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A prospective audit project into the adequacy of pain assessment in the medical and surgical wards in a North London District General Hospital

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Abstract

Background: Accurate assessment of pain is associated with improved pain management, which can lead to better patient outcomes. It has been recommended that all patients have their pain assessed and the scores documented as the 'fifth vital sign'.

Method: All inpatients in the medical and surgical wards in our hospital were asked directly to score their pain according to the hospital-wide scoring system. Their observation charts and drug charts were then reviewed in order to determine the accuracy of documented pain assessments and the subsequent analgesic management.

Results: Of the 208 patients reviewed, 20 (15%) patients on medical wards and 26 (38%) patients on surgical wards were in moderate to severe pain. Documentation of pain scores was not universal, with 29 (14%) patients having no score documented with their last set of observations. Of those with a score recorded, it was not found to correlate with the scores reported on direct questioning in 41% of medical patients and 71% of surgical patients. Provision of analgesia was also found to differ between medical and surgical wards.

Discussion: The care of pain in the wards falls below the standards set by the Royal College of Anaesthetists. It is necessary to undertake a programme of education to increase awareness of the problem and to improve assessment and management to enhance the patient experience.

Keywords

Acute pain, pain postoperative, pain, pain management, pain measurement.

The relief of suffering associated with acute pain is
first and foremost a humanitarian matter

DN James¹

Introduction

In 1996, Dr James Campbell, President of the American Pain Society, highlighted the importance of recognising and treating pain in his presidential address. He stated that 'If pain were assessed with the same zeal as other vital signs are, it would have a much better chance of being treated properly'.² Following this, the Joint Commission on Accreditation of

Healthcare Organisations (JCAHO) developed guidelines in conjunction with numerous health-care providers, including the American Pain Society. Key aspects of these standards included recognition of the right of patients to have their pain assessed to determine the intensity and quality, with regular reassessment to facilitate appropriate management and

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follow-up. They state that pain should be assessed in all patients, and as it is subjective, the patient's self-report is the most reliable indicator of pain.³ Underassessment of pain has been found to be a significant cause of inadequate pain management.⁴ A working party with worldwide backing and led by the Australian and New Zealand College of Anaesthetists (ANZCA) and its Faculty of Pain Medicine (FPM) reviewed the evidence available and agreed that regular assessment of pain leads to improved acute pain management. They found that reliable and accurate assessment of acute pain is necessary to ensure that patients experience safe, effective and individualised pain management.⁵ Karlsten et al. found that regular documentation enforces some kind of action, and this subsequent management was found to lead to improvements in patient satisfaction.^{6,7} Anwar-ul-Huda et al. also agreed that 'early, accurate recognition and assessment of a patient's pain is the most important aspect of effective acute pain management'.⁸ They also found that on surgical wards, the presence of an 'acute pain service' (APS) led to better pain assessment, reassessment, documentation and patient satisfaction.⁸

In the United Kingdom, the notion of a multidisciplinary acute pain management service was introduced in the early 1990s, following the discussions of a working party formed from the Royal College of Surgeons and the Royal College of Anaesthetists.¹ The Royal College of Anaesthetists published updated 'Audit Recipes' in 2012, including one titled 'Efficacy of Acute Pain Management', which recognises that 'effective pain control relies on recognition of an analgesic need by regular assessment'. They recommend that pain assessment should be documented with every pulse and blood pressure recording.⁹

Pain is not limited to surgical patients, and unsurprisingly, Dix et al.¹⁰ found that 'patients in all hospital specialties experience pain'. They concluded that the issue of pain management in medical patients needs to be fully addressed in order to improve the situation.¹⁰ A number of more recent studies have also found that pain in medical wards is under-recognised and undertreated, with effective pain management still posing a real problem.^{11,12}

However, simply having a pain score documented is not sufficient, as approximately one-third of the patients' and nurses' pain reports have been found to be incongruent. Since the administration of analgesia appears to be determined by the documented pain score rather than what the patient reports, it is vital that accurate records are kept in order to ensure effective treatment.¹³

Aim

To determine the prevalence of pain experienced by patients in our hospital. This is to include the total

number of patients in pain, the accuracy of documentation on observation charts and the analgesic plans made as a result.

Objectives

1. Obtain current pain scores from adult inpatients by direct questioning;
2. Compare observed pain scores with recorded scores on the observation charts;
3. In patients complaining of pain, determine the presence of a plan for pain control.

Method

A standardised data collection form was produced (Appendix 1) to collect data from all current inpatients in the medical and surgical wards during the study time frame. The audit plan was approved by the hospital audit committee with no requirement for ethics approval, supported by guidance obtained from the Medical Research Council and National Health Service (NHS) Health Research Authority joint online tool.¹⁴

The hospital has a total of 360 inpatient beds and forms part of a trust serving around 440,000 people in the local area. Surgical specialties include gastrointestinal and bariatric surgery, gynaecology, urology, breast and orthopaedics. There is no onsite provision for major ENT, vascular, cardiothoracics or neurosurgery. The hospital caters to all major medical specialties and includes a large population of patients with haemoglobinopathies. The hospital is currently served by an APS that is staffed between 08:00 and 18:00 Monday to Friday by a team of three part-time specialist nurses equating to two full-time positions. They are a mixture of bands 6 and 7, of which some are able to prescribe. There is a consultant ward round twice a week. Out of hours, the service is covered by the on-call anaesthetist. Referrals are accepted by the pain service from all hospital departments; however, at present, the team only routinely visits surgical wards.

