USING A VALIDATED TOOL TO ASSESS OPPORTUNITIES FOR PAIN MANAGEMENT QUALITY IMPROVEMENT

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Objectives

➢ Describe the importance of utilizing a validated quality improvement tool to assess your institution’s pain management opportunities
➢ Explain the six aspects of pain management quality care as measured by the American Pain Society Patient Outcomes Questionnaire Revised (APS-POQ-R).
➢ Discuss strategies to utilize data obtained from the APS-POQ-R to improve your institution’s specific opportunities for pain care quality improvement & patient satisfaction.

What is Quality Improvement Anyway?

➢ A combination of methods adapted from psychology, statistics, and operations research to identify factors that contribute to poor treatment outcomes and to design solutions for improvement. (Gordon et. al, 2010)
  • Need to explore a deeper understanding of a problem/concept
  • Is there a problem in the first place?
  • Is there motivation for change?
  • If a problem is identified, can we measure if a change has occurred after an intervention?
What is Quality Pain Management?

- Appropriate assessment (routine screening, comprehensive initial assessment, and frequent reassessments)
- Interdisciplinary, collaborative care planning that includes patient input
- Appropriate treatment that is efficacious, cost conscious, culturally and developmentally appropriate and safe
- Access to specialty care as needed

(Gordon et al., 2005)

Quality of Care

- Structure
  - Guiding principles for the organization
  - Policies, procedures, clinical guidelines, standards of care, clinical resources available
- Process
  - Activities that take place in patient care
  - Assessing, documenting and evaluating pain care
- Outcome
  - The endpoint of the care process
  - Pain severity, ability to meet functional goal, presence of side effects, patient satisfaction


Research VS Quality Improvement

- Research
  - Usually defined & evaluated by how strictly populations & variables are controlled and defined
  - Include random controlled trials
  - Translation to “routine care” and future situations limited due to the specific population or setting in which the research was conducted
- Quality Improvement
  - Data collected to understand a problem or process.
  - Identification of specific measurable attributes
  - Attributes must be clearly defined in order to be measured and evaluated
  - There must be motivation for change

(Gordon & Dahl, 2004; Messmer, et al., 2008)
Evolution of the APS-POQ

1991
• American Pain Society (APS) publishes the 1st Pain Outcomes Questionnaire (POQ)

1995
• APS QA standards revised & published as QI guidelines
• Core QI indicators changed
• APS-POQ also updated
• Updates based on published reports & clinical experiences with the 1991 questionnaire

2005
• APS revises and expands 1995 QI guidelines
• Based on systematic review of 20 QI studies utilizing 1995 POQ
• Recommendations for systematic changes & how pain QI outcomes are measured
• 5 new QI indicators emerged

(Gordon et al., 2010)

2005 APS Recommendations

1. Recognize and treat pain promptly
2. Involve patients in the pain management plan
3. Improve treatment patterns
4. Reassess & adjust the pain management plan as needed
5. Monitor processes & outcomes of pain management

Include pain management performance measures

(Gordon & Dahl et al., 2005)

2005 APS Recommendations

➢ A structured approach to assess current practice is the first step to guide QI initiatives
➢ Assessing and documenting pain care is only the beginning
➢ Must use evidenced based practice & include the patient in developing the treatment plan

(Gordon et al., 2005)
Progression of Pain Quality Improvement (QI)

- Initiatives focused on structure and processes
  - Developing/implementing sound policies & procedures (P&P)
  - Implementing Pain Management Committees or Acute Pain Teams
  - Documentation audits & compliance with P&Ps to assure proper assessment is occurring

- Move to evaluating treatment strategies & their effect on patient outcomes
  - How pain interventions affect patient’s ability to function
  - Do interventions contribute to incidence of side effects?
  - Does frequency of pain documentation affect intensity of pain reported?

APS 2005 Guidelines
5 Aspects of Pain Quality

- Pain severity (pain)
- Interference with function (activities)
- Affective experiences (emotional)
- Side effects (safety)
- Perceptions of care (satisfaction)

(Gordon et al., 2010)

The Revised APS-POQ-R

- New questions incorporated significant modifications suggested after 10 years of national use (Gordon et al., 2002)
  - Emotional interference items
  - Use and encouragement of non-drug interventions
  - Adequacy of information received about options
  - Ability to participate in decision-making

- Administer the instrument to a variety of patient populations
- Complete psychometric testing
- Determine relationships among items and subscales and variables that might predict patient outcomes

(Gordon et al., 2010)
Development of the APS-POQ-R Questions

- **Pain Severity**
  - “Pain now” deleted
  - Changed to “Least” and “Worst” pain
  - “Average pain” changed to “percent time in severe pain”

- **Pain Relief**
  - % of pain relief added

(Gordon et al., 2010)

Development of the APS-POQ-R Questions

- **Side Effects**
  - New items added to address nausea, drowsiness, itching and dizziness

- **Pain Interference Scales for Physical & Emotional Function**
  - Items changed to include activities common to inpatients
  - Interference with activity
  - Interference with affect/mood

(Gordon et al., 2010)

Goals for the Revised Instrument: Ease of Use!

