Point of Care Pain Management: Taking Pain and Sedation Management to the Bedside

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Conflicts of Interest Disclosure

• Conflicts of Interest for ALL listed contributors.
  • Kim Brondum - None
  • Susan E. White - None
  • Sharon Baumert-Kysely – None

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 Academy Press. 1995.

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Objectives

• Describe the Sedation Nurse role development at a 340-bed community hospital.

• Relate 4 case studies to the impact of the Sedation Nurse model.

• Discuss process data and outcomes from the Sedation Nurse model.
Point of Care Pain Management

Santa Barbara Cottage Hospital

- 340 Bed Tier 2 Trauma Center
- Teaching Facility
- 2 Nursing Schools in the area

Our Challenge
How to manage patients who undergo procedures at the bedside or outside of the clinical unit requiring ongoing medication administration and monitoring?
- MRI patient needs Ativan
- Burn patient in whirlpool needs pain medication and sedation
- CT patient needs difficult IV start
- Patient on floor needs analgesia/sedation for complex dressing management.
STUDIES CONTINUE TO SHOW THAT PATIENTS, REGARDLESS OF AGE, GENDER, RACE, ETHNICITY, OR SOCIOECONOMIC STATUS, OFTEN ENDURE PROCEDURAL PAIN THAT COULD POTENTIALLY BE MINIMIZED IF NOT ELIMINATED (AMERICAN ASSOCIATION OF PEDIATRICS/AMERICAN PAIN SOCIETY [AAP/APS], 2001).

Current Staffing Patterns

- Nurse-Patient Ratios
  - In 1999 the State of California was 1st state to establish maximum RN-to-patient ratios for hospitals
  - Critical Care: 1:2
  - Step-down: 1:3
  - Telemetry: 1:4
  - Pediatrics: 1:4
  - Med-Surg: 1:5
  - Psychiatric: 1:6

“Lit Bits”

- Procedural sedation and analgesia (PSA)
- ASPMN Position Statement
- Chest tube removal pain
- Wound dressing change pain
- IV start pain
Point of Care Pain Management

PSA: Definition (Frank, 2014)
- Procedural sedation and analgesia (PSA) involves the use of short-acting analgesic and sedative medications to enable clinicians to perform procedures, while monitoring the patient closely for potential adverse effects.
- This process was previously (and inappropriately) termed "conscious sedation."

PSA (Frank, 2014)
- PSA may be used for any procedure in which a patient’s pain or anxiety may be excessive and may impede performance.
- There are no absolute contraindications to PSA.
- Proper monitoring during PSA is crucial.
- Serious complications attributable to PSA rarely occur.
- Ideal drugs for PSA:
  - Rapid onset and short duration of action
  - Maintain hemodynamic stability
  - Do not cause major side effect

ASPMN Position Statement

“…believes individuals who undergo potentially painful procedures have a right to optimal pain management before, during, and after the procedure and should have a plan in place to address potential pain and anxiety before initiation of any procedure”.

(Czarnecki, et al, 2011)
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ASPMN Position Statement

- “...that nurses and other health care professionals advocate and intervene based on the needs of the patient, setting, and situation, to provide optimal comfort management before, during and after procedures.”
- Provides recommendations for nonpharmacologic and pharmacological management during all phases of the procedure. (Czarnecki, et al, 2011)

Procedural Pain

- Thunder II Project (Puntillo et al, 2001)
  - Measured procedural pain in 5957 adults
  - Average pain score ± SD (0-10 NRS)
    - Fem sheath removal 2.65 ± 2.95
    - CV catheter placement 2.72 ± 2.93
    - Tracheal suctioning 3.94 ± 3.32
    - Wound care (non-burn) 4.42 ± 3.20
    - Wound drain removal 4.67 ± 3.24
    - Turning 4.93 ± 3.09
  - Less than 20% of patients received analgesia prior to procedure.

Chest Tube Removal Pain

- Fourteen studies were reviewed
  - 5 descriptive studies
  - 3 studies of non-pharmacological interventions;
  - 6 randomized controlled trials of morphine, local anesthetics and ENTONOX® (medical nitrous oxide and oxygen mixture)
  - Only two pediatric studies
- The majority of studies indicated that patients experienced moderate to severe pain during chest drain removal, even when morphine or local anesthetics were given.
Chest Tube Removal

- **74 Patients in RCDB study**
  - MSIV 4 mg + procedural info
  - Ketorolac (Toradol®) 30 mg + procedural info
  - MSIV 4 mg + procedural and sensory info
  - Ketorolac (Toradol®) 30 mg + procedural and sensory info

