

Florida

Critical Access Hospital

Medication Safety Program

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Project Background

- Joint effort between State of Florida Office of Rural Health, FMQAI, and UF College of Pharmacy
- Funding source - Office of Rural Health (Bob Pannell/Joel Libby)
- Overall project goal – to improve the safety of medication use in Florida's CAHs
- Currently completing project year 7

Methods

- Annual site visits
- Annual Gainesville Summit
 - ◆ Site visit summary report
 - ◆ CAH networking
 - ◆ Topic discussions
- Teleconference support
- Website development
- Medical staff meetings

Pharmacy Service

- Consultant Pharmacist with minimal involvement (3-10 hours/wk)
- Onsite Pharmacist (40 hours/wk)
- Remote Pharmacist coverage (24/7)
 - ◆ Cardinal
 - ◆ ePharmPro
 - ◆ Healthsystem (Shands, Florida Hospital)
- Combination of onsite and remote

RANK ORDER OF ERROR REDUCTION STRATEGIES

Forcing functions and constraints



Automation, computerization, bar code scanning



Standardization and protocols



Time out, checklists and double check systems



Rules and policies



Visual warnings (auxiliary labels)



Education/information



Be more careful, be vigilant

Medication Safety Infrastructure Improvements

- Pharmacy security (locks, nursing access)
- Implementation of Automated Dispensing Cabinets
- Pharmacist review of medication orders
- Removal of concentrated electrolytes
- Removal of heparin 10,000 unit/mL vials
- Storage and labeling of neuromuscular blockers
- Increase use of unit dose packaging
- Increase use of pre-mixed IV solutions
- Standardization of emergency drug supplies and references
- Availability of drug references
- Increase use of pre-printed, standardized medication orders
- Increase in medication error reporting and investigation
- Enhanced medication reconciliation process

PY7 – Engage Medical Staff

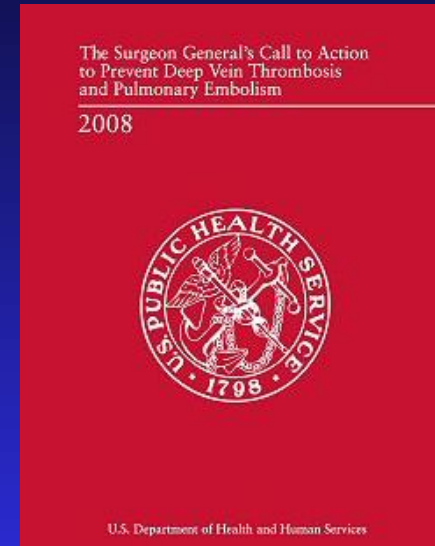
- Shift focus to clinical areas of opportunity while maintaining infrastructure gains
- Integrate presentation into existing medical staff meetings
- CAH to choose focus area for presentation
- Multiple potential focus areas:
 - ◆ Venous thromboembolism (VTE) prophylaxis
 - ◆ Inpatient diabetes management
 - ◆ Pain management
 - ◆ Antibiotic selection and duration
 - ◆ Evaluation of nephrotoxic medications

Barriers to acceptance

- Outsider (advantage and disadvantage)
- Knowledge
- Incentive
- Competing priorities
- Auditing and individualized feedback

VTE Prophylaxis

- Surgeon General “Call to Action”
Issued September 2008
Public Health Priority
- Every hospital develop a formal strategy that addresses prevention of VTE
 - ◆ Passive methods such as educational materials and meetings are NOT recommended as sole strategies
 - ◆ Locally developed strategy
 - ◆ Written, institution-wide policy
 - ◆ CPOE, pre-printed orders
 - ◆ Periodic audit and feedback



Antithrombotic and Thrombolytic Therapy: American College of Chest Physicians Evidenced-Based Practice Guidelines (8th Edition). Chest June 2008

VTE Prophylaxis Initiative – Ideas for Evaluation and Follow-up

- Percent admissions with VTE risk screening
- Percent admissions with VTE risk re-screening
- Percent admissions with risk-appropriate prophylaxis selection
- Percent discharges on appropriate prophylaxis (agent and duration)

Inpatient Diabetes Management

George E. Weems Memorial Hospital
PHYSICIAN'S ORDERS – SLIDING SCALE INSULIN ORDERS

Sliding Scale Insulin Orders: (orders with a must be checked to activate)

- Blood glucose monitoring (choose one of the following):**
 Before Meals Before Meals and Hour of Sleep every ____ hours
 If blood glucose 70 mg/dl or below, administer 4 oz of juice, recheck glucose every 30 minutes until greater than 70 mg/dl, and call MD if not rising for further instructions.
- Standard insulin regimens (select all that apply)**
 Basal insulin – choose one of the following
 LANTUS
 ____ units subcutaneously at am
 ____ units subcutaneously at pm
 HUMULIN N
 ____ units subcutaneously at am (only ½ of am dose if patient NPO in am)
 ____ units subcutaneously at pm
 Other: _____
 Prandial Insulin – choose one of the following
 NOVOLOG (HOLD IF PATIENT IS NPO)
 ____ units subcutaneously within 15 minutes of each breakfast meal
 ____ units subcutaneously within 15 minutes of each lunch meal
 ____ units subcutaneously within 15 minutes of each dinner meal
 HUMULIN R (HOLD IF PATIENT IS NPO)
 ____ units subcutaneously within 30 minutes of each breakfast meal
 ____ units subcutaneously within 30 minutes of each lunch meal
 ____ units subcutaneously within 30 minutes of each dinner meal
- Sliding Scale Insulin coverage – choose one of the following** (Optional, but if given, should be given before meals IN ADDITION to Prandial Insulin and should be the SAME INSULIN as PRANDIAL insulin)
- Physician will be notified on daily rounds if BS > 250 x 3 episodes in 24 hours.**

