



Providing Continuing Education  
For Healthcare Professionals



**QUORUM HEALTH**

# 2017 Pharmacy Education Series

**November 30, 2017**

**Pharmacy Pearls**

***Speakers:***

Danielle Rahman, PharmD

Janet M. Reese, RPh

Erin Shaughnessy, PharmD, BCPS, EMBA

Nancy M. Smith, RPh, MBA

## Today's Presenters

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### **Danielle Rahman, PharmD**

Danielle Rahman, PharmD, is a graduate of St. Louis College of Pharmacy. She began practicing pharmacy right across the river from St. Louis at Gateway Regional Medical Center (GRMC) in Granite City, IL eleven years ago. Gateway Regional cares for a variety of patients, while specializing in behavioral health. Danielle and her remote order entry team enjoy working with nine Quorum facilities overnight and on the weekends. Danielle is a preceptor for the two local colleges of pharmacy in St. Louis, MO and Edwardsville, IL. Danielle was recognized in 2009 as GRMC employee of the year, and as clinical manager of the year in 2015.

### **Janet M. Reese, RPh**

Janet Reese is the Director of Pharmacy at Alta Vista Regional Hospital in Las Vegas, New Mexico. She graduated with a Bachelors of Pharmacy in 1999 from the University of New Mexico and is currently completing a Non Traditional Doctorate of Pharmacy through the University of Colorado. She is well versed in both inpatient and outpatient settings including oncology experience. Janet enjoys creating teams that are focused on patient care. Janet is active in the New Mexico Society of Health System Pharmacists and is currently the Chair for the Legislative committee for NMSHP.

### **Erin Shaughnessy, PharmD, BCPS, EMBA**


Dr. Erin Shaughnessy received her Bachelor of Science degree in Biology with emphasis in Microbiology from Northern Illinois University and her Doctor of Pharmacy degree from the University of Illinois at Chicago School of Pharmacy. Erin has earned additional certification as a Board Certified Pharmacotherapy Specialist and has recently completed her Executive Master's in Business Administration with a certificate in Ethical Leadership. Dr. Shaughnessy's professional interests include infectious diseases, pediatrics, hospital administration and academia. Furthermore, Erin serves as Faculty Clinical Professor for Chicago State School of Pharmacy. Erin has earned several distinguished awards and certifications including the above and beyond award in 2009 and manager of the year 2016. Erin has implemented numerous clinical programs at MetroSouth Medical Center that have positively impacted patient outcomes and at the same time fostered positive collaborative pharmacist-physician relationships.

### **Nancy M. Smith, RPh, MBA**



Nancy has spent the last 32 years wondering why she went into a career of pharmacy, being that her natural strengths are writing, athletics, music, psychology and art. It's taken most of her adult life to understand that our careers are not something that defines us; instead we define our careers. Having finally determined this, Nancy has gifted herself with the freedom to bring her gifts of empathy, vision, creativity and compassion into a career which at the onset appeared to be sterile and much more science-focused than people-centered.

Becoming a director, again, is not a career choice that Nancy intentionally set out to achieve, but after moving to the mountains of Georgia from Winston-Salem, N.C., she realized that mentoring, directing and leading a pharmacy department represented another personal and professional growth rite of passage. She appreciated that solving problems and coaching others to reach their potential is extremely satisfying and rewarding.

Innovation is an inherent quality of a creative personality so, although Nancy has privately solved many issues over the life of her career for her own hospital, it is only within the last few years that it's occurred to her other facilities might benefit from her solutions. Through the development of her pediatric, color-coded medication dosing labels, Nancy has forged an enduring friendship with Dr. Broselow, who is as kind as he is pioneering. Nancy's aspiration is that every pediatric emergency responder, whether in the field or within a healthcare facility, will have the benefit of using the dosing label system to reduce medication error rates to as close to zero as possible.



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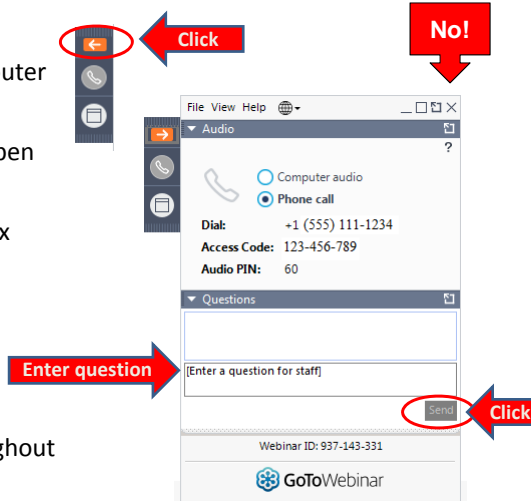
Code will be provided at the end of today’s activity

2



## How to Ask a Question

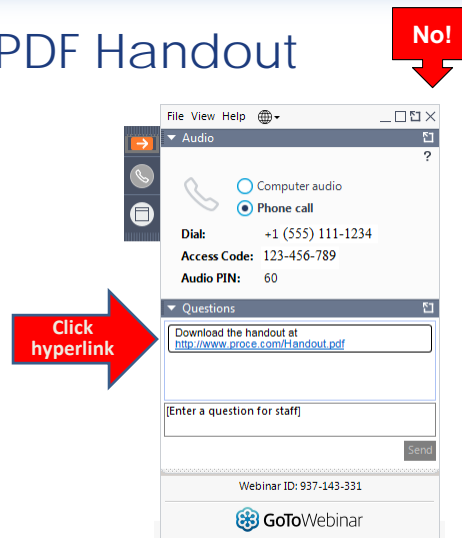
- Locate menu bar on your computer desktop
- Click orange arrow button to open menu box
- Type question into question box
- Click Send
- Do not close menu box
  - This will disconnect you from the Webcast
- Please submit questions throughout presentation



3

## Accessing PDF Handout

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- Do not close menu box
  - This will disconnect you from the Webcast



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# Update on Current Pharmacy Initiatives and Strategies

B. Keith Yarde, R.Ph., M.S  
Pharmacy Operations Director  
QUORUM Health

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**Please note:** The opinions expressed in this activity should not be construed as those of the CME/CE provider. The information and views are those of the faculty through clinical practice and knowledge of the professional literature. Portions of this activity may include unlabeled indications. Use of drugs and devices outside of labeling should be considered experimental and participants are advised to consult prescribing information and professional literature. <sup>6</sup>



## CE Activity Information & Accreditation



ProCE, Inc. (Pharmacist)  
– 1.5 contact hours

### *Funding:*

This activity is self-funded through Quorum Health.

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## Will the New Joint Commission Pain Management Standards Be a PAIN?

