A Fresh Outlook on Pain Management: Three Innovative Strategies to Reduce Pain

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Denver Health Medical Center

7th Annual Nursing Quality Conference: “Reaching the Core of Quality”
Background:

- Partnered with the National Database of Nursing Quality Indicators (NDNQI®) and the University of Utah with 326 other hospitals

- A national translational research study designed to test strategies to improve the management of pain in hospitalized patients. Two Phases of Data Collection April 2011 and December 2011: All inpatient Adult Medical Surgical Units and Mom/Baby

- One unit chosen for Phase II Intervention: Medical Surgical Oncology Unit (Red Unit)
Setting:

- Denver Health Medical Center
- Rocky Mountain Regional Trauma Center
- 525 beds - urban public safety net hospital
- 42% of Denver Health clients are uninsured
- In 2011, $460 million of uncompensated care was provided to patients who could not pay for their care
The purpose of this study is to:

- Gather data from patients by asking them directly about their experience with pain
- Gather the responses about their perception and satisfaction of pain care
- Implement evidence-based approaches to measure and improve outcomes as related to pain management
Methods:

Project consisted of two phases:

• Phase I:
  
  - Included April 2011 survey of patients on nine acute care units
    
    • Adult Medical
    • Adult Surgical
    • Adult Medical-Surgical
    • Adult Step Down
    • Adult Rehab
    • Obstetric/Post Partum
  
  - Pain Quality Indicator survey provided by a NDNQI© was used to evaluate baseline data
  
  - Data was analyzed by NDNQI © and included aggregate responses at the unit level including percentiles, median, mean, standard deviation, and number of units
  
  - A Medical-Surgical oncology unit was chosen by NDNQI ©
  
  - Team leader was interviewed to gather information regarding unit understanding of quality improvement and perception of pain management
Methods:

- Phase II:
  - The goal of the second phase of this project was to implement and evaluate three levels of resources to support improvement in pain management:
    - Level 1: the usual practice group (control group)
    - Level 2: provided with web-based pain improvement toolkit to support implementation of pain care improvement at the unit-level.
    - Level 3: provided with the toolkit and monthly conference calls with pain experts
  - Denver Health Medical-Surgical Unit was chosen for Level 1 (control group) and for our “standard practice” three interventions were chosen:
    - Nursing Education
    - Pain Order Set
    - Pet Therapy
  - Nurse Team Leader was interviewed after Phase II
  - Re-surveyed in December 2011 of same units
• Created an evaluation tool for nurse knowledge regarding pain:
  – “Brief Pain Surveys” developed by leading pain researchers Betty Ferrell, PhD FAAN and Margo McCaffery RN, MSN, FAAN (Ferrell, BR & McCaffery, M. 1996 Brief Pain Surveys/City of Hope, Duarte, CA)

• Nurses surveyed prior to and after education
Interventions:

- Education included:
  - Pain assessment principle's:
    - Accept patients complaint of pain
    - History of pain
    - Assessment of non-verbal patients
    - Patient centered goals
  
- Algorithm

Adult Inpatient Acute Pain Management Algorithm (Non-PCA)

Education done Sept 2011
Interventions:

- Pain Order Set
  - Education done with RNs
  - Education done with Providers
  - Implementation June 7, 2011
  - Feedback from RN’s
  - Feedback from Providers
  - Early data gathering
Interventions:

- Pet Therapy
  - Pain scores before and after
  - Patient comments
  - Observation

Education done
Sept 2011
First visit
9/12/2011
Results & Outcomes:

- Patient survey (NDNQI©)
- Nurse pre and post education
- Order Set
- Pet Therapy
- Focusing on control unit
- Interventions were over a 3 month period:
  - September 2011 through November 2011
- Unclear on what intervention affected results
- Statistical difference vs. clinical difference
# Results: Patient Survey

- **Included patients:**
  - Age 19 or older
  - English speaking
  - Be in pain or given pain medication within the last 24 hours

### Benchmark Comparison:
- **Pre:** significantly higher prior to intervention
- **Post:** slightly below

## Table: Patient Survey Results

<table>
<thead>
<tr>
<th></th>
<th>Unit Census</th>
<th>Patients Assessed</th>
<th>Patients off Unit</th>
<th>Patients Physically / Mentally Unable</th>
<th>Wrong Population Type</th>
<th>Patient Ineligible</th>
<th>Patient Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE</strong></td>
<td>31</td>
<td>14</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td><strong>POST</strong></td>
<td>36</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>20</td>
<td>3</td>
</tr>
</tbody>
</table>