- Easy for clinicians to administer
- Easy for patients to understand
- Easy to score
- Easy for healthcare providers to evaluate the quality of pain care in their organization
- Easy to determine which processes need to be changed to improve patient outcomes

(Gordon et al., 2010)
Psychometric Testing

Validity
- Ability of instrument to measure what it is intended to measure
  - Face
  - Content
  - Concurrent (criterion)
  - Predictive (criterion)
  - Construct

Reliability
- Degree to which an instrument measures the same construct the same way each time it is used under the same conditions
  - Internal consistency
  - Test/retest for recall bias
  - Inter-rater reliability

Validity
- Face
- Content
- Concurrent (criterion)
- Predictive (criterion)
- Construct

Exploratory Principal Components Factor Analysis
- Item-to-item intercorrelations, item-to-subscale correlations for internal consistency reliability
- Varimax and oblique rotations were performed and supported item reductions
- Revealed 5 important subscales:
  - Affective (anxious, depressed, frightened, helpless)
  - Pain Severity and Sleep Interference
  - Interference with activity
  - Adverse Effects
  - Perceptions of Pain Care
- Overall Cronbach alpha for revised item set was 0.86

(Gordon et al., 2010)

Validation testing at Central DuPage Hospital (CDH)
- IRB approval obtained
- Approved by Orthopaedic medical staff
- Approved by Orthopaedic nurse manager
- Recruitment of key personnel
- Identification of key stakeholders
- Goal: to collect data on at least 100 patients
Methods: Eligibility/Procedure

- ≥ 18 years of age
- English speaking
- Alert enough to respond
- Asked to participate within 72 hours of admission or surgery and surveyed about the first 24 hours of pain care
- Letter of information provided some assurance of privacy
- Survey items read aloud to avoid literacy issues
- Medical records were audited for analgesics & antiemetics received

CDH Sample

- N = 108
- Age mean = 62.59 SD 8.75
- Female 59.3% (64)
- Majority total joint replacements
- 10 patients re-interviewed at 48hrs

CDH Results

- Avg “least pain” 2.12/10 (+/- 2.19)
- Avg “worst pain” 6.79/10 (+/- 2.67)
- Avg % Time in “severe pain” 22% (+/- 21.62)
- Side effects (0 = none to 10 = severe)
  - Nausea 32% incidence; avg rating 5.5
  - Drowsiness 75% incidence; avg rating 5.68
  - Itching 45% incidence; avg rating 4.64
  - Dizziness 49% incidence; avg rating 3.63
CDH Results

- Mean morphine equivalence 32.77mg (range 0–170mg)
- Pain relief received from all interventions
  - Average 75%
- Were you allowed to participate in decisions about your pain treatment as much as you wanted?
  (0—not at all to 10—very much so)
  - 8.27/10 (+/- 3.01)
- Satisfaction with results of pain treatment
  (0—extremely dissatisfied to 10—extremely satisfied)
  - 8.71/10 (+/- 1.81)

CDH Results

- Did you receive information about pain treatment options?
  - 72.2% yes (78/108)
- Use of non–pharmacologic interventions for pain
  - 76% said they used cold packs, distraction, deep breathing, prayer, relaxation
  - How often did nurse or doctor encourage use:
    - 54.6% never
    - 30.6% sometimes
    - 12% often

Summary/Conclusions/Opportunities

- CDH patients very satisfied with pain treatment (8.71/10)
- Overall pain did not significantly interfere with patient’s ability to perform activities in/out of bed or with sleep
- Non–pharmacologic methods used by 76% of patients but not encouraged by RNS/MDs
Summary/Conclusions/Opportunities

Significant predictors of satisfaction were:
• Higher pain relief (CDH 76%)*
• Less time spent in severe pain (mean 22%)
• Greater participation in pain treatment (8.3/10)

Lower severity for adverse effects
• 32% with moderate nausea (5.5/10)†
• 75% with moderate drowsiness (5.68/10)
• 45% with moderate itching (4.64/10)
• 49% with mild dizziness (3.63/10)

*pos correlation
† neg correlation

2010 Validation of the APS-POQ-R

N = 529
September 2009 thru February 2011
7 hospitals
• Midwest and South-Atlantic
• 2 academic, 5 community
• Bedsize 71 to 708
Convenience sampling of adult inpatients
IRB expedited review/waiver of consent
All procedures in accordance with HIPPA regulations and institutions protections for human subjects