Danielle Rahman, PharmD  
Director of Pharmacy  
Gateway Regional Medical Center



QUORUM HEALTH

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## Objective

- To be able to describe the new Joint Commission pain assessment and management standards for hospitals
- To be able to find the internal and external resources available to assist with meeting those standards (identified with ★)

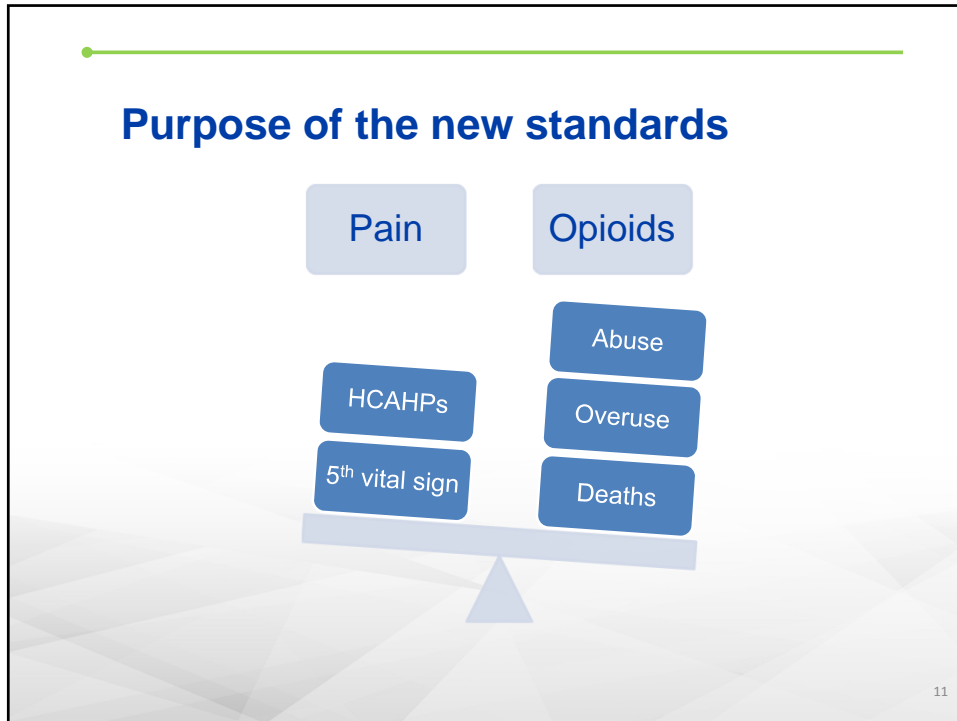
9

## Outline

- Joint Commission pain assessment and management standards for hospitals
- HCAHPs Questions Changes

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### Background on the Standards

**WHY?**

- As part of a national effort to address with opioid crisis and related patient safety issues.

**HOW?**

- Starting in 2016, the Joint Commission began researching utilizing literature, experts in pain assessment and management, learning visits at hospitals, and representatives at organizations to test the new standards.

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## Pain assessment and management standards for hospitals

- Effective Jan 1, 2018
- Reside in following chapters of the hospital accreditation manual
  - Leadership (LD)
  - Medical Staff (MS)
  - Provision of Care (PC)
  - Performance Improvement (PI)

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**LD.04.03.13: Pain assessment and pain management, including safe opioid prescribing, is identified as an organizational priority for the hospital**

## LEADERSHIP



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## Leadership LD.04.03.13

- **EP 1: The hospital has a leader or leadership team that is responsible for pain management and safe opioid prescribing and develops and monitors performance improvement activities.**
  - Relates to standard PI.02.01.01, EP 19

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## Quorum Opioid Prescribing Guidelines Policy ★

**SCOPE:** Applies to all prescribing Practitioners.

**PURPOSE:** In an effort to address the growing number of people suffering from substance use disorders related to prescription opioid & CNS depressant medications, as well as deter the potential abuse of narcotic and anxiety prescriptions, this hospital has adopted the following policy regarding certain CNS depressant medication prescriptions. These medications include hydrocodone, oxycodone, meperidine, morphine, methadone, hydromorphone, alprazolam, carisoprodol, lorazepam and diazepam, as well as other habit forming drugs.

Note: Cancer patients or patients receiving end-of-life care are exceptions to this policy.

**POLICY:** All patients will be treated equally as related to the guidance in this policy; however, for the purpose of ensuring the most vulnerable patients to potential opioid and other CNS depressant addiction are managed effectively, the provider should be aware of the following risk factors for misuse and abuse of these medications:

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## Leadership LD.04.03.13

- **EP 2: The hospital provides nonpharmacologic pain treatment modalities**
  - The hospital should promote nonpharmacologic modalities when discussing patient preferences for pain treatment
  - When a patient's preference for safe nonpharmacologic therapy cannot be provided, the hospital should educate on where the treatment can be obtained post-discharge
  - Examples include: physical modalities (acupuncture, chiropractic therapy, osteopathic manipulative treatment, massage therapy and physical therapy), relaxation techniques, and cognitive behavioral therapy

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## Nonpharmacologic Treatment Modalities

- |                                     |                      |
|-------------------------------------|----------------------|
| ▪ Imagery                           | ▪ Acupuncture        |
| ▪ Distraction                       | ▪ Massage            |
| ▪ Sensory stimulation (TENS/E-stim) | ▪ Hypnotherapy       |
| ▪ Repositioning                     | ▪ Biofeedback        |
| ▪ Exercise                          | ▪ Aromatherapy       |
| ▪ Meditation                        | ▪ Music Therapy      |
| ▪ Physical Therapy                  | ▪ Healing Touch      |
| ▪ Stretching                        | ▪ Hot/Cold packs     |
| ▪ Splinting                         | ▪ Moist Heat (K-pad) |
| ▪ Manual Therapy                    | ▪ Pet Therapy        |
| ▪ Progressive Muscle Relaxation     | ▪ Deep Breathing     |
|                                     | ▪ Sitz baths         |

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## Nonpharmacologic Treatment Modalities

- Imagery
- Distraction
- Sensory stimulation (TENS/E-stim)
- Repositioning
- Exercise
- Meditation
- Physical Therapy
- Stretching
- Splinting
- Manual Therapy
- Progressive Muscle Relaxation
- Acupuncture
- Massage
- Hypnotherapy
- Biofeedback
- Aromatherapy
- Music Therapy
- Healing Touch
- Hot/Cold packs
- Moist Heat (K-pad)
- Pet Therapy
- Deep Breathing
- Sitz baths

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## Health Record Pain Interventions ★

A screenshot of a software interface titled "Choose From List". It displays a list of options, each with a small square checkbox to its left. The options are: Other-See Comment, None, Ambulation, Notified Physician, Position Change, Relaxation Techniques, Cold, Elevation, Heat, Massage, and Medication Administered. A letter "C" is visible in a small box to the left of the "Heat" option.

Used often but not included:

- **Imagery**
- **Distraction**
- **Meditation**
- **Aromatherapy**
- **Music therapy**
- **Deep breathing**
- **E-stim**
- **Stretching**

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## Leadership LD.04.03.13

- **EP 3: The hospital provides staff and licensed independent practitioners with education resources and programs to improve pain assessment, pain management, and the safe use of opioid medications based on the identified needs of its patient population.**
  - Having educational resources readily available is preferable to staff and providers only attending lectures

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## Resources on the QLC Learning Center ★

What's New



Nursing Reference Center by EBSCO

Catalog

pain management

- **Over 2,000 quick lessons for 'pain'**
  - Pain assessment scales
  - Management per type of pain
- **Music therapy, Biofeedback**
- **Opioid abuse**
- **58 options for pain management**
- **Post-operative respiratory depression**
- **Guided imagery**

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1. [Communicating with Drug Seeking patients in the ED](#)
2. [Implementing a Pain Plan Toolkit](#)

## STUDER GROUP LEARNING LAB RESOURCES ★



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### Leadership LD.04.03.13

- **EP 4: The hospital provides information to staff and licensed independent practitioners on available services for consultation and referral of patients with complex pain management needs.**
  - Examples of these types of patients include: opioid-addicted patient undergoing major surgery, patient at high risk for adverse events (i.e. sleep apnea) that require opioid treatment, or a patient whose pain management needs exceed the abilities of the patient's provider.
  - Recommend access to a pain specialist either by referral or consult

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## Leadership LD.04.03.13

- **EP 5: The hospital identifies opioid treatment programs that can be used for patient referrals**
  - It is too difficult for clinicians to keep up with specific options in the community.
  - The leadership team should identify community resources for the clinicians
  - Can use the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) directory of opioid treatment programs ★