## Chart: Patient’s Rate of Pain on Average in the Past 24 Hours: % by Pain Score Value

- **PRE:**
  - Pain Score: 0% | Pre: 0.0% | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 28.6% | 14.3% | 7.1% |
- **POST:**
  - Pain Score: 0% | Pre: 0.0% | 11.1% | 0% | 0% | 11.1% | 11.1% | 11.1% | 11.1% | 22.2% | 11.1% | 11.1% | 28.6% | 14.3% | 7.1% |

Pre: April 2011
Post: December 2011
Results: Patient Survey

Benchmark Comparison:
- Pre – significantly higher prior to intervention
- Post – slightly below

Benchmark Comparison:
- Pre – Above
- Post – slightly below
Results: Patient Survey

Benchmark Comparison:
- Pre – Slightly Above
- Post – Above

My Nurse Believed My Reports About My Pain

Benchmark Comparison:
- Pre – Significantly Above
- Post – Above
### Results: Patient Survey

#### I Had Pain Medication Available When I Needed It

<table>
<thead>
<tr>
<th></th>
<th>% Strongly Disagree</th>
<th>% Moderately Disagree</th>
<th>% Slightly Disagree</th>
<th>% Slightly Agree</th>
<th>% Moderately Agree</th>
<th>% Strongly Agree</th>
<th>% Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE</strong></td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>POST</strong></td>
<td>0.0%</td>
<td>0.0%</td>
<td>11.1%</td>
<td>0.0%</td>
<td>11.1%</td>
<td>77.8%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

**Benchmark Comparison:**
- Pre – Significantly Above
- Post – Above

#### My Nurse Suggested Approaches to Help Manage My Pain

<table>
<thead>
<tr>
<th></th>
<th>% Strongly Disagree</th>
<th>% Moderately Disagree</th>
<th>% Slightly Disagree</th>
<th>% Slightly Agree</th>
<th>% Moderately Agree</th>
<th>% Strongly Agree</th>
<th>% Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE</strong></td>
<td>14%</td>
<td>0%</td>
<td>0%</td>
<td>21%</td>
<td>14%</td>
<td>50%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>POST</strong></td>
<td>56%</td>
<td>0%</td>
<td>0%</td>
<td>11%</td>
<td>11%</td>
<td>22%</td>
<td>11%</td>
</tr>
</tbody>
</table>

**Benchmark Comparison:**
- Pre – Significantly Above
- Post – Below
Results: Patient Survey

Benchmark Comparison:
- Pre – Significantly Above
- Post – Above

My Nurse Discussed Side Effects of the Pain Medications With Me

<table>
<thead>
<tr>
<th></th>
<th>% Strongly Disagree</th>
<th>% Moderately Disagree</th>
<th>% Slightly Disagree</th>
<th>% Slightly Agree</th>
<th>% Moderately Agree</th>
<th>% Strongly Agree</th>
<th>% Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE</td>
<td>7.7%</td>
<td>0.0%</td>
<td>7.7%</td>
<td>7.7%</td>
<td>7.7%</td>
<td>69.2%</td>
<td>0.0%</td>
</tr>
<tr>
<td>POST</td>
<td>22.2%</td>
<td>11.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>22.2%</td>
<td>33.3%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

The Pain Medications Worked Well to Control My Pain

<table>
<thead>
<tr>
<th></th>
<th>% Strongly Disagree</th>
<th>% Moderately Disagree</th>
<th>% Slightly Disagree</th>
<th>% Slightly Agree</th>
<th>% Moderately Agree</th>
<th>% Strongly Agree</th>
<th>% Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE</td>
<td>14.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>21.4%</td>
<td>7.1%</td>
<td>57.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>POST</td>
<td>0.0%</td>
<td>11.1%</td>
<td>0.0%</td>
<td>33.3%</td>
<td>0.0%</td>
<td>44.4%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