Results: Sample Characteristics

<table>
<thead>
<tr>
<th>Category</th>
<th>Count (%)</th>
</tr>
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<tbody>
<tr>
<td>Sex</td>
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<tr>
<td>Male</td>
<td>220 (41.7%)</td>
</tr>
<tr>
<td>Female</td>
<td>307 (58.3%)</td>
</tr>
<tr>
<td>Missing</td>
<td>2 (0.4%)</td>
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<tr>
<td>Diagnosis</td>
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<tr>
<td>Medical cancer</td>
<td>25 (4.6%)</td>
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<tr>
<td>Medical noncancer</td>
<td>168 (31.7%)</td>
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<tr>
<td>Surgical cancer</td>
<td>12 (2.7%)</td>
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<tr>
<td>Surgical noncancer</td>
<td>241 (45%)</td>
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<tr>
<td>Ethnicity</td>
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<tr>
<td>Caucasian</td>
<td>467 (90.8%)</td>
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<tr>
<td>Hispanic</td>
<td>7 (1.3%)</td>
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<tr>
<td>African-American</td>
<td>42 (8.1%)</td>
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<tr>
<td>Asian</td>
<td>4 (0.8%)</td>
</tr>
<tr>
<td>Missing</td>
<td>9 (1.7%)</td>
</tr>
</tbody>
</table>
Results: Comparisons of Medical vs. Surgical Patients

- Medical patients had higher worst pain (P<0.001) and reported greater time spent in severe pain (P<0.001)
- Medical patients also reported a lower percent of pain relief (P<0.001) and lower scores for being allowed to participate in their pain care (P<0.001)
- There was no difference between the groups for satisfaction with their pain treatment (P=0.512)

Validation Summary

- Neither age nor gender predicted levels of satisfaction
- Significant predictors for satisfaction were:
  - Higher pain relief (P<.001)
  - Less time spent in severe pain (P=.03)
  - Greater participation in pain treatment (P<.001)
  - Lower severity for adverse effects (measured by the total sum of the 4 adverse effects to obtain a severity level) (P=.004)
- Together these four variables explained 28.9% of the variance in the satisfaction outcome

Validation Summary: Limitations

- Voluntary, convenience sample at limited number of sites
- Majority Caucasian, all English speaking
- Did not include the very ill
- May not be applicable to pediatrics, outpatient or emergency department settings
- Question of whether patients were reporting on acute or chronic pain (and does it matter?)
- Difficult to apply usual psychometrics for instrument testing given that multi-dimensional aspects of quality were measured

(Gordon et al., 2012) Clarify citation with Deb
Validation Summary: Conclusions

- Additional support for construct validity
- Consistent findings with previous study
- More research is needed in this and other samples
- Four factors explained 59.2% of variance
  - Pain severity & interference
  - Affective component
  - Adverse Effects
  - Perceptions of Care

(Adapted from Gordon et al., 2012)

Validation Summary: Conclusions

- Psychometric properties are adequate & similar to others used in pain studies
- Re-test stability concerns
- The APS-POQ-R is a practical instrument for QI that measures 6 important aspects of quality
  1. Pain severity and relief
  2. Impact of pain on activity, sleep and negative emotions
  3. Side effects of treatment
  4. Helpfulness of information about pain treatment
  5. Ability to participate in pain treatment decisions
  6. Use of non-pharmacological strategies

(Adapted from Gordon et al., 2012)

Utilization of Results

- Communicate results to team/unit
- Form a pain QI team
- Identify the problem or aim
  - Drill down potential causes
    - Flow charts: MAR, assessment documentation
    - Pain FEMA
  - Collect more data, staff interviews, K&A survey
  - Review EBP and research
- Set and prioritize goals

NDNQI ® Reports Online Training Summary, 2012
Process Improvement

- Develop specific to problem/aim
- Determine strategy to impact problem/aim
- Inservices, posters, scenarios
- Benchmark

Plan

Do

Act

Check

NDNQI® Reports Online Training Summary, 2012

- Implement changes
- Educate staff
- Start small
- Involve physicians
- Involve unit leadership
- Look out for pitfalls

- Monitor compliance with interventions
- Re-survey patients if needed

Mental health interventions
- Re-survey patients if needed

NDNQI® Reports Online Training Summary, 2012
Conclusions

- Evaluation of the subjective pain experience is a complex phenomenon
- Obtaining direct feedback from patients is key
- Utilizing a validated tool to evaluate opportunities for improvement in pain QI can be beneficial at the unit, organizational or national level
- The APS-POQ-R has been shown to be a practical instrument with adequate psychometrics to measure six aspects of pain QI

Conclusions

- Easy for clinicians to administer
- Easy for patients to understand
- Easy to score
- Easy for healthcare providers to evaluate the quality of pain care in their organization
- Easy to determine which processes need to be changed to improve patient outcomes
Acknowledgements

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  • Martine Fletcher
  • Marilyn Kreda
  • Karen Morrow

References

Retrieved from: www.archinteromed.com
Development of the APS-POQ-R

- Participation in Decision-Making
  - New item asking how much patients participated in decisions

- Patient Satisfaction
  - Changed from perceived "wait time" for pain meds & satisfaction with staff to satisfaction with overall treatment results

- Use of Nonpharmacologic Interventions
  - New items to assess patient’s use
  - Plus inquiry if nurses or doctors encouraged use

Gordon, DB., et al., 2010