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## Leadership LD.04.03.13

- **EP 6: The hospital facilitates practitioner and pharmacist access to the Prescription Drug Monitoring Program (PDMP) databases.**
  - Example: Creating a link on the home page of the hospitals health record and/or intranet site
  - It is not mandatory to use a PDMP prior to prescribing an opioid UNLESS state law mandates that this occurs (e.g. Massachusetts)

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## Leadership LD.04.03.13

- **EP 7: Hospital leadership works with its clinical staff to identify and acquire the equipment needed to monitor patients who are at high risk for adverse outcomes from opioid treatment.**
  - There are no controlled trials to determine the most appropriate strategy to monitor patients for the most dangerous adverse effect from opioids, respiratory depression
  - The leadership team should work with clinical leaders to ensure monitoring equipment is available
  - Examples of “high risk” include: patients with sleep apnea, those in continuous IV opioids, and those on supplemental oxygen

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**MD. 05.01.01 The organized medical staff has a leadership role in the organization performance improvement activities to improve quality of care, treatment, and services and patient safety.**

## MEDICAL STAFF



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## Medical Staff MD. 05.01.01

- **EP 18: The medical staff is actively involved in pain assessment, pain management, and safe opioid prescribing through the following:**
  - Participating in the establishment of protocols and quality metrics
  - Reviewing performance improvement data

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**PC.01.02.07 The hospital assesses and manages the patient's pain and minimizes the risks associated with treatment.**

## PROVISION OF CARE, TREATMENT, AND SERVICES



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## Provision of Care, Treatment, and Services PC.01.02.07

- **EP 1: The hospital has defined criteria to screen, assess, and reassess pain that are consistent with the patient's age, condition, and ability to understand.**
  - Hospital must ensure those tools are available and utilized
  - Examples: ICU sedated patient or pediatrics

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## Provision of Care, Treatment, and Services PC.01.02.07

- **EP 2: The hospital screens patients for pain during emergency department visits and at the time of admission.**
  - To identify pain issues earlier in the stay when pain is not the reason for their visit
- **EP 3: The hospital treats the patient's pain or refers the patient for treatment. (pharmacologic, nonpharmacologic or a combination)**
  - Ties in with the Leadership standard LD.04.03.13

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## Provision of Care, Treatment, and Services PC.01.02.07

- **EP 4: The hospital develops a pain treatment plan based on evidence-based practices and the patient's clinical condition, past medical history, and pain management goals**
  - Relates to Standard RI.01.1.01, EP8.
  - Patient's have a right to pain management

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## Provision of Care, Treatment, and Services PC.01.02.07

- **EP 5: The hospital involves patients in the pain management treatment planning process through the following:**
  - Developing realistic expectations and measurable goals that are understood by the patient for the degree, duration, and reduction of pain
  - Discussing the objectives used to evaluate treatment progress (relief of pain and improved physical and psychosocial function)
  - Providing education on pain management, treatment options, and safe use of opioid and nonopioid medications when prescribed

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## PC standards accomplished by:

- Policy to address (frequency, depth of assessment, tools to be used)
- Studor Group framework ★
  - Patient communication boards
  - Bedside shift report
  - Hourly rounding
  - Leader rounding with a focus on pain
  - Discharge plan with a focus on pain

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## Provision of Care, Treatment, and Services PC.01.02.07

- EP 6: The hospital monitors patients identified as being high risk for adverse outcomes related to opioid treatment
  - Related to LD.04.03.13, EP 7

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## Provision of Care, Treatment, and Services PC.01.02.07

- **EP 7: The hospital reassess and responds to the patient's pain through the following:**
  - Evaluation and documentation of response to pain intervention(s)
  - Progress toward pain management goals including functional ability (to take a deep breath, turn in bed, walk with improved pain control)
  - Side effects of treatment
  - Risk factors for adverse events caused by the treatment

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## Provision of Care, Treatment, and Services PC.01.02.07

- **EP 7 continued:**
  - Reassess in a “timely manner”
    - *Corporate standard is within 1 hour of medication administration*
  - Using numerical scales alone is inadequate
  - Importance is on “how pain affects function and progress toward goals”
  - Will your current assess/reassess template work?

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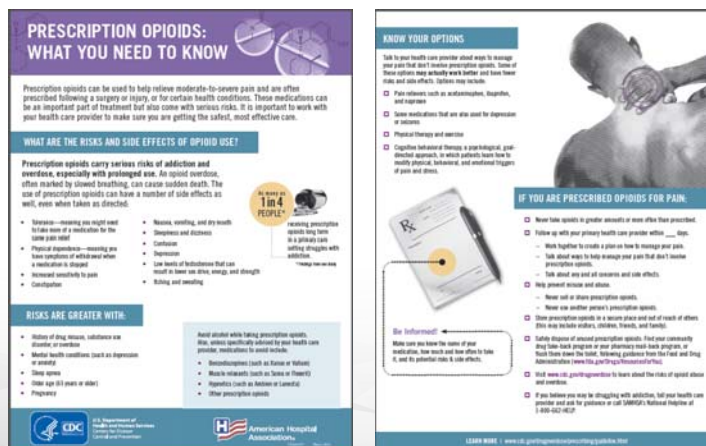


## Provision of Care, Treatment, and Services PC.01.02.07

- **EP 8: The hospital educates the patient and family on discharge plans related to pain management including the following:**
  - Pain management plan of care
  - Side effects of pain management treatment
  - Activities of daily living, including the home environment, that might exacerbate pain or reduce effectiveness of the pain management plan of care, as well as strategies to address these issues
  - Safe use, storage, and disposal of opioids when prescribed

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## AHA Patient Education document



**PRESCRIPTION OPIOIDS: WHAT YOU NEED TO KNOW**

Prescription opioids can be used to help relieve moderate-to-severe pain and are often prescribed following a surgery or injury or for certain health conditions. These medications can be an important part of treatment but also come with serious risks. It is important to work with your health care provider to make sure you are getting the safest, most effective care.

**WHAT ARE THE RISKS AND SIDE EFFECTS OF OPIOID USE?**

Prescription opioids carry serious risks of addiction and overdose, especially with prolonged use. An opioid overdose, often marked by slowed breathing, can cause sudden death. The use of prescription opioids can have a number of side effects as well, even when taken as directed.

- Addiction—meaning you might need to take more of a medication for the same pain relief
- Physical dependence—meaning you have withdrawal if you stop when you're not supposed to
- Increased sensitivity to pain
- Nausea, vomiting, and dry mouth
- Sleepiness and dizziness
- Constipation
- Depression
- Low levels of testosterone that can result in less sex drive, energy and strength
- Itching and sweating

**RISKS ARE GREATER WITH:**

- History of drug misuse, substance use disorder, or alcoholism
- Mental health conditions such as depression or anxiety
- Drug abuse
- Being age 65 years or older
- Pregnancy

**Be informed!** Many people taking prescription opioids long term are a physical risk when taking opioids with alcohol.

**Be informed!** Make sure you know the name of your medication, how much and how often to take it, and its potential risks & side effects.

**KNOW YOUR OPTIONS**

Talk to your health care provider about ways to manage your pain that don't involve prescription opioids. Some of these options may actually work better and have fewer risks and side effects. Options may include:

- Pain relievers such as acetaminophen, ibuprofen, and aspirin
- Non-steroidal anti-inflammatory drugs (NSAIDs) such as naproxen or celecoxib
- Physical therapy and exercise
- Cognitive behavioral therapy, a psychological, patient-centered approach, in which patients learn how to modify physical, behavioral, and emotional triggers of pain and stress.

