Auditing your acute pain service—a UK NHS model

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Clinical governance; Audit; Quality; Evaluation; Pain team

Summary
This audit has been conducted in order to provide an evidence base that clarifies the strengths and weaknesses of acute pain management at a UK hospital. Consequently, it sets the strategic direction for service improvement. Awarding up to three stars has identified the quality of each component that constitutes the acute pain service. Six different components were audited and star ratings have been awarded as shown below:

- Pain tool (including patient and staff understanding): no stars.
- Pain team (including education and clinical support): two stars.
- Intermittent opioid analgesia (sub-cut and oral morphine): two stars.
- Epidural patient controlled analgesia (EPCA): two stars.
- Intravenous patient controlled analgesia (IVPCA): two stars.
- Single-dose intrathecal opioid analgesia: three stars.

These star ratings were pulled together in order to award the acute pain service an overall rating. Consequently, the acute pain service was awarded two stars. The findings of this audit identify that this acute pain service provides a safe way to deliver hi-tech pain relief at ward level and can be relied upon to provide good quality pain management. However, too many patients are likely to miss out on the full benefits of the service due to the weaknesses as identified. The quality of the pain relief is impeded across the hospital due to low patient expectation and poor patient education, and also due to a lack of relevant knowledge amongst nursing staff. Developments in the role of the acute pain nurse, staff training and education programs, and a reduction in the variety of pain management pumps are combining to facilitate the opportunities required to address the weaknesses and to build on the strengths of the acute pain service.

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1. Background

In the UK, the government has introduced a system for monitoring the quality of the National Health Service (NHS) that it has called clinical governance [1,2]. As part of this monitoring process, NHS organisations are awarded up to three stars, depending on the quality of the services they provide. Clinical governance has been described as "a framework through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish" [3]. Therefore, it was agreed that when conducting...
an audit it would be beneficial to present findings within the clinical governance framework so that the prominence of acute pain issues could be raised.

2. Methodology

Members of the acute pain team identified six components that jointly comprise the acute pain service (see Table 1). Evidence-based standards were then agreed for each of these components [4–9]. Questionnaires were then formulated for each component that would evaluate practice against the agreed standards. The audit department identified that 31 of each questionnaire was necessary in order to provide a representative sample. Staff from surgical and orthopaedic wards were interviewed in order to complete some parts of the audit, but patient interviews and case note reviews, conducted on the third day after surgery provided the majority of the data that was collected. Collected data was entered on to a spreadsheet database and analysed for compliance to the audit standards. In order to present the results in a way that would be meaningful to NHS managers, patients and the general public, as well as clinical staff, a star rating system similar to the clinical governance model was utilised (see Table 2). In this way, measuring improvements to the service is clearly reflected by higher star ratings in subsequent evaluations.

Table 1 Components of the acute pain service

<table>
<thead>
<tr>
<th>Pain tool (including patient and staff understanding)</th>
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</thead>
<tbody>
<tr>
<td>Pain team (including education and clinical support)</td>
</tr>
<tr>
<td>Intermittent opioid analgesia (subcutaneous and oral morphine)</td>
</tr>
<tr>
<td>Epidural patient controlled analgesia</td>
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<tr>
<td>Intravenous patient controlled analgesia</td>
</tr>
<tr>
<td>Single-dose intrathecal opioid analgesia</td>
</tr>
</tbody>
</table>

3. Results

This section should be read in conjunction with Table 3, which presents the star ratings for each component.

3.1. Pain tool

Although staff understood how to assess pain and why they were doing it, their knowledge of the pain tool was poor. Patients, however, had no or little insight into the purpose or the process of pain assessment. Additionally, documentation of pain scores was poor.

3.2. Pain team

The pain team has been able to respond to requests for assistance within acceptable time frames and training for equipment is extensively provided. However, more than one-third of calls made to the pain team were inappropriate (e.g. palliative care referrals) and clinical training for ward staff is inconsistently provided. Additionally, attendance at equipment training is poor for some areas. Evidence about requirements for acute pain team support at evenings and weekends was not returned.

