Case Study from Parallon

Improving Compliance with the Smart Pump drug library across a large hospital system – Part I

Monday, June 26, 2017
AAMI Foundation

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Improving Compliance with the Smart Pump drug library across a large hospital system – Part I

Lori Marsh, DPh
Tristar Division Director of Medication Safety
Introduction

• HCA TriStar Division Director of Medication Safety

• Why did I lead this project?
  – Responsible for all medication safety and quality activities at all HCA facilities within the Tristar Division
  – Works with multidisciplinary groups at the corporate, division, and facility level to ensure key quality initiatives are in alignment with organizational priorities.
  – Primary position to be able to gain leader support
    • Monthly meetings
    • Face-to-face conversations
  – Ability to serve as a liaison between facilities, division leadership and the vendor
  – Had the support and influence of the Division Director of Pharmacy, Division VP of Quality, Division CFO and the Division Chief Medical Officer
HCA TriStar Division Facilities

Supply Chain Solutions

TriStar Centennial
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PARKRIDGE HEALTH SYSTEM

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Project Outline

• **Clinical Safety Improvement Program**
  
  – As part of HCA’s Patient Safety Organization
  – Offers hospitals an opportunity to develop and implement specific patient safety initiatives focused on issues identified by the evaluation of close calls and adverse drug events

• **Primary focus:** appropriate use of Smart Pump technology
Project Objectives

- **Designate an IV Pump Safety Team at each facility**
  - Identify team members specifically
- **Review of the top 5 alerted drugs related to overrides**
  - Documentation of reduction of those overrides for the identified meds
  - Action Plans for each
- **Documentation of verification** of use of safety software through reports
- **Achieve 90% compliance** with the utilization of the medication library safety settings

- **Initial deadline dates were established**
  - April 15, 2015 – October 15, 2015

- **Attestations required to enable accountability**
So what happens next?

- The discussion around the objectives was actually very basic, however:
- Other notables identified during the process:

- **Know your data!**
  - Understand what it means
  - Have realistic expectations

- **Identify your key indicators**
  - Safety Software compliance % monthly
    - Total override alerts
    - High risk overrides
    - Use of patient identifier
      - Good catches

- **Utilization of pivot data is key to focusing on outliers**
Override Trending
What did we do?

• We embarked on a journey to improve compliance with smart pump safety software

• Tristar has 13 primary facilities that participated in this project

• Consulted with the vendor clinical analyst
  – Recommendations based on past experience
  – Tried and true
  – Take advantages of services that you pay for!

• Made a plan
  – Timespan 9 months approximately
  – Ongoing PI and data review
  – Rome wasn’t built in a day!
Why?

• Reduce the incidence of adverse events attributed to medication infusions
  – Reduce medication errors associated with miscalculations
• Reduce patient harm
  – Programmed safety software should alert the nurse if pump programming has been done incorrectly.
• PREVENTABLE medication errors
  – Soft and hard stops
• Utilization of technology takes the “stress” off of providers and caregivers
  – Provides medication dosing guidelines
  – Concentrations, dose limits, clinical advisories
So how long did it really take?

- Our official timeline
  - April 2015 through October 2015 to accomplish the primary 3 goals
  - Discussions and awareness began in 2014
How did we accomplish our goal?

• Engagement of senior leadership at the division level
  – Monthly meetings with division quality directors group
  – Meetings with division CNO group
    • Asked for any and all “good catches” so they could share with their staff

  – Mag Sulfate OB drip programmed as 20 grams/hr
    • Reprogrammed to 2 grams/hr
  – Propofol drip programmed as 705 mcg/kg/min
    • Reprogrammed to 7.5 mcg/kg/min
  – Norepinephine drip programmed as 112 mcg/min
    • Reprogrammed to 7.5 mcg/kg/min
  – Precedex decimal point errors caught
    • 0.08 mcg/kg/hr v. 0.8 mcg/kg/hr
    • 4 mcg/kg/hr v. 0.4 mcg/kg/hr
Team Players
Action Plan Steps to achieve compliance

• Provided a method for front line nurses to report glitches or library change requests back to Pharmacy
  – 5 X 8 cards
  – Return follow up with that nurse is necessary for communication

• Drug library review at each facility
  – Develop a process for data set management
    • Drug library additions, deletions, modifications; configurations, approval process
    • Pharmacy and Therapeutics Committee
    • Medical Executive Committee
    • Communicate that process to staff
    • Provide feedback!
    • Educate on changes
    • Monitor for compliance

  – **Tristar is now standardizing their pump library division-wide**
Action Plan cont.