**IF YOU ARE PRESCRIBED OPIOIDS FOR PAIN:**

- Never take opioids in greater amounts or more often than prescribed.
- Follow up with your primary health care provider within \_\_\_\_ days.
  - Work together to create a plan on how to manage your pain.
  - Talk about ways to make managing your pain that don't involve prescription opioids.
  - Talk about end-of-life concerns and care effects.
- Keep general rescue and abuse:
  - Never sell or share prescription opioids.
  - Never use another person's prescription opioids.
- Store prescription opioids in a secure place and out of reach of others (this may include relatives, children, friends, and family).
- Take steps to prevent prescription opioids. Get your community drug take-back program or your pharmacy mail-back program, or both. There have been cases of people getting addicted from their first and drug Administration (www.fda.gov/Drugs/Informational/ucma.htm).
- Visit www.cdc.gov/painmanagement to learn about the risks of opioid abuse and overdose.
- If you believe you may be struggling with addiction, tell your health care provider and ask for assistance or call SAMHSA's National Helpline at 1-800-662-HELP.

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## Disposal bags



(Photo: Alton Shazer/The CJ)

In an effort to combat the state's opioid epidemic, Attorney General Andy Beshear announced a program Tuesday that will allow residents to dispose of prescription drugs at home.

The Kentucky Opioid Disposal Program will provide 50,000 "drug deactivation pouches" in Floyd, Henderson, McCracken and Perry counties, according to the press release.

The program has the potential to dispose of more than 2 million unused opioids, Beshear said in a press release.

### Medication pouches

- Medication is placed in a bag containing a carbon that bonds to pharmaceutical compounds when water is added
- The active ingredient is neutralized when water is added and the bag is shaken.
- Biodegradable bag can be placed in the trash.

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PI.01.01.01 The hospital collects data to monitor its performance

## PERFORMANCE IMPROVEMENT



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## Performance Improvement PI.01.01.01

- **EP 56: The hospital collects data on pain assessment and pain management including types of interventions and effectiveness**
  - Timing of reassessments
  - Types of interventions
  - Effectiveness of interventions
  - To identify areas that need changed to increase safety and quality for patients

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PI.02.01.01: The hospital compiles and analyzes data

## PERFORMANCE IMPROVEMENT



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## Performance Improvement PI.02.01.01

- **EP 18: The hospital analyzes data collected on pain assessment and pain management to identify areas that need change to increase safety and quality for patients**
  - Example: if monitor the use of naloxone, can identify areas and staff that require specific education on opioid use

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## Performance Improvement PI.02.01.01

- **EP 19: The hospital monitors the use of opioids to determine if they are being used safely (for example, the tracking of adverse events such as respiratory depression, naloxone use, and the duration and dose of opioid prescriptions)**
  - The Joint Commission hospitals that tracked the use of naloxone were able to reduce adverse events related to opioid use

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## Strategies for Performance Improvement

- Does anesthesia, ER, or OR already monitor adverse effects from anesthesia?
- Carve out a section of the Adverse Drug Reaction report specifically for opioids
- Number of doses of opioids per patient in ED
- Make sure to document actions as a result of findings

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## HCAHPs pain question changes as early as January 1, 2018

### Current

- Did you need medicine for pain?
- How often was your pain well controlled?
- Did the staff do everything they could to help you with your pain?

### PROPOSED

- Did you have any pain?
- Did staff talk with you about how much pain you had?
- Did staff talk with you about how to treat your pain?

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## Action Plan for Pharmacists

- Volunteer to be part of facility pain management team
- Educate pharmacy department on 2018 Joint Commission standards and HCAHP question changes
- Share expertise on safe and effective use of opioids (in-services, handouts, clinical interventions)
- Record and analyze data – at a minimum, naloxone use
- Patient education on safe use of opioids

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## Action Plan for Facility

- Form a pain management team
- Utilize nonpharmacological pain management techniques (may also require staff education)
- Formulate a list of possible pain management and opioid addiction specialty sites for staff and patient use
- Assess use of monitoring equipment when opioids are used
- Link PDMP to electronic health record
- Measure and analyze pain assessment & pain management effectiveness
- Review pain assessment build in health record

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**How does all of this fit together?**



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**The standards will require effort, but should decrease facility PAIN over time.**



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## References

- R3 Report | Requirement, Rational, Reference. A complimentary publication of The Joint Commission. Issue 11, August 29, 2017
- AHA prescription opioids: what you need to know patient handout  
<http://www.aha.org/content/16/opiodneedtoknow.pdf>
- Qssentials Studer Group presentation titled PAIN MANAGEMENT presented by Lavonne Dwinal, MOL, RN, Coach October 27 & 30, 2017

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## Hospital Pharmacy Emergency Preparedness

Janet Reese, RPh



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## Disclosures

- I have nothing to disclose



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## Objective

- At the conclusion of this presentation, participants will be able to discuss pharmacy preparedness in various disaster events most likely to occur in their facility location.



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## Emergency Preparedness

### History...

- Bombings
- Natural disasters
- Pandemics
- Mass shootings



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## Emergency Preparedness




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## Emergency Preparedness

- **External**
  - Infectious
  - Bioterrorism
  - Natural Disasters
  - Radiation/Chemical
- **Internal**
  - Damage to the infrastructure of your facility




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## Emergency Preparedness

- **Assess your facility's risk**
  - Not every facility is the same
  - There is no "cookie cutter" plan
  - Be aware of what is around your location
- **Environment of Care**
  - Emergency Operations Plan
  - Incident Command Center



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## Emergency Preparedness

### Prepare ahead of time

Think about what could go wrong...

Investigate..

Read...

Remember...

Small hospitals are not “exempt”



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## Emergency Preparedness

**The overall goal is to avoid a situation where access to medication can delay care!**



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## Emergency Preparedness

- **Internal**
  - Damage to your facility
    - Relocating Services within facility
    - Relocating Services outside your facility
    - Adjusting to limitations from infrastructure damage



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## Emergency Preparedness

- **External**
  - Patients are coming to your facility
    - Where are patients going to be placed?
    - How are you going to get medication to those areas?
    - Medication needs
      - Dependent on the disaster...
        - Count on needing fluids



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## Emergency Preparedness

### Adjust to the disaster....

- *Transitioning from an acute care to*
  - Surgical hospital
  - Burn hospital
  - Critical hospital



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## Emergency Preparedness

# Medications

- Fluids
- Rapid sequence intubation medications
- Sedation
- Pain
- Vasopressors
- Electrolytes
- Antibiotics
- ACLS



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## Emergency Preparedness

Remember.....

**The overall goal is to avoid a situation where access to medication can delay care!**



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## Medications

Access is needed to medications...

- *Open Pyxis*
- *Down time procedures*



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## Emergency Preparedness

*How are more supplies getting to you?*

- Who can help
  - Remember your incident command center
  - What are your close resources



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## Medications

### Cardinal Health Contact List & Emergency Call Procedure

Cardinal Health is here to support you in emergency situations 24 hours a day, 7 days a week, 365 days a year.

#### Life Critical Emergency

When you have a life critical emergency situation that requires you to receive a product before your next scheduled delivery, please follow the Emergency Call Procedure outlined below:

#### Emergency Call Procedure for the Fastest Response

1. During normal business hours (Mon-Fri 6 am to 5 pm PST), call the Customer Service number.
2. After normal business hours, call the Emergency number.
3. When calling the Emergency number, an answering service representative will take the message and a Cardinal Health employee will promptly return your call. Please have your servicing Distribution Center name, account name and number, a contact name, and a call back phone number readily available.
4. If steps 1 – 3 do not yield prompt results please contact your Cardinal Sales Consultant.



