Implementing Guidelines to Improve Emergency Department Pain Management

NATIONAL EMERGENCY CARE PAIN MANAGEMENT INITIATIVE
NATIONAL INSTITUTE OF CLINICAL STUDIES

FINAL REPORT

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Executive summary

Using evidence-based recommendations from guidelines is a relatively simple concept; however changing clinical practice to apply those recommendations is complex. The National Emergency Care Pain Management Initiative sought to undertake a systematic approach in the planning of an implementation intervention which focused on tailoring of strategies based on identified barriers and enablers to support best practice.

There are over six million emergency presentations to emergency departments across Australia each year. For the majority of these patients, pain is the main concern. Acute pain management was identified by the clinical community as a priority issue where there is considerable variation in practice despite the availability of quality evidence and national clinical guidelines. Based on the results of a national audit in 2007 the NHMRC National Institute of Clinical Studies (NICS) undertook a program of work to implement a core recommendation from the Australian and New Zealand College of Anaesthetists (ANZCA): Acute Pain Management: Scientific Evidence (3rd edition) to improve pain management in Australian emergency departments.

“Pain is one of the biggest health issues in Australia today – every bit as big as cancer, AIDS and coronary heart disease. Yet it remains one of the most neglected areas of health care.”

(Professor Michael Cousins, Chair National Pain Strategy)

55 EDs were recruited across Australia to participate in this project. The goals of the project were to improve critical aspects of best practice pain management including early assessment of pain and the provision of timely analgesia. Data was submitted from approximately 16,500 clinical records to assess the impact of the project.

The project achieved the following outcomes:

- 23% improvement in early assessment of pain.
- 20-minute improvement in time to analgesia (a 5-minute decrease is considered clinically significant).

The design of the project was underpinned by a detailed exploration of barriers and enablers through a literature review and focus group study. Understanding barriers and enablers to best practice is important as it can inform interventions to facilitate change. The key elements of the implementation intervention included: consideration of strategies for change at all levels of the health care system, development of ‘change champions’ to drive local change, gaining hospital executive support prior to participating in the project, and tailoring local interventions site specific practice-gaps.

The lesson learned from this project can be generalised across all sectors of health and are timely given the current changes within the Australian health care system that focus on improving standards of care.

Important contributions from this project that are relevant to the aims of the current Health Care Reform agenda and the NHMRC are:

- the development of standards informed by evidence-based guidelines
- effective partnerships with medical and nursing colleges to develop evidence-based policies to support standards of care and professional accountability
- the importance of developing capacity and clinical leadership to implement national guidance into practice locally.
Introduction

The National Health and Medical Research Council (NHMRC) works to build a healthy Australia. The NHMRC's National Institute of Clinical Studies (NICS) became an institute of the NHMRC in 2007, and works towards improving health care by helping to close the gaps between best available evidence and current clinical practice. NHMRC NICS has been working collaboratively with clinicians to improve emergency care since 2002. The clinical community through the NHMRC NICS Emergency Care Program identified pain management as a clinical priority area where there was variation in practice.

This report is intended for clinicians, managers and agencies involved in the implementation of evidence-based guideline recommendations to improve care and summarises the development of the NHMRC NICS National Emergency Care Pain Management Initiative, the intervention, its outcomes, and recommendations for implementation of best practice.

The outcomes presented in this report only briefly highlight the projects key findings; detailed statistical analysis will be submitted in publications to be authored by the project Advisory Committee in peer reviewed journals.

The report is structured to take the reader through the following stages of the project:

- identifying the evidence practice gaps
- identifying the barriers and enablers to implementation
- planning for implementation
- measuring outcomes
- reporting of lessons learnt.
Background

First established in 2002, the NHMRC NICS Emergency Care Program developed a systematic approach to improving emergency care based on the best available evidence. The Emergency Care Program started with a national collaborative project (2002 and 2003) which provided the foundation for the establishment of the Emergency Care Community of Practice (EC CoP). The EC CoP is a voluntary network of multidisciplinary clinicians, health managers and other health care professionals involved in the delivery of emergency care across Australia. The aim of the EC CoP is to close evidence practice gaps through knowledge sharing and the development of implementation expertise.

In 2007, emergency department (ED) pain management was identified as a priority issue for improvement by the EC CoP membership. An audit was undertaken to determine variation in practice. This work led to NHMRC NICS undertaking a program of work between 2007 and 2011 to close the practice gaps and improve ED pain management.

