IMPROVEMENTS IN CONTROLLING PAIN IN A PEDIATRIC CRITICAL CARE SETTING

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Background

While many consider pain to be the 5th vital sign, a thorough pain assessment and proper intervention may take secondary importance to other vital signs necessary for life sustaining therapies and goals in critical care settings. This was evident when a pain prevalence survey conducted in September 2009 averaged a surprising 50 percent rate of moderate to severe pain in the intensive care population.
Aim

Decrease the prevalence of moderate to severe pain in the pediatric and cardiac intensive care units (ICUs) by at least 50% during the quality improvement initiative period (Sept 2009- Sept 2010).
Results

In spite of 3 months of an educational initiative, the quarterly ICU pain prevalence increased to over 60%. With a lack of improvement from standard education efforts, we:

- Administered a Pediatric Nurses Knowledge and Attitudes Survey.
- TRIaled new pain scales.
- Dispelled myths regarding pain management.
- Formed a multidisciplinary team to evaluate pain practices.
- Involved families in the redevelopment of ICU appropriate pain education materials.

Thoughtful efforts have lead to a significant reduction in moderate-severe pain with September 2010 prevalence < 20%.
### Pediatric Nurses Knowledge and Attitudes Survey

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<thead>
<tr>
<th>Knowledge Question</th>
<th>Attitude Question</th>
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<tr>
<td>67% of Nurses thought anxiolytics, sedatives, and barbiturates were appropriate for the relief of pain during a painful procedure.</td>
<td>87% of Nurses agreed medication orders were often insufficient for optimal pain management.</td>
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<td>52% thought the usual duration of Morphine IV is 4-5 hours.</td>
<td>52% agreed competing demands on time was a barrier to optimal pain management.</td>
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<td>40% thought respiratory depression was not rare in children/adolescents receiving opioids over a long period.</td>
<td>50% felt pain assessment scales were not helpful or easy to use.</td>
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<td>40% thought increasing dosages of Morphine beyond a certain level would not improve pain relief.</td>
<td>33% were concerned about children becoming addicted to pain medicine while in the hospital.</td>
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Improvement Strategies

A New Pain Scale was Trialed for Post-Op Cardiac Patients

Cardiac Analgesic Assessment Scale

- **Pupil Size**
  - ≤ 2mm: 0
  - 3-4mm: 1
  - >4mm: 2

- **Heart Rate**
  - Baseline: 0
  - 5-15% Increase: 1
  - >15% Increase: 2

- **Blood Pressure (mean)**
  - Baseline: 0
  - 5-15% Increase: 1
  - >15% Increase: 2

- **Respiratory and Motor Response**
  - None: 0
  - Cough and minimal movement settles after removal of stimulus: 1
  - Cough and/or excessive movement >1min after removal of stimulus: 2

**TOTAL**

Assessment Frequency was Increased

Written Principles on Pain Management were Highlighted

Nursing

![Texas Children's Hospital Logo]
Parent Handout

Texas Children’s Heart Center
Pain Factsheet for Parents

Will my child be in pain while in the CVICU?

Pain can be caused by illness, tests, procedures, surgery, or treatments necessary to help your child get better. The CVICU team will use many different methods to decrease the pain and discomfort of your child including positioning for comfort, music or TV, cuddling, and pain medication when necessary. Child Life Specialists are often available to provide distraction activities and support during painful procedures. Ask your nurse how Child Life Specialists can help.

How do I know if my child is in pain?

Some signs of pain that your child may show are continued crying, frowning, trouble sleeping, high heart rate, or a drop in oxygen in the blood. Some post-operative babies do not have the energy to show pain in the usual way and may look like they are sleeping. Nurses caring for your child are trained to look for pain and use special tools to rate the level of pain your child might have.

What if my child is still irritable or agitated?

Sometimes children are upset or irritable instead of in pain. Many of the signs of irritability and stress can be the same behaviors seen when your child is in pain. Your nurse can help you identify pain versus stress responses. Please talk your concerns about pain to your child’s nurse or doctor to discuss the possibility of pain and what to do about it.

CVICU CARES

How can I help comfort my child?

Be mindful of your own anxiety, often children can sense this and it adds to their stress level. Decreased stimulation including letting your child sleep or rest and avoiding activities that may excite your child may help comfort them as they go through a painful procedure or surgery. Your presence also may be comforting to your child once he or she is more awake and alert.

How will the bedside nurse manage my child’s pain?

When simple and quick procedures such as an IV are performed, comfort measures such as repositioning, swaddling in a blanket, pacifier or offering a small amount of sugar water (sure) before and after the procedure may soothe the baby. Distraction activities or pain medication before the procedure may be helpful for older children. As a parent, you can learn how to comfort your child during painful procedures. Ask your nurse how you can help.

What about pain medication?

Pain medications may be used in the treatment of moderate or severe pain (like other surgery). There are many types of medications and different ways to give them, often through an IV (a small catheter inserted for giving fluids or medication) or by mouth if your child is able to have liquids. If you are concerned the medication is not working adequately please talk with your child’s nurse or doctor. The goal of your CVICU team is to provide the most comfortable recovery possible. Often this is not pain free, but a level tolerable to allow normal activities such as eating and regular movement or positioning and encourages deep breathing. The relief of pain and stress is a top priority while your child recovers; the best nursing and medical care in the CVICU.
Results

Moderate-Severe Pain Prevalence

- PICU
- CVICU
- Goal

Nursing

Texas Children’s Hospital
Achieving Better Pain Management in the ICU

• Scheduled pain medications first 24 hours post-op
• Written pain principles
• Increased frequency of pain assessments
• Nursing and family education
• Frequently reassess pain data
• Culture change
References


Copy of data collection tools