area long-term care facilities/rehab facilities to share a current medication list upon admission, transfer, as well as an updated list on discharge.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hospitals’ Strategies for Collecting Data Related to the new NYSPFP ADE Measures
New York State Partnership For Patients
ADE/Medication Safety Office Hours

Stanley Pierre, MD, MPA
Maria Szczupak, Pharm.D
Queens Hospital Center
Jamaica, New York
Outline

• Introduction
• Data Collection
• Data Analysis
• ADEs & Current Practice
• Conclusion
Publication of the National Action Plan for Adverse Drug Event Prevention earlier this year by US Department of Health and Human Services is a big step forward and will have a great impact on reducing ADEs.
Data Collection

• IT asked to build reports directly from EHR system.
  – One source of information

• Data Accuracy and Validation
  – October reports reviewed and cross-matched with similar reports run on a monthly basis for some of the same indicators using different clinical systems.
  – Issues identified forwarded back to IT for corrections.

• All reports available every 5th of following month.
Data Collection

• 2 types of reports for each indicator
  – Summary Report with numerator and denominator.
  – Detailed report:
    • MR#, Patient Name, Admission Date, Lab values, Values date and time, Collection date and time.
    • Used by QA department for review of outliers.
Data Analysis

• October report: Eye opener
  – Large number of patients on insulin with at least one event, where Glucose Level was higher than 200.
  – Process put in place to review patients with Glucose Level > 200 trying to determine if poor glucose control was a contributor to increase LOS and Readmission within 30 days when indicated.

• Questions raised:
  – Is sliding-scale insulin working?
  – Any other alternatives?
ADEs & Current Practice

• ADEs reported monthly to P&T Committee & MEC
• Multi-disciplinary project around diabetes control
• In-depth review of use of reversal agents
• Opioid utilization review
  – ER setting
  – Inpatient setting
  – Outpatient setting (drill down by clinic).
ADEs & Current Practice

• Anticoagulants
  – Review of ADEs with significant bleeding/mortality related to prophylactic aPTT values and subcutaneous heparin.
  – Oral Anticoagulation Therapy (OAT)
ADEs & Current Practice

• To enhance current warfarin education for inpatients by implementing an inpatient multidisciplinary structured educational program for warfarin therapy which continues after hospital discharge.

• To evaluate patients’ baseline health literacy, barriers to adherence and knowledge of warfarin therapy.

• To provide individualized warfarin therapy education and an adherence tool (pillbox) to patients/caregivers.

• To assess patient/caregivers’ comprehension of this information by utilizing the Teach-back method.

• To assess retention of warfarin knowledge, medication adherence and compliance with INR monitoring after discharge.
Percent of Patients Aware of Warfarin Indication/Knowledge

OAT Outcome Measure

Percent of Patients Aware of Warfarin Indication/Knowledge 2009 - 2012

Baseline: 28%

After Education: 85% *

* P = <0.0001 Fisher's Exact Test
ADEs & Current Practice

• Baseline/Daily INRs for patients on warfarin therapy

• Other labs – Hgb/HCT, platelets, LFTs, SrCr, h/o coagulopathies

• Warfarin dosing – orders

• Enoxaparin dosing – as per renal function and ABW

• Drug-drug interactions

• Adverse Drug Events

• VTE/Bleeds
ADEs & Current Practice

• Implementation of a comprehensive structured educational intervention for warfarin resulted in high rates of medication adherence, follow-up appointments and sustained knowledge which has been historically correlated with better clinical outcomes.

• Patients in the OAT program had low levels of readmissions related to bleeding or clot formation as well as low rates of warfarin related Adverse Drug Events (ADEs).

• Year to year consistency of data (2009 – 2012) reinforced the utility of standardizing educational messaging to enhance patient knowledge of this high risk medication.

• Results achieved utilizing existing staff implementing structured multidisciplinary educational program for inpatients on warfarin therapy coupled with use of an adherence tool (pillbox) and assessments of health literacy for both patients and caregivers, with return demonstration of knowledge utilizing Teach-back methodology.
Conclusion

• Reducing ADEs: priority focused area
• Reporting on more than required indicators
• Practices hardwired into current practice
“We will not rest even after achieving 0 Harm across the board.”
Project Reminders and Next Steps

Monitoring for Improvement

• Implement and utilize internal systems that capture the new NYSPFP ADE/medication safety measures
• Regularly convene interdisciplinary team to review and discuss data, identify areas of opportunity, and develop appropriate interventions
• Submit a three-month baseline set of data (October through December 2013) by February 15, 2014
• Continue participation in current NYSPFP ADE measurement approach

Educational Opportunities

• Actively participate in NYSPFP ADE/Medication Safety educational programs
• Save the date: January 15, 2014 from 1:00 – 2:00 p.m.
  • Full 2014 calendar coming soon
Questions?