Paediatric inpatients were excluded as they have a separate method of recording pain assessments that does not include a numerical rating on the standard observation charts. Patients in the intensive care unit and obstetric wards were also excluded as they are assessed and followed up using different documentation methods. Over the course of three sessions (20, 25 and 28 March 2013), data were collected from the identified patient groups. The data were then manually entered into an Excel spreadsheet and descriptively analysed using percentages.

Every inpatient was asked to rate their current pain using the numerical rating score (0–3) from the

Table 1. Pain scoring tool.

Score	0	1	2	3
Pain	None	Mild	Moderate	Severe

Table 2. Demographic data.

Specialty	Male	Female	Total	Age mean [range]
Surgical	24	45	69	60 [20–93]
Medical	69	66	135	72 [23–101]
Total	93	111	204	68 [20–101]

observation charts, as shown in Table 1. This score demonstrates pain at rest, as none of the patients were currently active at the time of questioning. This table includes data from all inpatients at the time of the study, excluding only four patients who were unable to provide a numerical score either due to severe dementia or a language barrier.

This directly obtained pain score was then compared to the observation chart recordings. If a patient complained of being in pain, their drug chart and notes were reviewed to determine what action was taken and what analgesic plan had been made by the team in charge of their care. If it was necessary to intervene due to inadequate pain control, this was also recorded. An intervention was either undertaken immediately in the ward or advice was given to contact the APS.

Results

In total, 204 patients were questioned over the course of the three sessions, of which 135 were in medical wards and 69 were in surgical wards. This reflects the total inpatient population at the time minus the four patients excluded as described in the methods section. Table 2 shows the demographic data of those patients and their ward locations.

Pain scores

In total, 15% ($n = 135$) of medical patients were in moderate to severe pain compared with 38% ($n = 69$) of surgical patients. A total of 98 patients reported no pain both on direct questioning and in the documentation (Figure 1).

Documentation

Across both medical and surgical wards, 14% ($n = 204$) of patients did not have a pain score documented with their most recent set of observations. In all, 18 of these patients were on medical wards and 10 in the surgical wards. Of the 176 patients for whom a pain

Figure 1. Graph showing pain scores. **Figure 2.** Documentation.

score was documented, it was in agreement with the observed pain score in 71% ($n = 117$) of cases in the medical wards and 27% ($n = 59$) of cases in the surgical wards. Of the 86 patients who reported any degree of pain, the documentation and questioning only agreed for 2 patients in the medical wards and none in the surgical wards (Figures 2–4).

Provision of pain relief

Of those patients experiencing pain, more analgesic options were prescribed in the surgical wards rather than the medical wards. The types and regularity of analgesia provision are shown in Table 3. It was necessary to intervene during the audit to manage pain in five cases of moderate to severe pain in the medical wards and two similar cases in the surgical wards. Interventions involved advising the medical teams on more effective analgesic regimens or recommendation to refer to the APS.

In the surgical wards, four of the patients in moderate or severe pain (15%) were under review by the APS. They also reviewed eight of the other patients in the surgical wards, all of whom scored 0 or 1 on the

Figure 3. Pain score agreement overall.

Figure 4. Pain score agreement when score ≥ 1 .

Table 3. Analgesia provision for patients in moderate to severe pain.

Analgesia	Medical (n = 20) (%)	Surgical (n = 26) (%)
Regular paracetamol	50	92
Regular NSAIDs	5	19
Regular weak opiate	35	38
Regular strong opiate	10	27
Gabapentin/patches	10	19
PRN strong opiate	25	54
PRN only	30	4
No analgesia	5	4
Intervention required	25	8

NSAIDs: non-steroidal anti-inflammatory drugs ; PRN: pro re nata.

rating scale. They were not reviewing any patients in the medical wards at the time of this prospective audit.

Discussion

Moderate to severe pain was experienced by one-third of surgical patients and almost one in every six

medical patients during this prospective audit. This is far higher than the 5% upper limit of prevalence of isolated moderate-to-severe pain episodes recommended by the Royal College of Anaesthetists.⁹ The prevalence among medical patients in our hospital is similar to those found by Rockett et al.¹¹ However, patients in our surgical wards appear to report far more pain. We did not record the specific reasons for pain in the patients in our wards, so it is difficult to directly compare the patient groups. Rockett et al.¹¹ found that depression and anxiety were common among patients suffering from pain in both the inpatient and outpatient settings. It would be interesting in future studies to look at the prevalence of psychological disturbance in our patient population.