PHARMACEUTICAL DISTRIBUTION	
Customer Service	(800) 926 - 3161
Fax	(866) 511 - 5708
Emergency	(877) 722 - 0346
Website	<a href="http://orderexpress.cardinalhealth.com">orderexpress.cardinalhealth.com</a>
Tech Support	(800) 326 - 6457
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Fax	(888) 348 - 4916
Emergency	(866) 476 - 1340
Website	<a href="http://specialtyonline.cardinalhealth.com">specialtyonline.cardinalhealth.com</a>
Sales Consultant	



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## Medications

### Alternative Sources

- State and or federal resources may arrive
- Other hospitals
  - Paper DEA 222



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## Medications

### Drug Information

- Know your alternatives
  - You will run out of medications
  - Staff will be using medications they are not familiar with
- Be available to share your knowledge
  - *Drug information*
    - Drug information
    - Drug information



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## How to prepare pharmacy staff

### ■ Practice

- DOH drills
- Participate in disaster drills
- Discuss options with your staff
- Run through scenarios
  - **“pop quiz”**
    - Where is Cardinal account information?
    - Where are the keys to the Pyxis?



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## Conclusions

- Pharmacy will be involved in disasters
- Prepare ahead of time



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## A New Method to Combat Clostridium Difficile Infection

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QUORUM HEALTH

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### Pharmacy Background

- Pharmacy staffing at MetroSouth Medical Center
- Licensed for 301 beds
  - Avg. Census: 90-140
  - Average doses dispensed 10,000 to 12,000/day
  - 9.6 Pharmacists FTE
    - *Shifts: 6AM, AM Clinical, 1230, 3PM & 1 overnight Pharmacist*
    - *DOP and 1 manager also rotate through staffing*
- All staff are cross trained and competent for all shifts and all duties.
- Clinical Shift Duties
  - ICU rounds, Warfarin dosing, OVP, Follow-up Kinetic Dosing, TPNs, IV to PO, AMS (culture review, daily review of appropriateness, review of duration of therapy exceeding 7 days), and warfarin patient education

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## Clostridium difficile

- Clostridium difficile (C diff) is a gram-positive, anaerobic, spore-forming bacillus.<sup>2</sup>
  - C difficile is one of the most common hospital-acquired infections
  - Important numbers to remember from the CDC regarding C difficile<sup>3</sup>:
    - *500, 000 cases in a year*
    - *20% chance of at least one reoccurrence*
    - *In patients over 65, 1 in 11 will die within a month of a healthcare associated C difficile diagnosis*
    - *Seven to 10 times more likely to develop C difficile while on antibiotics and up to a month after treatment has been completed*

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## Current Preventing Techniques – Infection Control

- The hallmark of prevention is handwashing.
  - C difficile is spread through fecal to oral route
    - *Hands must be physically washed with soap and water*
  - Patients or caregivers who do not wash hands or equipment can spread C difficile to others
    - *Equipment must be wiped down with bleach (must be a spore-killing product)*
  - Isolating patients with C difficile and suspected C difficile (until it is ruled out) can help reduce incidence of transmission

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## Current Preventing Techniques – Antimicrobial Stewardship

- Antimicrobial Stewardship can help reduce C difficile infection through:
  - Appropriate usage of the right antibiotics
    - *Alternative antibiotics in patients with reoccurring infection that are high risk*
      - Often induce C Diff: Flouroquinolones, Clindamycin, Penicillins (broad Spectrum), Cephalosporins (broad spectrum).
      - Sometimes induce C Diff: Macrolides, Bactrim, Sulfonamides
      - Rarely induce C Diff: Aminoglycosides, Tetracyclines, Metronidazole, Vancomycin
  - *Ensure correct dose and duration of treatment*
  - *Recommend discontinuation of unneeded antibiotic therapy*
  - *What else can we do?*

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## What else can we do... Prevention through Prophylaxis?

- A study published in the IDSA journal, Clinical Infectious Diseases, examined use of Oral Vancomycin Prophylaxis (OVP) in patients who had previously tested positive for C. difficile.
- Efficacy of Oral Vancomycin in Preventing Recurrent *Clostridium difficile* Infection in Patients Treated With Systemic Antimicrobial Agents. Nicholas W. Van Hise, Alex M. Bryant, Erin K. Hennessey, Andrew J. Crannage, Jad A. Khoury, Farrin A. Manian. *Clinical Infectious Diseases*, Volume 63, Issue 5, 1 September 2016, Pages 651–653, <https://doi.org/10.1093/cid/ciw401>

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## Study Design

- The study was designed as a retrospective cohort study and was performed at Mercy Hospital St. Louis (over 4 years).
- In the study C diff rates for 203 patients with a history of C diff and current systemic antibiotic therapy were split into 3 treatment arms:
  1. 125mg oral vancomycin PO BID
  2. 250mg oral vancomycin PO BID
  3. Control group

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## Study Results

Mean Duration (days)	Mean Duration of OVP post ABX (days)	# of CDI in OVP Groups	# of CDI in Control Group
13.7 (3-29)	0.8 (0-6)	3	35

- Results:
  - The difference in CDIs between treatment and control groups was statistically significant.
    - ✦ (odds ratio, 0.12; 95% confidence interval, 0.04-0.4;  $P < 0.001$ )
  - There was no difference between the 125 mg dose and the 250 mg dose in terms of efficacy.

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## Application of OVP in a Community Hospital

- Based on that publication, 2 local hospitals and one local infectious disease group have implemented a screening tool to identify and provide prophylaxis to patients who are at risk for developing a C diff infection.
- With the assistance of those local hospitals and in collaboration with our infectious disease and infection control groups, our pharmacy has developed a protocol that identifies patients who are deemed HIGH RISK for developing or having a reoccurrence of C difficile infection.
- This protocol was presented to and approved by our Infectious Disease Specialists, the Pharmacy and Therapeutic Committee, the Medical Executive Committee, and the Board of Directors.

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## Oral Vancomycin Prophylaxis Protocol

Criteria	Points
History of c. diff <1 year	10
Currently on high risk antibiotics*	6
History of antibiotics <90 days (including prophylaxis antibiotics)	3
Recent hospitalization/LTCF/LOS > 7 days	2
Age ≥65	2
Severe Illness (ICU stay/weakened immune system)	2
Currently on PPI	1

\*clindamycin, fluoroquinolones, carbapenems, PCN (broad-spectrum), cephalosporins (broad-spectrum), macrolides, sulfamethoxazole-trimethoprim.

Daily - the clinical pharmacist screens/scores:

1. All new admissions
2. Patients with a length of stay ≥ 7

For risk of C Diff and inclusion into the OVP protocol.