- **Summer Workshops**
  - Two consecutive summers
  - Extremely beneficial
  - Two locations for ease of travel
  - Nursing, Quality and Pharmacy
  - Vendor consultant present and available for guidance
    - She’s a nurse!
  - Participants brought their laptops so they could look at their own facility data
  - Sharing of ideas and voicing challenges for peer support
  - Open discussion: Q&A
  - Feed them well!
More HOW

• Take advantages of the services you’ve paid for!
  – Our vendor consultant visited each facility yearly
  – Assisted the facility in a data drill down – Nursing Admin present
  – Conference calls with any or all facilities to provide Q&A

• Review top library overrides per month and create action plans for each
  – This is perpetual.

• Show “real” harm averted (with Good Catch data)
  – Events hitting home are impactful

• Require shift handoff between nurses
  – The oncoming shift nurse should not accept the pump meds in report unless they’re programmed in the safety software
Continued…..

- **Education**
  - Clinical skills fair “booth”
  - Be creative: Bingo, word search, match the picture to the function, etc.
    - Create a “mascot”
    - Provide tip sheets for nurses
      - Switching an infusion from non-safety to safety software
  - Mandate inclusion in nursing orientation for newly hired staff

**ICU’s Nurses earned halo’s for being the patients Guardian Angels**
• Compliance rounding on each unit by nursing leaders
  – Perfect time for education!
• Random compliance rounding by pharmacists, Quality and CNO
• Data was shared on a weekly call with all Pharmacy Directors and Clinical Coordinators
• Each facility DOP prepared a few slides and short presentation to present to their peers at a bi-annual meeting
• Monthly dashboard sharing to division leadership
  – CFO, CEO, DCMO, DVPQ

• Require Process Improvement activity for committee reporting
  – Assists in accountability
  – Involves front line nursing staff
  – Fosters nursing ownership when they develop a plan
Challenges

• Change is constant and it’s always a challenge.

• Multidisciplinary Engagement
  – Competing priorities

• Misconception that this was a “Pharmacy project”

• Nursing perception
  – it takes too much time.
  – “I’ve always done it that way and I’ve never had a problem.”

• Nursing perception of liter fluids
  – Most nurses did not consider plan liter bags (NS, D5W) as medications
Challenges

• Budgeting new equipment
  – EtCO2, SPO2, epidural/PCA modules – plan ahead!

• Strongly urge to consider a patient identifier from the beginning of the project.
  – Necessary to track infusions that aren’t run through the safety software
  – May require budget considerations

• Critical care profiles are used in: ICU’s, ED, Surgery, PACU
  – Difficulty in tracking non-compliance

• Limit concentrations for safety’s sake
Must Do’s and Take-Aways

• 73% software compliance to >90% in approximately one year
  – Tell your story
  – Offer to mentor your peers

• Socialize the data!
  – Good catches/harm averted in their own “house”
  – True stories hit home – A-Ha! Moments

• Develop a policy

• Bring people together
Continued…..

• Ensure PC’s are on line and uploading data – track them down and dust them off!
  – BioMed should assist in locating and updating pumps
  – Wireless connectivity

• Require competencies at a skills fair or similar

• Require a specific slot at nursing orientation
  – Include bag bolusing

• Create your dashboard and share it with the key players
  – Provides a little “competition” too
Pay It Forward

• Continual data monitoring and support for process change is imperative to maximize the safety benefits of a smart pump system.
Future/Ongoing Initiatives
Mark Your Calendars!

July 10; 12pm to 1pm EST

Case Study from Parallon* – Improving Compliance with the Smart Pump Drug Library Across a Large Hospital System (Part 2).

*Parallon Business Solutions is a subsidiary of HCA Healthcare and works side-by-side, or in parallel, with the HCA healthcare providers to enhance their performance.

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Register:  https://attendee.gotowebinar.com/register/4764884653225425923
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