- **Results**
  - No significant difference among groups
  - Procedural pain intensity (mean 3.26, SD 3.00)
  - Pain distress (mean 2.98, SD 3.18)

- **Conclusion**
  - Either opioids or NSAIDS used with appropriate timing decreases the pain and distress of CT removal

Punello & Ley, 2004

In-Hospital Wound Care Pain

- **Wound care pain-hospitalized adults**
  - Pain before/during/after WC (n=412)
  - Average pain score ± SD (0-10 NRS):
    - Before: 3.0 ± 2.85
    - During: 4.4 ± 3.20
    - After: 2.7 ± 2.74
  - Interventions to prevent or treat pain
    - Pharmacologic: 23.8% of patients
    - Nonpharmacologic: 88.3% of patients
  - Pain descriptors during WC

<table>
<thead>
<tr>
<th>Tender (54%)</th>
<th>Sharp (39%)</th>
<th>Stinging (32%)</th>
<th>Aching (28%)</th>
<th>Stabbing (26%)</th>
</tr>
</thead>
</table>

(Stotts et al., 2004)

Chronic Wound Dressing Pain

- **International survey (n=2018)** (Price et al., 2008)
  - Pain at dressing change
    - Most or all of the time: 32%
    - Often: 22%
    - Rarely or never: 45%
  - Venous, arterial and mixed ulcers associated with more pain
    - Most or all of the time: 44%
    - Often: 24%
    - Rarely or never: 32%
**Chronic Wound Dressing Pain**

- Time for pain to subside after wound care
  - Less than one hour: 40%
  - 1-2 hours: 22%
  - 3-5 hours: 10%
  - More than 5 hours: 8%

40% indicated pain at dressing change was the worst part of living with a wound.

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**Painful IV Starts**

Patients often fear venipuncture and IV starts

However, nurses rarely use a local anesthetic, even though they would prefer it.

The Infusion Nurses Society Standards of Practice call for the RN to consider providing local anesthetics prior to venipuncture (2006).

All State Boards of Nursing approve this as a nursing function.

Multiple studies in pediatrics support analgesia prior to venipuncture procedures.

Lidocaine vs. EMLA (eutectic mixture of lidocaine 2.5% and prilocaine 2.5%): 1/2 preferred lidocaine, 1/2 preferred EMLA (Eidelman, Weiss, Lau, et al., 2005)

Vapocoolant Sprays safe and effective for IV starts in ED in adults (Hijazi, Taylor, Richardson, 2009)

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**How It All Got Started**

- Need for procedural sedation for outpatient trauma patients in whirlpool

- Multidisciplinary Task Force Team formed
Task Team Representatives

- Medical Director of Trauma Services
- Clinical Manager of Emergency Department
- Pharmacist
- Trauma Nurse Coordinator
- RN from Nursing Resource Unit
- Physical Therapist
- Administrative Nursing Supervisor

What They Decided

- To utilize current resources
- Looked to the Nursing Resource Unit
  - aka “Float Pool”
- A RN would be assigned daily to the role of Sedation Nurse

Success Story

- Initially primarily used in whirlpool for burn patients undergoing debridement…
- Decreased pain and anxiety
- Decreased procedure time
- Improved patient experience and satisfaction
- Trauma surgeon thrilled!
Original Criteria for Nurses

- **RN License**
  - The nurse must possess knowledge of and ability to apply in practice anatomy and physiology including principles of oxygen delivery, transport and uptake.

- **ACLS**
  - Airway management, arrhythmia recognition and emergency resuscitation.

- **Written Medication Exam**
  - Pharmacology for sedating agents including drug actions, side effects, contraindications, reversal agents and untoward effect.

- **Orient one shift to role**

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A Day in the Life...

- RN carries a pager and Vocera for 8- to 12-hour shift
- Available to whirlpool therapy as needed for outpatients and inpatients.
- Round on floors during downtime to assist in bedside procedures; chest tube removal, wound VAC changes, IV starts, monitoring patients to CT, MRI...
- If available, respond to Rapid Response Team calls and Code Blue to assist as necessary under the direction of nursing supervisor.