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## Oral Vancomycin Prophylaxis Protocol

- **Patients with a score  $\geq 10$  and on high risk antibiotics are put on to the OVP protocol per the infectious disease specialist. The protocol includes:**
  - 125mg oral vancomycin twice daily for duration of antibiotics or until discharge (whichever occurs first).
  - Isolate if patient is symptomatic for C difficile infections (i.e. multiple loose watery stools)

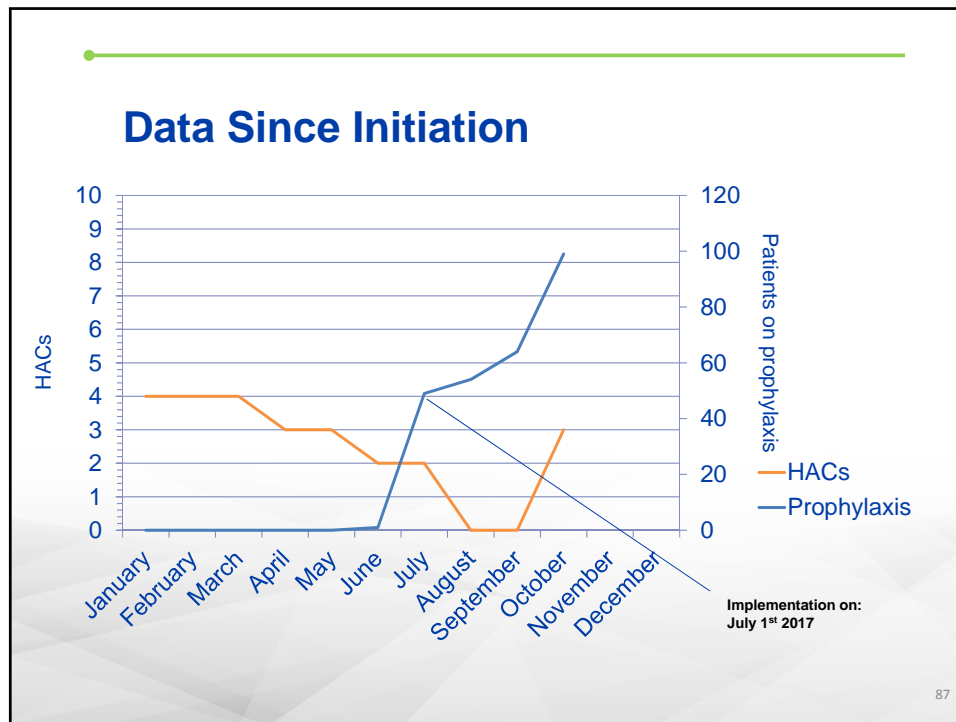
85

## Oral Vancomycin Prophylaxis Protocol

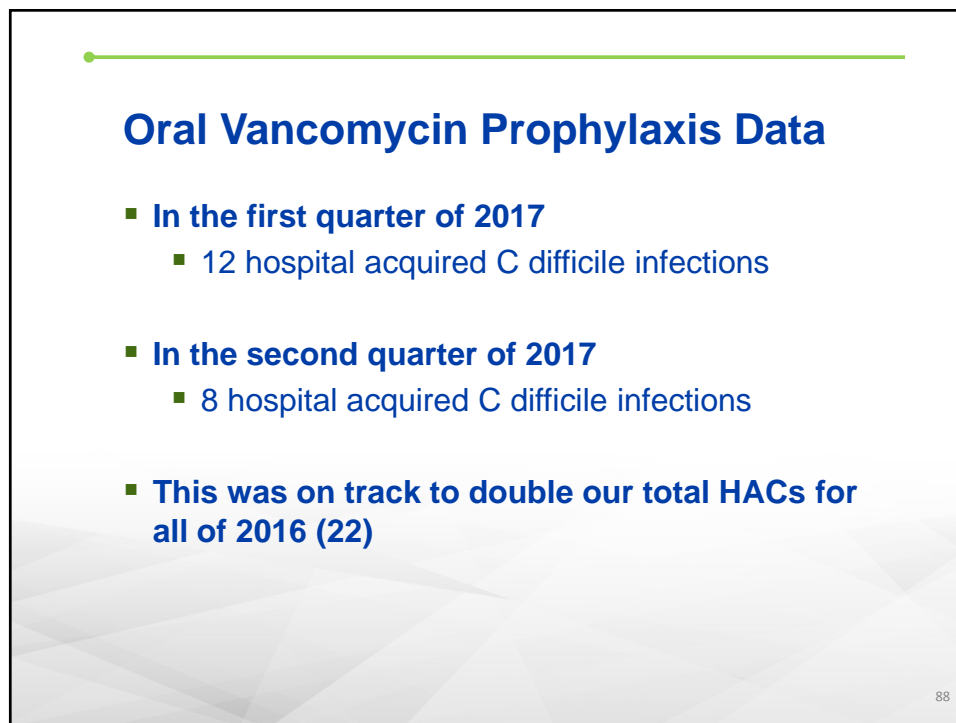
- **Patients are educated: on the risks of C diff infection, vancomycin uses and its side effects, and given an educational pamphlet for them and their caregivers/family members.**
  - The educational pamphlet explains:
    - What C difficile is
    - Why prophylaxis is being provided
    - Symptoms of C difficile infection
    - Risk factors for C difficile infection
    - Importance of handwashing

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## Oral Vancomycin Prophylaxis Data

- We initially saw a drop in the HACs after implementation
  - 2 months of ZERO HACs (August & September)
  - 3 recorded HACs in the month of October
    - *Increase in number of patients who were high risk*

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## Explanation of October HACs

- Patient 1
  - Did not screen into our OVP protocol
  - Did have risk factors:
    - *Hospitalization <90 days (2 points)*
    - *>65 years of age (2 points)*
    - *PPI (1 point)*
    - *7 days length of stay (2 points)*
  - Patient became symptomatic on day 7

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## Explanation of October HACs

- **Patient 2**
  - Did not screen into our OVP protocol however was reported to have “multiple loose water stools” requiring a rectal tube <24 hours into admission
  - C difficile positive on day 4 (was not sent initially)

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## Explanation of October HACs

- **Patient 3**
  - Screened into our OVP protocol
  - Risk factors:
    - **>65 years of age**
    - **>7 days length of stay**
    - **LTCH**
    - **Multiple high-risk antibiotics:**
      - Cefepime (one time dose)
      - Levofloxacin (6 days)
      - Meropenem (4 days)
  - Developed C difficile on day 11

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## Is this Anti-Antimicrobial Stewardship?

- **Could this increase cases of VRE?**
  - Oral vancomycin is not systemically absorbed, so theoretically this should not occur
  - Monitoring microbiology to see if we see any rise in VRE cultures. We have not seen any increases to date.
- **Could this cause vancomycin resistance amongst C difficile strains?**
  - This is a possibility, but there is no literature documenting this incidence.

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## Going forward...

- **We are currently collecting data to compare the 1<sup>st</sup> two quarters of 2017 with the last two quarters.**
  - With this data we can make adjustments to the protocol that address:
    - ***HACs that did not screen in and why?***
      - Ensure we are identifying the correct patients
    - ***What is the optimal duration for prophylaxis?***
      - Length of antibiotics vs. continuing post antibiotics for a specified duration

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## Take Away

- While this may not be the answer to preventing C difficile infections, this may be a valid option in addition to:
  - Frequent and thorough handwashing
  - Antimicrobial Stewardship Program
    - ***Right Antibiotics at the right dose and for the right duration***
  - Identifying symptoms of C difficile infection promptly so they can be isolated and treated appropriately

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3. "Healthcare-Associated Infections." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 1 Mar. 2016, [www.cdc.gov/hai/organisms/cdiff/cdiff\\_infect.htm](http://www.cdc.gov/hai/organisms/cdiff/cdiff_infect.htm).