Table 1: NHMRC NICS Emergency Care Program history

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tr>
<td>2002 – 2003</td>
<td>• Emergency Department Collaborative</td>
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<tr>
<td>2003</td>
<td>• Emergency Care Community of Practice established</td>
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<tr>
<td>2006</td>
<td>• Pain management in Australian emergency departments identified as a clinical priority</td>
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</tbody>
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| 2007     | • National audit of pain management practices: review of current practice  
          | • Barriers and enablers to pain management: focus groups             |
| 2008     | • Barriers and enablers to pain management in the emergency department: a literature review |
| 2008 – 2010 | • National Emergency Care Pain Management Initiative                  |
Identifying the evidence-practice gap

In 2006 there were over six million reported emergency presentations to EDs across Australia. Local and international studies report that in 78%-86% of patients who present to EDs, pain is the primary concern. The literature also documents poor management of patient pain within the ED setting.

In 2007, there was no national data reporting on ED pain management practices; a national audit was required to establish current practice. To facilitate this process, NHMRC NICS commissioned the Collaborative Health Education and Research Centre (CHERC) of Bendigo Health Care Group in Victoria to design an audit tool in consultation with expertise from members of the EC CoP and coordinate a national audit to measure current pain management practice in Australian EDs.

In June 2007, a retrospective audit was undertaken reporting on data from the period June 2005 to June 2006. The audit aimed to identify:

• current clinical practice against specific recommendations from the Australian and New Zealand College of Anaesthetists (ANZCA): Acute Pain Management: Scientific Evidence (3rd edition)
• clinical practice guidelines and organisational processes in place to best practice
• the barriers and enablers to best practice pain management.

An invitation to participate in the audit was extended to 141 public hospitals with 74 responding positively. 36 sites submitted data. Those sites unable to submit data cited workload and lack of resources as reasons for not participating in the audit.

The Paediatric Research in Emergency Department International Collaborative (PREDICT) contributed to the audit, with a selection of Australian and New Zealand paediatric EDs involved in PREDICT engaging in partnership to collect, analyse and report on the paediatric specific data. This arm of the audit included an additional 13 participating sites (11 in Australia and two in New Zealand).

Key results from the primary audit are highlighted in Box 1 over page.
Box 1: Key results from the 2007 national pain management audit of Australian emergency departments

In an audit of 36 hospitals:

Clinical practice gap

(n=1996 patients from ED presentations of migraine, fractured neck of femur and abdominal pain)

• Only 40% of patients received an initial pain score
• Median time to analgesia was greater than 60 minutes where 30 minutes is recommended
  – 10% received femoral nerve block for fractured neck of femur
  – 12% received IV narcotics for migraine (not recommended)
  – 29% received IV morphine for management of abdominal pain

Guidelines and organisational processes

• 80% had policies for pain management in their EDs
• 19% had access to the Australian and New Zealand College of Anaesthetists (ANZCA) Acute Pain Management: Scientific Evidence in their ED
• 22% had quality improvement processes in place to collect and report data relating to pain management practice

Barriers and enablers

Enablers

• A genuine desire to deliver quality care
• Medical and nursing leadership and champions required for pain management
• Education and competency-based training programs for pain management
• Advanced clinical nurse protocols and standing orders
• Working with hospital acute pain services for long stays in EDs

Barriers

• Lack of time and resources in terms of workload
• Rotation of staff makes it difficult to keep staff current with ED policies
• Access block impacts on availability of ED beds to treat patients
• Organisational process hinders development of policies and procedures
• Failure to disseminate evidence-based guidelines
Identifying the barriers and enablers for implementation

To deepen the understanding of the issues related to ED pain management as identified in the audit and to inform the planning for the project intervention, a literature review and a qualitative research study was undertaken.

A literature review

NHMRC NICS undertook an international literature review ‘Barriers and enablers to pain management in emergency department care: a literature review. July 2008’. A full copy of the literature review is available at Appendix 1.

The literature review highlighted a number of key findings which included the strength of nursing pain assessment as well as the benefits of reliable documentation systems. The review also identified that organisationally, there is a need to incorporate pain management into the processes of care and to provide clear protocols. These are the necessary precursors to creating systems that acknowledge the linear nature of effective pain management rather than treating pain as an isolated instance of care.

Emergency department clinician focus groups

NHMRC NICS commissioned Campbell Research and Consulting (CR&C) to conduct qualitative research on the implementation of ED best practice pain management in the Australian context. Five focus groups and two in-depth interviews with medical and nursing ED clinicians in six hospitals located in Victoria, South Australia and New South Wales were undertaken.

ED protocols and procedures (for the most part) were seen to accurately reflect the evidence presented in the ANZCA guidelines¹. However in the context of the busy ED environment, written guidelines and protocols were often perceived to be difficult to use in the routine practice of emergency care.