Chang et al. recently conducted a questionnaire survey into the involvement of APSs in medical wards. From the results of this survey, it is clear that the majority of hospitals in the United Kingdom have no routine APS input in medical wards, as is the case in our hospital. The respondents attributed the suboptimal pain management on medical wards to lack of funding and lack of training.¹² Following an audit carried out in our hospital by the acute pain nurses in 2009, a series of trust-wide study days were initiated. They reported these as being particularly popular among doctors, physiotherapists and midwives. Although our audit differed in design from the one previously carried out, it would appear that the correct use of the numerical pain assessment tool has improved. With 86% of patients now having a numerical score documented compared with just 22% in 2009. Despite this apparent improvement in documentation rates, patients are still reporting unacceptably high levels of pain which appears to be going largely unrecognised. Following presentation of this prospective audit to a number of senior nurses, it became clear that although a number of the nurses had attended training sessions with the specialist pain nurses, the observation charts are predominantly filled in by health-care assistants or student nurses in the wards, who have not necessarily received any guidance on correct usage of the tool.

The increased recognition of pain has been found to be associated with increased provision of analgesia; however, this has been reported as leading to a twofold increased incidence of opioid oversedation.¹⁵ During 'overaggressive pain management', Gordon et al.⁶ saw an increase in fatal respiratory depression. Importantly, patients appeared to show a decreasing conscious level prior to the episode of over sedation, highlighting the importance of careful monitoring and follow-up of patients after an intervention.¹⁵ For this reason, reassessment of pain should occur after each pain management intervention once sufficient time has elapsed for

the peak effect of the analgesic to be reached.⁶ We did not look into the side-effects of analgesia during this audit, but with the aim of improved pain management, it would be an important measure of success in future re-audits.

The Agency for Health Care Research and Quality recommends the following intervals for reassessment of pain following an intervention:

1. Within 30 minutes of parenteral drug administration;
2. Within 1 hour of oral drug administration;
3. With each report of new or changed pain.⁴

The Royal College of Anaesthetists state that the safe and effective management of pain is a basic requirement of any professional health service and recognise that education is a key factor in providing this.¹ This training should involve all health-care providers and include instruction on how to assess and document pain scores, as well as guidance on the development of a plan for effective pain management.² Karlsten et al. recommend appointing two nurses per ward as pain control representatives who are responsible for dissemination of information to colleagues, as well as education and training in pain management. This strengthens the culture and awareness of pain treatment in everyday working.⁷

In addition to educating health-care providers and junior medical staff, education of patients and their families about pain screening, assessment and management is widely recognised as an important consideration.² This not only improves reporting of pain and analgesia side-effects but also, in certain situations, has been shown to actually decrease the pain scores that patients report.⁵

Implementing change is a difficult and time-consuming process. It requires an evidence-based policy followed up by repetitive educational efforts and extensive leadership.⁶ The presence of an APS has been shown to have numerous benefits, such as the provision of better pain relief with fewer side-effects and lower postoperative morbidity and mortality.⁵ The Royal College of Anaesthetists acknowledge that consultant-led APSs encourage the safe use of parenteral opioids. This can clearly be seen from the results of this audit, where strong opioids were being used more on surgical wards where the APS has a presence. With this in mind, they recommend that acute pain management advice and intervention should be available at all times.¹ With their knowledge of pain management and presence in the wards, the APS may be best placed to provide the continuing education and leadership required to improve management of pain in the wards.

Conclusion

The results of this audit show that the prevalence of pain among patients in medical and surgical wards in the hospital is unacceptably high. Documentation overall appears to be reasonable; however, when patients are in pain, the documented score does not reflect the patient experience. It appears that there is greater provision of analgesia, including the availability of strong opioids, in the surgical wards where the APS has a visible presence. It is clear that pain is being under-recognised and under-treated throughout our medical and surgical wards. In order to comply with recommended standards of care, and for humanitarian reasons, it is vital to improve current pain recognition and management strategies.

Following a 10-year review, Gordon et al. recommend the following:

- Pain intensity should be documented with a numerical or descriptive rating scale;
- Pain intensity should be documented at frequent intervals;
- Pain should be treated by a route other than the intramuscular route;
- Pain should be treated with regularly administered analgesics;
- Pain should be prevented and controlled to a degree that facilitates function and quality of life;
- Patients should be adequately informed and knowledgeable about pain management.¹⁶

Bearing in mind the findings of this audit and the high reliance on the most junior members of the nursing team to assess pain, we recommend the following for our hospital:

- Programme of education to junior nursing and medical staff to improve recognition and management strategies of pain;
- An Acute Pain Champion in each ward;
- APS input to medical wards;
- Matrons to ensure assessments are carried out accurately;
- Clear action plans for Nursing Staff if a patient found to be in pain.

Once these recommendations have been carried out as part of a quality improvement project, it will be necessary to assess the impact they have had by closing the audit loop. This forms part of the audit cycle as described by the Royal College of Anaesthetists and will enable assessment of the relative efficacy of these recommendations.⁹ Regular review will ensure ongoing adherence to policies and continued improvements in the level of care we offer.

Conflict of interest

The authors declare that there is no conflict of interest.

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Appendix 1

Data collection form

Hospital number	Male/female	Age	Ward	Medical/surgical	Pain score	Documented?	If ≥ 2 what has been done?	Analgesia plan	Known to pain team?	Intervention required by me
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