Using Qstream, a novel, online learning module, to improve Australian palliative care nurses’ pain assessment competencies and patients’ reports of pain: results from a quasi-experimental pilot study.

Phillips, J.L., Heneka, N., Hickman, L., Lam, L. and Shaw, T.
Pain is a common problem experienced by people requiring palliative care.
# Consumer Perspective

<table>
<thead>
<tr>
<th>Pain last 3 days</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>No not at all, no effect</td>
<td>4%</td>
</tr>
<tr>
<td>Slightly – but not bothered to be rid of it</td>
<td>10%</td>
</tr>
<tr>
<td>Moderately – pain limits some activity</td>
<td>41%</td>
</tr>
<tr>
<td>Severely – activities or concentration markedly affected</td>
<td>41%</td>
</tr>
<tr>
<td>Overwhelming – unable to think of anything else</td>
<td>4%</td>
</tr>
</tbody>
</table>
The Gap

- Initiating site:
  - Patients’ reported higher moderate to severe pain intensity scores than the national average (82% vs. 62%)

  - Chart audit 2010 – end of life care (n=60) only 9% had documented evidence of a pain assessment conducted during last 72 hours of life
Clinical Problem

• Problem
  – Little evidence of routine pain screening and assessment practices – palliative care nurses

• Pain management
  – Continuous cycle of screening, assessment, management and reassessment

• Few interventions
  – Focussed exclusively on enhancing pain assessment practices
Study overview

Aim

- To test the acceptability, feasibility and impact of a novel focused on-line learning module using Qstream© on pain assessment knowledge and practice

Methods

- Pre-post test quasi-experimental study design

Participants

- Australian specialist palliative care nurses (n=34)

Intervention

- Qstream – a tailored on-line learning module (pain assessment)
• Evidence:
  – Positive outcomes in 12 clinical trials

• Built around two evidence-based theories:
  – The testing effect
  – The spacing effect

• A suite of realistic, complex case-based learning scenarios reflecting clinical decision making and practices
Question from "Palliative Care"

Joseph Miller, a 69 year old man has been brought in by ambulance, from home for symptom control of metastatic renal cell carcinoma. He is grimacing and calling out in pain when the ambulance officers transfer him onto his bed. His wife, Anna, asks if he could have something to settle his pain. She is concerned as Joseph was unable to take his morning OxyContin tablets as he was vomiting.

Which of the following is the first correct action in this situation?

Choose all that apply

- Treat Joseph’s pain and phone the resident doctor.
- Treat Joseph’s pain and communicate this with the team leader.
- Treat Joseph’s pain and orientate him to the ward.
- Treat Joseph’s pain after completing a comprehensive pain assessment

Submit
### Explanation

#### Take Home Message:
It is important to recognise and treat all patients’ pain promptly. But not before you have undertaken a comprehensive pain assessment so that you can adequately describe the characteristics of the patient’s pain.\(^1\)

#### Consequences
In this scenario the action described in options a, b and d all need to be addressed when Joseph is found to have pain. However, the first step in treating pain promptly is to complete a comprehensive pain assessment. This assessment includes asking Joseph about the location and quality of his pain, if there are any aggravating and alleviating factors, and the effectiveness of any previous analgesics or non-pharmacological treatments.

If you treat Joseph’s pain without conducting a comprehensive pain assessment it could compromise his diagnosis, and the development of the most effective treatment and pain management plans.\(^1,2\) Failure to assess appropriately could amplify the impact of pain on Joseph’s physical and emotional function and increase the amount of analgesia he needs in the long term.\(^1,2\)

#### References:
Methods

Pre-post test quasi-experimental study design

**Time 1 (T1):**
- Survey
- Chart Audit
- Pain Scores

**Time 2 (T2):**
- Survey
- Chart Audit
- Pain Scores

**Time 3 (T3):**
- Survey
- Chart Audit
- Pain Scores

**Time 4 (T4):**
- Survey
- Chart Audit
- Pain Scores

T1 = Baseline Intervention
T2 = Week 6
T3 = Week 10
T4 = Week 16

**Intervention:**
- QStream© Pain Assessment Module
  (completed over 28 days)
Data Collection

• Self-Perceived Pain Assessment Capabilities (Self-PAC) Survey (17 items)
  – Pain assessment knowledge (7 items)
  – Pain assessment tools (3 items)
  – Pain assessment confidence (7 items)