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Data Collection

- Name_________________________
- Date________________
- Location & Procedures
- Pain Scale
  - Pre____  During_____  Post____
- Procedure Time__________
- Patient Diagnosis____________________

- Location
- RN
- Procedure
- Pain intensity scores
  - Before
  - During
  - After
- Medications
- Reversal medications
- Diagnosis
Case Study #1

- 35 year old male
- Camping in his RV
- Lit stove and there was an explosion
- Sustained deep partial thickness burns to 18% of his body

Day of Injury

Day 2
Case Study #2

- 22 year old female passenger on a motorcycle
- Sustained second degree burn to right calf from motorcycle muffler

Day of Injury

Day 10
Course of Treatment

- 33 days of debridement and treatment
- Initial 3 treatments needed procedural sedation and analgesia (PSA)
  - Midazolam (Versed® Injection) and fentanyl (Sublimaze®)
- Pain scores averages
  - Pre  4.3
  - During  5
  - Post   3
Case Study #3
- Chest Tube Insertion
  - 80 year old Female
  - Spontaneous Pneumothorax
    - due to extensive lung disease
  - Midazolam (Versed® Injection) and local anesthetic given
- Pain Level
  - Pre 0
  - During 8
  - Post 0

Case Study #4
- Difficult IV start
  - 68 y.o female w/ history of lymphoma and chemotherapy
  - No longer has port
  - Pain Levels
    - Pre 0
    - During 0
    - Post 0
- Also used frequently to access Port-a-caths

Location of Procedure
- OP 6%
- PR 6%
- Tele 6%
- Neuro 8%
- Trauma 8%
- Ortho 60%
- WP 6%
By Procedure

- Hernia reduction
- Burn debridement
- CT removal
- Other dressing change
- Nerve block for wound

- Cardioversion
- CT insert
- Wound vac dressing change
- Difficult IV start

Expanding the Role

- 2009, November - Monitoring of ketamine drips with psychiatry
- 2010 July - PPD placement and reading of inpatients
- 2011 December - Removal of epidurals
- 2013 March – Post-pyloric TF placement
- 2013 December – DEFINITY® (perflutren lipid microsphere) administration
- 2014 June – Diabetes teaching (meters)
- 2014 Oct - Adding capnography monitoring

Feedback

Orthopedic RN

“The sedation nurse has been a wonderful addition for the staff. Our patients are able to be discharged faster since the sedation nurse has become available because they are able to remove epidurals. In the past, a patient had to wait hours for the anesthesiologist to remove an epidural prior to their discharge.”
Feedback

Trauma RN

“Sedation RNs make it possible to medicate patients and ensure safety is maintained during chest tube removals and other procedures requiring conscious sedation. It allows the floor RN to remain available for care of their other patients.”

Feedback

Physical Therapist/Wound Care Specialist

“Having the sedation nurses as part of our wound and burn management team has been a pivotal and fundamental part of caring for our patients. We are now able to keep the patients comfortable while providing adequate pain management all in keeping with the Patients First culture that we strive to maintain.”

Lessons From the Field

• Add sedation scores to the data collection form
• Refine data collection
  ◦ Patient questions at end of procedure:
    • “Was your pain well controlled during this procedure?”
    • “Do you feel we did everything we could to control your pain?”
• Allow more time after medication administration for medication to work
• Sedation Nurse survey
Survey Results (N=4/10)
• Effect on job satisfaction = +5
• Improved pain management for patients
  ◦ S-RN focuses solely on the patient
  ◦ Relieve floor nurse to care for other patients

“Pain management is one of the biggest components of our role and I often step in and speak to the floor nurse and even the MD about pain control.”

• Recommendations
  ◦ More education about pain management
  ◦ Order set

Pain Management at Cottage

- Interdisciplinary Pain Committee
  - Co-chaired by Nursing and Medicine (Anesthesiology)
- Anesthesiology
  - Primarily in the OR
  - Interventional
- Palliative Care Consultation Service
  - Consultation for complex pain management patients
- Pain Resource Nurse Program
  - RN as expert consultant and change agent
- Pain Management Nursing Grand Rounds
  - Quarterly case study presentations by staff nurses
- Sedation Nurse
  - Bedside procedural sedation and analgesia (PSA)

HCAHPs (2014): Pain Management

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<tr>
<th></th>
<th>Achievement Threshold</th>
<th>Benchmark</th>
<th>Current Performance</th>
<th>Performance Points</th>
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<tbody>
<tr>
<td>Pain Management</td>
<td>70%</td>
<td>78%</td>
<td>88%</td>
<td>10</td>
</tr>
<tr>
<td>Pain Management</td>
<td>70%</td>
<td>78%</td>
<td>75%</td>
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In Summary

Patients often endure procedural pain that could potentially be minimized if not eliminated.

Procedural sedation and analgesia (PSA) may be used for any procedure in which a patient's pain or anxiety may be excessive and may impede performance.

It is challenging to provide PSA with limited access to trained staff while maintaining staffing ratios.

The role of a Sedation Nurse as part of an organization's Pain Management plan can be helpful in decreasing patient procedural pain and increasing patient satisfaction.

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