Insulin Coverage:			
	<input type="checkbox"/> HUMULIN R (Regular)	<input type="checkbox"/> HumaLOG	
Scale (mg/dL)	<input type="checkbox"/> Low Dose	<input type="checkbox"/> Moderate Dose	<input type="checkbox"/> High Dose
Less than 70	Give 4 ounces of juice	Give 4 ounces of juice	Give 4 ounces of juice
70 – 150	0 units	0 units	0 units
151 – 180	1 units	2 units	4 units
181 – 200	2 units	4 units	8 units
201 – 250	3 units	6 units	10 units
251 – 300	4 units	8 units	12 units
301 – 350	5 units	10 units	14 units
351 – 400	6 units	12 units	16 units
Greater than 400	Notify Physician	Notify Physician	Notify Physician

<input type="checkbox"/> Patient Specific	
Scale (mg/dL)	Dose
	____ units
	____ units
	____ units
	____ units
	____ units
	____ units
	____ units

MD Signature: _____

Date: _____ Time: _____

PATIENT LABEL

Data Ascertainment

- Generated list of patients who were charged for capillary glucose monitoring
- Consecutive list of 30 patients in fall 2007 and another 30 patients in fall 2008 after implementation of standardized insulin order set

Results

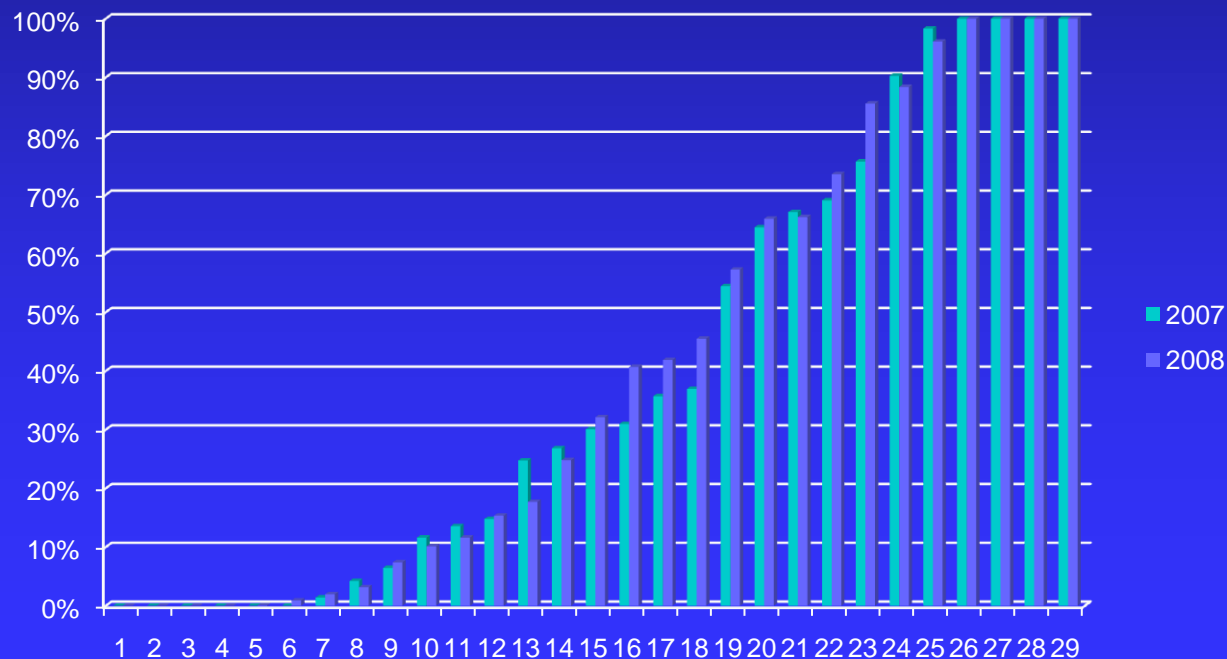
Total number of Glucose Readings	394
Hyperglycemic Event ≥ 150 mg/dL	63
Hyperglycemic Event ≥ 200 mg/dL	39
Severe Hyperglycemia (\geq one glucose reading ≥ 400 mg/dL)*	4
Prolonged Hyperglycemia (at least three consecutive glucose readings ≥ 250 mg/dL)*	8
Total Number of Blood Glucose Readings ≥ 150 (%)	191 (48.5%)
Total Number of Blood Glucose Readings ≥ 200	114 (28.9%)
Average Time in Hyperglycemia (≥ 150) during the time of glucose readings per patient	50.80%
Average Time in Hyperglycemia (≥ 200) during the time of glucose readings per patient	25.96%

Re-Evaluation after Implementation of Order Set

○ Percent time in BG < 150 mg/dL

⌘ 2007: 39.9%

⌘ 2008: 40.9%



Diabetes Management: Next Steps

- Individualized feedback
- Investigate root causes of hyperglycemia
 - ◆ Protocol inadequate
 - ◆ Physician compliance
 - ◆ Nurse compliance
 - ◆ Patient compliance

The Future – Project Year 8

- Continue annual site visit and summit
- Continue supporting ongoing clinical projects with data retrieval and analysis
- Incorporate chart review into site visits to better determine list of new medication-related quality improvement projects