• Chart audit
  – Designed to capture pain assessment practices
  – Patient reported pain scores – Numerical Rating Scale (NRS)
Results

Study Sample - Nurses

- Potential sample: (N= 103)
- T1 (n=74) Baseline
- T2 (n=34) Week 6
- T3 (n=18) Week 10
- T4 (n=16) Week 16

Demographics

- Age 43 years (median)
- 94% Female
- 88% Registered Nurses

Differences in participants and non participants

- Years working at site
  - \( \leq 5 \text{ years (57\%)} \) \( p = 0.03 \)
# Self-PAC Survey: Results

<table>
<thead>
<tr>
<th>Pain Assessment Domains</th>
<th>Time 1 (n=34)</th>
<th>Time 2 (n=34)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (+SD)</td>
<td>Mean (+SD)</td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>7.1 (1.7)</td>
<td>8.38 (1.0)</td>
<td>0.001</td>
</tr>
<tr>
<td>Assessment tool awareness</td>
<td>3.14 (2.09)</td>
<td>6.30 (5.8)</td>
<td>0.007</td>
</tr>
<tr>
<td>Confidence</td>
<td>7.40 (1.63)</td>
<td>9.30 (3.5)</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Paired sample t-test
## Demographics Chart Audit

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>N=60 (%)</th>
<th>T2</th>
<th>N=60 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (median)</td>
<td>74 years</td>
<td></td>
<td>74.5 years</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>23 (38%)</td>
<td></td>
<td>34 (57%)</td>
<td></td>
</tr>
<tr>
<td>Primary Cancer Diagnosis</td>
<td>53 (88%)</td>
<td></td>
<td>54 (90%)</td>
<td></td>
</tr>
<tr>
<td>Admission for pain control</td>
<td>23 (39%)</td>
<td></td>
<td>20 (33%)</td>
<td></td>
</tr>
<tr>
<td>Length of stay (median)</td>
<td>20 Days</td>
<td></td>
<td>25 Days</td>
<td></td>
</tr>
</tbody>
</table>
## Documented Evidence of Pain Assessment: Chart Audit

<table>
<thead>
<tr>
<th></th>
<th>Time 1 (n=34)</th>
<th>Time 2 (n=34)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>(N%)</td>
<td></td>
</tr>
<tr>
<td>SE Participants</td>
<td>52 (54%)</td>
<td>82 (70%)</td>
<td>0.021</td>
</tr>
<tr>
<td>Non-SE Participants</td>
<td>44 (45%)</td>
<td>36 (31%)</td>
<td>NS</td>
</tr>
</tbody>
</table>

Independent sample t-test
Patient Reported Pain Scores: Chart Audit

- Significant reduction in the mean patient reported pain ratings between the admission and audit date – T2 (M=2.4) compared to T1 (M=3.9) (t=1.51, df=82, p<.0010).

- A 1.5 point reduction in patient reported pain scores (95% C.I.=0.7-2.3) at T2 compared to T1.

Pearson chi-square test
Strengths

• One of the few studies building pain assessment evidence
• Improvements in pain assessment capabilities
• Impacted positively on patient reported pain outcomes
• Scalable intervention applicable to other symptoms and discipline

Limitations

• Pilot
• Single arm study
• Attrition
• Dependent upon IT capabilities
Conclusion

- Qstream© offers the opportunity to deliver specialised clinical content in an on-line format that can change practice.
- Potential to integrate:
  - into other translational research and/or education interventions
  - an Audit and Feedback element
- Further evaluation is required using larger controlled design
Impact of a novel online learning module on specialist palliative care nurses’ pain assessment competencies and patients’ reports of pain: Results from a quasi-experimental pilot study

Jane L Phillips¹,², Nicole Heneka², Louise Hickman³, Lawrence Lam⁴,⁵ and Tim Shaw⁶

Abstract
Thank you

For more information please email: jane.phillips@nd.edu.au