Benchmark Comparison:
- Pre – Above
- Post – Below
Results: Patient Survey

My Healthcare Team Involved Me in the Decisions About Controlling My Pain

<table>
<thead>
<tr>
<th></th>
<th>% Strongly Disagree</th>
<th>% Moderately Disagree</th>
<th>% Slightly Disagree</th>
<th>% Slightly Agree</th>
<th>% Moderately Agree</th>
<th>% Strongly Agree</th>
<th>% Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE</td>
<td>7.1%</td>
<td>7.1%</td>
<td>0.0%</td>
<td>7.1%</td>
<td>0.0%</td>
<td>78.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>POST</td>
<td>22.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>11.1%</td>
<td>11.1%</td>
<td>44.4%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

Benchmark Comparison:
- Pre – Significantly Above
- Post – Slightly Below

Reasons for Admission to the Hospital

<table>
<thead>
<tr>
<th>Reason</th>
<th>Axis Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Diagnosis of new condition or being worked up for a new problem</td>
<td>29%</td>
</tr>
<tr>
<td>% Treatment of a disease</td>
<td>21%</td>
</tr>
<tr>
<td>% Surgery</td>
<td>0%</td>
</tr>
<tr>
<td>% Procedures</td>
<td>0%</td>
</tr>
<tr>
<td>% Supportive care management of symptoms or complications</td>
<td>7%</td>
</tr>
<tr>
<td>% Childbirth</td>
<td>0%</td>
</tr>
<tr>
<td>% Other</td>
<td>79%</td>
</tr>
</tbody>
</table>
Results: Patient Survey

Patients' Perception of Cause of Pain

Benchmark Comparison:
• Pre – Slightly Below
• Post – Slightly Above
Results: The Staff Survey

- Survey consisted of:
  - Test Questions
  - Multiple Choice
  - True/False
  - Yes/No Opinions
- # of Nurses Surveyed:
  - Pre – N=24
  - Post – N= 23
- Red denotes correct answer

<table>
<thead>
<tr>
<th>Staff Description of beliefs about gender and pain distress</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men have greater distress related to their pain than do women.</td>
<td>29.2%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Women have greater distress related to their pain than do men</td>
<td>0.0%</td>
<td>13.0%</td>
</tr>
<tr>
<td>There are generally no differences in pain distress between men and women</td>
<td>70.8%</td>
<td>73.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Staff perception of how gender influences willingness to report pain</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men tend to be stoic and under-report their pain more so than women</td>
<td>16.7%</td>
<td>27.3%</td>
</tr>
<tr>
<td>Women tend to be stoic and under-report their pain more so than men</td>
<td>8.3%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Neither of the above</td>
<td>75.0%</td>
<td>63.7%</td>
</tr>
</tbody>
</table>
Results: The Staff Survey

Staff perception of maximum, tolerated narcotic analgesic therapy for treatment of severe cancer pain recommendation

<table>
<thead>
<tr>
<th>Prognosis</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prognosis of less than 24 months</td>
<td>4.3%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Prognosis of less than 18 months</td>
<td>0.0%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Prognosis of less than 6-12 months</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Prognosis of less than 3-6 months</td>
<td>0.0%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Prognosis of less than 1 month</td>
<td>4.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Prognosis of less than 1 week</td>
<td>0.0%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Anytime regardless of prognosis</td>
<td>91.3%</td>
<td>78.3%</td>
</tr>
</tbody>
</table>

Staff perception of the most likely explanation for why a terminal cancer patient with chronic pain would request increased doses of pain medications is:

<table>
<thead>
<tr>
<th>Explanation</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>The patient is experiencing increased pain</td>
<td>91.3%</td>
<td>95.7%</td>
</tr>
<tr>
<td>The patient is experiencing increased anxiety or depression</td>
<td>8.7%</td>
<td>4.3%</td>
</tr>
<tr>
<td>The patient is requesting more staff attention</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>The patient’s requests are related to addiction</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Observable changes in vital signs or behavioral expressions of pain will be present if the patient has severe pain:

<table>
<thead>
<tr>
<th>Explanation</th>
<th>% of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain intensity should be rated by the nurse, not the patient</td>
<td>100.0%</td>
</tr>
<tr>
<td>If the patient can be distracted from his pain this usually means he does not have as high an intensity of pain as he indicates:</td>
<td>91.7%</td>
</tr>
<tr>
<td>Patients may sleep in spite of severe pain:</td>
<td>66.7%</td>
</tr>
</tbody>
</table>