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Thank You

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## Pediatric, Color-Coded, Emergency Medication Dosing Labels

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## Dosing Labels Created from What Hasn't Worked at my Facility:

- Pediatric, color-coded, medication dosing cards in every crash cart
- Education- new nurse education, skills fairs, competencies
- Pyxis weight-based dosing, MedHost weight-based dosing
- Micromedex emergency medication dose per weight printouts for each pediatric patient
- Pharmacist participation in emergency codes

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## Pharmacist Role in Medication Safety and Accuracy

- Monitoring
  - Observing
  - Statistics
- vs.**
- Preparing
  - Dispensing
  - Educating

**BETTER OUTCOMES**

- Problem solving/Innovation

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**PURPOSE- WHY do we need pediatric, color-coded, emergency medication dosing labels??**

**A recently published, cross-sectional analysis of nationally-certified paramedics (1014 total) resulted in 42.8% of respondents admitting familiarity with a case in which a pediatric patient was given an incorrect dose of medication.**



Hoyle JD Jr, Crowe RP, Bentley MA, et al. Pediatric prehospital medication dosing errors: A national survey of paramedics. *Prehosp Emerg Care*. 2017;21(2):185–191.

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## Statistics

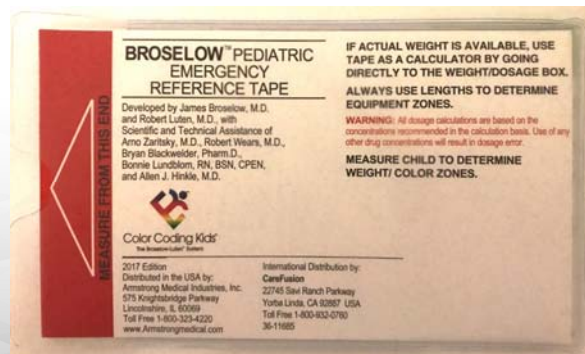
- As many as 1 in 10 hospitalized children are impacted by a medication error. Up to 35% of these errors are serious or life threatening.
- In one study, 3.2% of doses given to pediatric patients were 10-fold errors.
- Another study showed that 69.5% of total medication errors involved children and 42% of the errors were considered serious. Errors in decimal point placement, math calculations or expression of dosage regimen accounted for 59.5% of dosage errors.
- Medication errors occur in 39% of doses administered to pediatric patients seen in rural EDs. 15.9% were errors categorized as having the potential to cause harm.
- In one study of 241 medication doses given to pediatrics, the use of the color-coded dosing method reduced critical dosing errors to zero percent.

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## Background: The Broselow™ System

- The Broselow™ Pediatric Emergency Tape provides a tool for determining the correct dosage of medications and equipment sizes (endotracheal tubes, suction catheters, etc.) for children, based on their length.



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## The Broselow™ System

- The Broselow™ system can help simplify some of the decision-making in an emergency by eliminating the need to estimate a child's weight, which is typically used to calculate the correct dosage for a medication.
- In an emergency, the estimation of a child's weight and drug dosage calculation is done under stressful conditions, increasing the likelihood of dosage errors. Research has already shown that the dosage calculation in the pediatric setting is highly prone to errors.
- Additionally, patient weight in the pediatric population is critical for dosing formulas, but evidence suggests that both physician and nurse estimates of children's weights are unreliable (>15% off).

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## Rationale For Using a Color-Coded System

- Medication dosages typically are based upon the child's weight in kilograms.
- To provide the proper dosage of a medication to the child, the practitioner must know the child's weight, the dose per kilogram, and the available concentrations of the specific drug.
- Pediatric resuscitation drugs are not used often enough to recall the correct dosage, and valuable time is taken to look up the correct dosage by weight.
- Calculations required may include conversion of weight from pounds to kilograms, as well as dose by weight and concentration of the drug.
- By using a length-based system tool, the practitioner is able to concentrate on more important factors of care during the emergency, such as securing the airway, maintaining circulation, making a diagnosis and securing appropriate transport.
- In this case, the length measurement is taken directly from the child and a color is assigned. The practitioner does not need to rely on memory or calculations to select the appropriate size equipment or drug dosage.

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## History of Broselow™ Pediatric Emergency Tape



- The original tape was the invention of Dr. Jim Broselow, an emergency physician in Hickory, North Carolina.
- As family physician Dr. Broselow stated that he felt comfortable caring for very sick adults, but when the patient was a critically ill or injured child, he describes chaos, terror and lack of confidence on the part of emergency care providers.
- He was sure that there was a better way to care for these children that would provide consistency and standardization.
- In 1985, Dr. Broselow developed a simple tool to increase the accuracy of weight estimation using height-weight correlations from the National Center for Health Statistics (NCHS).
- The Broselow™ Pediatric Emergency Tape has become an industry standard in pediatric emergency care.

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## History of Broselow™ Pediatric Emergency Tape

- After the development of the original tape, Dr. Broselow teamed up with Dr. Bob Lutten, a Pediatric Emergency Physician from Jacksonville, Florida.
- Together, with the input of other colleagues, they have developed the latest tape and other items that enhance the system.
- Its development is based on more than 20 years of emergency department use.
- Use of the tape has been the subject of several studies that validate its use.
- Analysis shows that mean medication dosing error severity when subjects used the Broselow™ tape was 33.88% lower than when the Broselow™ tape was not available.
- The tape is recommended for use on any child under the age of 12 years old. For any child that is longer than the tape, the practitioner should use adult dosages and equipment.

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## How To Properly Use the Broselow™ Pediatric Emergency Tape

- Place the Broselow™ Pediatric Emergency Tape on a flat surface with the color-coded/weight side visible

RED				PURPLE			
	RESUSCITATION	RAPID SEQUENCE INTUBATION	PREMEDICATIONS		RESUSCITATION	RAPID SEQUENCE INTUBATION	PREMEDICATIONS
2 mg	Epinephrine (1:10,000)	0.885 mg (0.88 mL)	Atropine	0.17 mg	Epinephrine (1:10,000)	0.1 mg (1 mL)	Atropine
0.2 mg	Epinephrine ET		Propofol	17 mg	Epinephrine ET (1:1,000)	1 mg (1 mL)	Propofol
10 mg	Atropine (1 mg/mL)	0.885 mg (0.88 mL)	Lidocaine	10 mg	Atropine (1 mg/mL)	0.25 mg (2.5 mL)	Propofol
10 mg	Atropine (2 mg/mL)	0.17 mg (1.7 mL)	Lidocaine	10 mg	Atropine ET (0.4 mg/mL)	0.8 mg (10 mg)	Lidocaine
10 mg	Atropine ET (0.4 mg/mL)	0.40 mg (1 mL)	Propofol	20 mg	Sodium Bicarbonate	10 mg	Propofol
mg	Sodium Bicarbonate	8.8 mg	INDUCTION AGENTS	mg	Lidocaine	20-30 mg	INDUCTION AGENTS
mg	Lidocaine	8.8 mg	Etomidate	2.5 mg	Etomidate	2.5 mg	Etomidate
mg	Lidocaine ET	17.20 mg	Ketamine	17 mg	Lidocaine ET	17 mg	Ketamine
mg	Etomidate Doses	8.8 mg	Midazolam	2.5 mg	Etomidate Doses	8.8 mg	Midazolam
mg	2.5 mg	17	Propofol	25 mg	mg	2.5 mg	Propofol
mg	4-10 kg	330	PARALYTIC AGENTS	mg	Cardioparal	100/200	PARALYTIC AGENTS
mg	Cardioparal	250-400	Succinylcholine	17 mg	Cardioparal	100/200	Succinylcholine
mg	Cardioparal	50/100	Pancuronium	1.7 mg	Cardioparal	100/200	Pancuronium
mg	1st Dose	50/100	Vecuronium	1.7 mg	Cardioparal	100/200	Vecuronium
mg	2nd Dose if Needed	1.7 mg	Rocuronium	8 mg	Cardioparal	100/200	Rocuronium
mg	1st Dose	8.8 mg	MAINTENANCE	mg	Calcium Chloride	210 mg	MAINTENANCE
mg	2nd Dose if Needed	1.7 mg	Pancuronium/Vecuronium	8.8 mg	Calcium Chloride	210 mg	Pancuronium/Vecuronium
mg	Ativan	40 mg	Lorazepam	8.4 mg	Magnesium Sulfate	325 mg	Lorazepam
mg	Ativan	100 mg	mg	mg	mg	mg	mg
mg	Respirator Settings	400 mg	mg	mg	mg	mg	mg
	8 KG	9 KG					

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## How To Properly Use the Broselow™ Pediatric Emergency Tape (cont'd)

- Place the red end of the tape even with the top of the patient's head



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## How To Properly Use the Broselow™ Pediatric Emergency Tape (cont'd)

- One hand, resting on the table, should hold the red end of the Broselow™ tape even with the child's head.
- Your free hand should extend the tape down from the patient's head to the patient's heel (not toes).
- Never measure a child in the seated position.