3.3. Intermittent opioid analgesia

The intra-muscular route is predominantly avoided, and the doses of opioids prescribed were encouraging. The incidence of nausea and vomiting was

Table 2 Star ratings

<table>
<thead>
<tr>
<th>Star ratings</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three stars (&gt;85%)</td>
<td>This is done well most of the time. Patients can expect to receive a high standard of care</td>
</tr>
<tr>
<td>Two stars (65–85%)</td>
<td>This is usually done well, but a lot of patients are missing out on potential benefits that could be available</td>
</tr>
<tr>
<td>One star (55 to &lt;65%)</td>
<td>Although things might be done well quite often, too many patients are missing out</td>
</tr>
<tr>
<td>No stars (&lt;55%)</td>
<td>There is little assurance that can be offered to patients that they will receive the standards of care that we are here to provide</td>
</tr>
</tbody>
</table>

Table 3 Star ratings for each component of the acute pain service

<table>
<thead>
<tr>
<th>Component</th>
<th>Star ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain tool</td>
<td>No stars</td>
</tr>
<tr>
<td>Pain team</td>
<td>Two stars</td>
</tr>
<tr>
<td>Intermittent opioid analgesia</td>
<td>Two stars</td>
</tr>
<tr>
<td>Epidural PCA</td>
<td>Two stars</td>
</tr>
<tr>
<td>Intravenous PCA</td>
<td>Two stars</td>
</tr>
<tr>
<td>Single-dose intrathecal opioid analgesia</td>
<td>Three stars</td>
</tr>
</tbody>
</table>
insignificant in this cohort of patients. One-third of patients though, did experience recurrent episodes of significant pain. Forty-two percent had no regular simple analgesics concurrently prescribed, and 32% had a 4 h frequency prescribed. Only one-fifth recalled receiving any preoperative information about how their pain would be managed after surgery.

3.4. Epidural PCA (fentanyl 4 µg/ml in 0.125% bupivacaine at a rate of 0–10 ml/h plus a PCA bolus of 3 ml with a 20 min lock out)

Appropriate epidural catheter placement and the incidence of epidural catheters remaining in place for at least 72 h had improved since a smaller audit the previous year and there were very few mechanical problems with equipment. Incidence of side effects was minimal and there were no infections. Patients had a good understanding of how to use the PCA facility and small improvements in several areas would improve epidural PCA to a three star rating. Preoperative information to patients about epidural PCA was inconsistent and fairly poor both in terms of its incidence and its content. Thirty-five percent of patients did have significant pain (reluctant to cough/move due to pain) and 26% needed either a bolus top-up, or a review requiring further analgesia or a revised epidural regime.

3.5. Intravenous PCA (morphine 1 mg/ml, bolus 1–2 ml, lock out 5 min, no background infusion)

Patients had a good understanding of how to use the PCA facility and received good pain control without recurrent side effects (e.g., nausea and vomiting). Eighty-four percent of patients had regular simple analgesics concurrently prescribed and problems with cannulas and equipment were uncommon. Small improvements would result in a three star IVPCA service. Nineteen percent of patients had incidences of significant pain, and although easily controlled, nausea and vomiting had to be treated in 32% of patients.

3.6. Single-dose intrathecal opioid analgesia (0.1–0.2 mg morphine)

Effective pain relief was provided for 97% of patients in the first 8 h and 84% thereafter with only 6% ever feeling significantly nauseous. The subsequent use of simple analgesics and intermittent opioids maintained this standard in 97% of patients. Only 55% of patients were given any information prior to surgery about this analgesic technique.

4. Discussion

By combining the above results, the pain service as a whole can be evaluated by stating that drug delivery systems provide acceptable standards of pain relief for patients following surgery and that the pain team provides a good level of support to clinical areas. However, patient information, and staff understanding and the utilisation of pain assessment and subsequent documentation are areas of particular concern, as is attendance of staff at training sessions. Improvements can also be made by increasing the use of regular concurrent simple analgesia, and by revising the management of nausea and vomiting.

Priorities for improving the service can easily be identified by referring to the above results. The evidence from this audit assisted in securing funding to standardise equipment for IVPCA. While making the provision of IVPCA safer, the role of the specialist acute pain nurse can be developed and time more efficiently used in providing staff training and patient education, as there is only one type of pump to provide training for. Securing further investment by means of an increased establishment is also being addressed. Managers and commissioners are able to see, in a format that they understand, what the pain service gives back in return for the investment made, how this has improved clinical standards and subsequently strengthen the case for future investment.

5. Conclusion

By approaching service evaluation in this way, the profile of the acute pain service within this hospital has been elevated so that the organisation understands better the value of supporting our initiatives. This has been reflected by the provision of necessary resources. Equally important is how it has improved other clinical staff’s understanding of their part in the management of pain, in that they are more a part of the solution than they are the problem. While placing acute pain issues within the minds of NHS managers, the importance of high clinical standards in this aspect of healthcare begins to be raised amongst ward teams, completing the fuller agenda of clinical governance which seeks to achieve particular shifts in the culture of healthcare within the UK [10, 11].
References