Improving Patient Safety with IV Opioids and Sedatives through Nursing Education

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Conflict of Interest Disclosure

Conflicts of Interest for ALL listed contributors.

• None
• Sharon Wrona
• Lauren Renner

A conflict of interest is a particular financial or non-financial circumstance that might compromise, or appear to compromise, professional judgment. Anything that fits this should be included. Examples are owning stock in a company whose product is being evaluated, being a consultant or employee of a company whose product is being evaluated, etc.

• Taken in part from “On Being a Scientist: Responsible Conduct in Research”. National Academies Press. 1995.

Objectives

• The learner will be able to identify the benefits of having an educational program for RN’s prior to administering IV opioids/sedatives/hypnotics.
• The learner will be familiar with what the education includes and how the RN’s are tested.
• The learner will have talked about pass/fail rates and indicators for the RN.
**Outline**

- Discuss reduction in naloxone administration rate
- Discuss RN comfort level with administration medications after class and test
- Discuss parts of the education
  - Study guide
  - Homework
  - Class
  - Test
- Discuss pass/fail rates and what the next steps are.
- Discuss results of recent RN survey on IV opioid class

**Components of education**

- Study guide
- Homework
- Class
- Exam

**Study guide**

- There are study guides located on each nursing unit and also on the intranet
- The self study contains all of the material that is covered in the class plus more detail
- The RN is expected to review the study guide and understand the material prior to coming to class
Study guide contents

- Introduction
- Overview
  - Physiological differences in children
  - 5 rights of drug administration
  - Banned abbreviations/symbols
  - Medication calculations
  - Available resources for medication information
  - Administration and handling of controlled substances
  - Controlled substance laws
  - Putting concepts into practice

Study guide contents

- IV opioid/sedatives/hypnotics/anticonvulsants
  - Pharmacology of opioids, benzodiazepines, barbiturates, anticonvulsants, reversal agents
  - Review of basic physiology and pharmacology of opioids
  - Pain pumps
  - Epidurals
  - Peripheral nerve catheters
  - Procedural sedation
  - Neonatal pharmacologic considerations
  - Summary matrix
- Case studies and self assessments
- Answer key
- Policies and procedures

Homework

- The nurses are asked to answer questions related to what they have learned in the self study
- The questions are fill in the blank, chart fill in, case studies, matching and multiple choice
- They are given the answer key for the homework to check their answers
Class

- They receive 5.6 CEU's for attending the class
- The pharmacist lectures for the first 1.5 hrs about controlled substance handling/laws
- The pain service nurse practitioner teaches the remainder of the class
- There is a designated RN for the professional development department who works closely with the APRN - They help with coordination of the class

Class

- The class is primarily power point with turning point interactive questions spread throughout
- There are case studies and medication calculations included in the lecture
- There are usually between 40-60 RN's in each class
  - This can vary depending on hiring rates

Exam

- The RN is encouraged to attend the class but it is not a requirement
- If they do not attend the class they will not receive CEU's
- There are two versions of the test
- A score of ≥90% is considered a pass rate
- They are not allowed to have notes with them, just a non-programmable calculator
- Nursing educators from around the hospital help to grade the test
  - An educator goes over each question that is answered incorrectly with the student
Challenges

• How do we train everyone?
• What do we do if the RN fails the exam?
• How do we keep the information current?
• How do we evaluate the effectiveness of the class?

Challenges

• Training
  – All RN's who are going to be administering any IV opioid/sedative/hypnotic must have passed the exam first
  – We have recently started to include our off site NICU’s and required them to take exam
    • We have met resistance towards this especially with the tenured RN’s
  – The RN now has two chances to pass the exam. After that, it is up to the manager’s discretion if they will keep their current position or not

Exam Data
How do we evaluate the effectiveness of the class?

- Look at naloxone administration rates for respiratory depression compared to nationwide rates
  - A challenge has been finding average nationwide naloxone administration rates
- Survey monkey results
- Incident reports involving opioids
Opioid incident reports from 12/11-6/15

- Events involving PCA pumps-69
  - 7/69 events were involving a pharmacy processing event
- Events involving epidural pumps-4
  - 1/4 events were involving a pharmacy processing event
- Total events involving PO or IV opioids 662

Nursing survey

- How long have you been a RN?
- How long have you been an RN at Nationwide Children’s Hospital (NCH)?
- What unit/area do you currently work on?
- What nursing education have you completed
- Have you taken the IV opioid/sedative/hypnotic class and exam? If yes: self-study with exam only, class and exam o how long ago?

Ratings for below questions 0-3 (0- not helpful, 1 – little helpful, 2 – somewhat helpful, 3 – very helpful)

1. How comfortable do you feel administering IV opioids/sedatives/hypnotics?

2. How comfortable do you feel recognizing side effects and adverse effects related to the above medications?
3. How helpful do you feel the PCA portion of the class was for you?
4. How helpful do you feel the epidural portion of the class was for you?
5. How helpful do you feel the procedural sedation and monitoring section was for you?
6. How helpful do you feel the self-study/class and exam was for you in prevention error related to IV opioids/sedatives/hypnotics?
7. How helpful do you feel that this class/exam has improved safety for our patients at Nationwide Children’s Hospital?
8. If you could change the class in any way what would you suggest?
Results of nursing survey

Naloxone administration
• Naloxone doses given for opioid reversal: 1/2011-7/2015
  • 149 individual patients
  • 291 total doses given on the inpatient areas
    • Pediatric ICU: 86 doses
    • Cardiotoracic ICU: 62 doses
    • Surgery/Trauma/Burns: 36 doses
    • Hemat/onc: 29 doses
    • Neonatal ICU: 22 doses
    • PICU step down: 19 doses
    • General medical floor: 12 doses
    • Rheumatology/Nephrology/GI: 8 doses
    • Pulmonary: 7 doses
    • Cardiology: 7 doses
    • Infectious disease: 3 doses

Zero Hero-Points of pride
• Nationwide Children’s was the first pediatric institution to aspire to zero preventable harm and make it a public goal.
• We were the first health care institution to develop a pediatric preventable harm index. The model is now used for both statewide and national patient safety efforts.
• Zero Hero has prevented more than 500 events of harm, including 100 Serious Safety Events. And during the Zero Hero time period, overall hospital mortality has decreased 40 percent.
• Since Zero Hero began, we’ve achieved a 50 percent reduction in actual harm and an 85 percent reduction in serious safety events.
Zero Hero

To create a safe day, everyday, we need to hold ourselves accountable, hold our teammates accountable and be a wingman! To do this:

• show team accountability
• offer to help others stay on task
• take pre-cautions with high-risk situations
• appreciate friendly reminders from coworkers