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## How To Properly Use the Broselow™ Pediatric Emergency Tape (cont'd)

- The color zone of the tape adjacent to patient's heel identifies the patient's weight and color zone.
- If the child is longer/larger than can be measured with the tape (> 36 kgs.), stop and proceed as you would with an adult patient.

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## Overweight Patients

- If a child appears overweight, utilize **one zone HIGHER** for **medication** dosing only.
- **Equipment** used, however, should match the patient's measured length zone.



Equipment contents of  
Broselow™ cart  
(color coded by zone)



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## Examples of the Color-Coded Pediatric Dosing Stickers



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## Use of the Color-Coded Pediatric Dosing Stickers

- Based on the color-coded zones of the Broselow™ tape, the medications in an emergency pediatric medication drawer are individually labeled with a dosing sticker including each color zone.
- If the patient's weight is known, then the medication is dosed based on the color zone represented by the patient's weight (utilize the Broselow-Luten™ Zones chart).

3 kg	4 kg	5 kg
PINK		6-7 kg
RED		8-9 kg
PURPLE		10-11 kg
YELLOW		12-14 kg
WHITE		15-18 kg
BLUE		19-23 kg
ORANGE		24-29 kg
GREEN		30-36 kg

**Broselow-Luten Zones**

- If the patient's weight is unknown, then the Broselow™ tape should be used to measure the correct dosing zone for the patient, as described in previous slides.

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## Broselow™ Cart



Fannin Regional Hospital has **3 Broselow** carts which are located in:

- **PACU, ER and MedSurg**

The drawer configurations are:

- The first 8 drawers contain **equipment specific in size** for each color zone
- The bottom drawer is the **pediatric medication drawer.**

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## Medications in Broselow™ Cart- a recommended med stock list

Pediatric Code Cart Drawer Contents			
Qty	Medication	Concentration	Dosage Form
3	Adenosine	6 mg/2 ml	SDV
2	Amiodarone	150 mg/3 ml	SDV
1	Dextrose 5%	100 ml	IV Bag
3	Atropine	1 mg/10 ml	Bristojet
3	Atropine	0.4 mg/ml	SDV
1	Calcium Chloride	1000 mg/10 ml	Bristojet
1	Dobutamine	250 mg/250 ml	Premixed bag
1	Dopamine	400 mg/250 ml	Premixed bag
5	Epinephrine	1:10,000	Bristojet
4	Epinephrine	1 mg/ml	Ampule
<b>Epinephrine drip contents:</b>			
4	Epinephrine	1:1,000	1 ml amps
1	Sodium Chloride 0.9%	250 ml	IV Bag
1	Dextrose 10%	250 ml	IV Bag
2	Lidocaine	100 mg/5 ml	Bristojet
1	Lidocaine	2000 mg/500 ml	Premixed bag
2	Magnesium Sulfate	1 gm/100 ml	Premixed bag
1	Naloxone	0.4 mg/ml	10 ml MDV
2	Romazicon	0.5 mg/5 ml	MDV
<b>Norepinephrine drip contents:</b>			
1	Norepinephrine	4 mg/ 4 ml	Ampule
1	Dextrose 5%	250 ml	IV Bag
<b>Procainamide drip contents:</b>			
2	Procainamide	1 gm/2 ml	SDV
1	Dextrose 5%	500 ml	IV Bag
2	Sodium Bicarbonate 8.4%	50 meq/ 50 ml	Bristojet
2	Sodium Bicarbonate 4.2%	5 meq/ 10 ml	Bristojet
1	Sodium Chloride 0.9%	500 ml	IV Bag

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## Color-Coded Pediatric Dosing Labels- Process

- Pharmacy staff to place color-coded adhesive labels on each medication in the pediatric emergency drawer.
- The color-coded labels allow nurses to have readily available the exact and correct **volume** of the medication for the color zone of the patient.
- The labels allow for more timely medication administration and also provide dose accuracy.
- In addition, the color-coded labels can be placed on rapid-intubation box medications.

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## Color-Coded Pediatric Dosing Stickers- Application of the Label

The labels contain the medication name and concentration to ensure accuracy in placement of the label by pharmacy



The color-coded medication labels show the exact volume for each color based on the Broselow™ emergency tape scale.

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## Adenosine- label considerations

- Ziplock bag to include 3 vials and 2 color-coded stickers.
- The first sticker is for the FIRST DOSE (0.1 mg/kg) per PALS guidelines
- The second sticker is for the SECOND DOSE (0.2 mg/kg) per PALS guidelines



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## Amiodarone- suggested labeling procedure

- Labeled amiodarone vials paired labeled D5W bag for proper dilution of the amiodarone in D5W for administration.



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## Endotracheal Tube (ET) Medications

Three medications in the pediatric medication drawer are labeled for ET administration:

- **Atropine**  
 (NOTE, concentration is 0.4 mg/ml)
- **Lidocaine**  
 (NOTE: ET labeling will be placed on the back of the bristojet box)
- **Epinephrine**  
 (NOTE: concentration is 1 mg/ml which is not appropriate for IV push)



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## Dextrose Bristojet vs Dextrose 10%



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## Accurate Measurement of Doses

When pulling up from bristojets without clear markings for small doses, the bristojet may be entered with the needle on a 1 ml syringe through the rubber stopper.



Color	Volume (ml)
GRAY	0.4 ml
PINK	0.65 ml
RED	0.85 ml
PURPLE	1 ml
YELLOW	1.3 ml
WHITE	1.7 ml
BLUE	2.1 ml
ORANGE	2.7 ml
GREEN	3.3 ml

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## Rapid Sequence Intubation Boxes

- The stickers may be used for Rapid Sequence Intubation box medications as well



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## Pediatric Color-Coded Dosing Labels

- Currently available in rolls of high-quality, laminate, adhesive labels, including 26 medications repeating 6 times per roll. Also available- surplus roll of the most frequently used medications.
- It is suggested that pharmacy be responsible for the placement of the pediatric color-coded stickers including a double-check process.
- Nursing should be instructed to not remove the labels from medications to be re-applied due to safety concerns.



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## Joint Commission Survey Results and Board of Pharmacy Discussion

- The Joint Commission surveyed our facility on June 5 & 6, 2017
- One of the surveyors was a pediatric ER nurse who stated that the labels should become “best practice.”
- After a visit to the Georgia Board of Pharmacy meeting in May 2017, the members determined that the labels would not fall under auxiliary labels but are considered “dosing labels” and their use should be determined by the individual hospital. They also added that the labels are a great “safety initiative.”

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