Familiarity with alternative pain management interventions

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarity with alternative pain management interventions</td>
<td>95.7%</td>
<td>95.5%</td>
</tr>
<tr>
<td>Familiarity with hand massage to reduce a patient’s pain</td>
<td>16.7%</td>
<td>27.3%</td>
</tr>
<tr>
<td>If yes, patient indication of decreased pain</td>
<td>50.0%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Arranged for a pet visit in order to reduce a patient’s pain</td>
<td>0.0%</td>
<td>40.9%</td>
</tr>
<tr>
<td>If yes, did the patient indicate the therapy decreased their pain</td>
<td>0.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Routine discussion of the patient’s pain management plan of care with the patient</td>
<td>95.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Providing patient education on pain management helps to improve the patient’s pain</td>
<td>91.3%</td>
<td>90.9%</td>
</tr>
</tbody>
</table>
Pain Order Set Comments:

- Total 197 patients received Pain Order Set from June to December 2011
- Providers:
  - “This does not fit every patient’s needs”
  - “It’s early in the process, so it is sometimes hard to know which to use, but it gives you a lot of choices”
- RN’s:
  - “I don’t have to call the Dr. as much and my patient gets their pain medicine faster”
  - “It gives me options. If the first medication doesn’t work, then I can move to something else right away”
- This needs further analysis
Pet Therapy:

- Total of 62 patients seen
- Total of 8 days approximately 2 hours per day (once a week for 2 months)
- Pain scores did not significantly change after the visits
- The effects were seen and heard from patients AND staff
Sue: “I overheard many nurses ask their patients what they thought of Coppers visit- many of them really enjoyed it and said it helped their pain and made their day brighter- many asked if he was coming back soon.”

This patient was in hospital for a long time due to need for IV antibiotics. Copper accompanied her on her daily walk around the unit. She held his leash as she pushed her IV pole around- She said, “it was nice to have such a nice dog to keep her company on her walk. She would be in the hospital for a few weeks and would like to visit with Copper again”.

Chronic pain pt- always requesting dilaudid. RN’s skeptical about whether pet therapy would be ok with her. Patient use to be a Vet Tech and has not been able to keep that job since she got sick – Copper and I were in there for 40 minutes while she looked in his ears, teeth – massaged him and brushed him- At one point she got on the ground with him- She states “He helped me more than you know”.

Spanish Speaking only female in the room with her husband and her 1 year old little boy was drawn to copper – pointing to his eyes, nose, teeth. The pain relief came when she saw her little boy relaxed and playing. The boy kissed Copper on the nose and said “bye dog”.

30 year old female- Traumatic brain injury – Physical Therapy invited us in to help patient focus on reaching with her injured hand- She was amazed by Copper and just wanted to pet him – PT was able to redirect her to pick up her injured hand and place it on his head- She wore a Craini helmet which could of scared Copper but it did not – She kissed him good bye and waved bye using her good hand to wave with her injured hand- Her mother was in the room and was so happy to see her interactive

A very pleasant young female- She saw Copper from the door- way and yelled out- “A dog- Come here!” She welcomed us immediately- She loved on him saying that he made her smile and that made her happy after being hospitalized after a few days- She wanted me to leave him with her for a “Sleep Over”

A non-English speaking man – comfort care. RN’s concerned he would not understand pet therapy because of his language barrier. We walked in and he said in English “DOG” and attempted to get up to visit with Copper. He sat on the edge of the bed and pet Copper not saying a word for 10 minutes. He hugged him good-bye and said “Thank You”
Conclusions / Lessons Learned:

- Small Ns for the study
- Need more frequent data collection
- Target data collection to specific interventions with pointed objectives
- Patients in severe pain (constantly) decreased, relief from pain medication increased, average pain score of 10 in last 24 hours decreased
- Pain Order Set in early stage, positive direction so far
- Continuing education for Patients, RNs, and Providers
- Pet Therapy has benefits for both patients and staff
Future Direction

• Access to the Pain Toolkit
• RPE for Pain Management at Denver Health
• Upgrading Physician Ordering System
• Planning video for the inpatient channel
• Include in care planning conversation with the patient
  - Realistic patient goals
  - Should we use the 1-10 scale?
  - Discuss options with the patient
• Continue to utilize Pet Therapy
• Future projects/data collection/further research
Questions?

Thank you for your attention