It was the knowledge and skills of clinicians working in the ED that were identified as the strongest influence on daily practice. Most ED clinicians who participated in the focus groups acknowledged that generally gaps did exist between best practice guidelines and everyday practice. The barriers to closing this gap were perceived to be externally driven, related to hospital structures or elements of the broader health system, rather than the gaps in the clinicians own knowledge.

Pain management was rarely reported as being the top clinical priority in the ED setting given other urgent presentations, although it was considered an important aspect of patient care. Appendix 2 provides a table outlining the barriers and enablers identified through this process in detail.

Despite the chaotic nature of EDs and barriers to implementation of best practice, ED clinicians had a genuine desire to improve delivery of care. Pain management was seen as a ‘taken for granted’ aspect of good clinical care. However, implementation of pain management procedures sat low as a quality improvement priority for task orientated and process driven EDs.
Recommendations from the focus groups

The following recommendations were made that:

1. NHMRC NICS develop a multi-level approach to the best practice pain management implementation initiative

2. NMHRC NICS develop a tool to facilitate the application of the multi-level approach at the organisation level to identify strategies uniquely appropriate to individual health facilities

3. Change champions be nominated within each organisation to drive the implementation of best practice pain management guidelines within individual health facilities

4. Allocated specific ‘quarantined’ time and resources for change champions be made available to facilitate effective change

5. The tasks to be undertaken by change champions relate to specific organisational needs.

These recommendations further informed the design of a targeted strategy for the nationwide implementation of NHMRC NICS endorsed pain management guidelines.
Planning the implementation phase

“Effective pain management has a great deal to offer in reducing the burden of chronic disease. This includes the treatment of acute pain in its early stages to limit the otherwise likely progression to chronic pain and disability, which then contributes markedly to health care and social welfare costs.”

(Pain Australia)

Establishing the Advisory Committee

This committee was chaired by Associate Professor Steven Doherty who has completed an NHMRC NICS Fellowship and has expertise in knowledge translation in the clinical setting. The advisory group included clinicians, researchers, an ED pharmacist and paramedic representation. Committee members are listed in Appendix 3.

The Advisory Committee advised on the:

• feasibility of the project approach within the busy ED practice environment (this included identifying and prioritising the core recommendation from the guideline that would have the greatest impact)

• translation of the guideline recommendation into meaningful clinical indicators to measure practice change

• step wedge research design

• development of the web-based audit tool to facilitate collection of data.

The Advisory Committee provided leadership and authority for change, took lead roles in training workshops, and promoted the project at relevant forums.

Identifying the core recommendation and indicators for change

Selecting the most effective recommendation for successful implementation is critical. The committee selected the following recommendation based on the results of the national audit.

‘To ensure optimal management of acute pain, emergency departments should adopt systems to ensure adequate assessment of pain, provision of timely and appropriate analgesia, frequent monitoring and reassessment of pain’

The clinical indicators selected relate directly to the elements identified in the recommendation to achieve desired standards of care:

• Initial assessment of pain – 80% of patients presenting to the ED in pain have a documented pain score within 30 minutes of admission to the ED

• Timeliness of analgesia – A median time to analgesia of 30 minutes from triage (30 minutes is a common target with patients reporting they would like to be offered pain relief medication within 25 to 27 minutes of arrival in EDs)

• Effectiveness of pain management – 80% of patients with severe pain (7 or greater) who decrease their pain score by 3 or more points within one hour (A score of 3 or more was considered as a meaningful improvement based on consultation with Australian emergency care experts).
Systematic approach to implementation

NHMRC NICS developed a targeted strategy that addressed change at multiple levels including the health service, the ED and individual clinicians. Local champions were identified as the best drivers for improvement. These change champions would address the local barriers and enablers through the development of tailored strategies to address specific organisational needs.

This approach is supported by a model promoted by Ferlie and Shortell\(^\text{10}\) which states that change is required at four levels for quality improvement strategies to be successful. The greatest and longest lasting impact will be achieved by considering all four levels simultaneously and that a change aimed at one level should be considered in the context of the other three levels. Change needs to occur at the level of the:

1. individual
2. group or team
3. overall organisation
4. larger system or environment in which individual organisations are embedded.

Strategies that focus on the individual alone are seldom effective by themselves. Within health care, individuals predominantly deliver care as part of a team that has interdependence on other parts of the organisation. However, attitudes and level of knowledge of individuals is critical to enable change to happen. Change strategies requiring organisational level shifts need to be reinforced by macro-level changes in the environment.

Inviting participation

In May 2008, expressions of interest were sent to 127 public hospitals across Australia with 55 hospitals initially registering to participate. These sites entered into a two year commitment to work with NHMRC NICS to monitor and develop local solutions to barriers to best practice pain management based on the national guidelines. See Appendix 4 for a list of the participating sites.

To be eligible to participate a hospital needed to have more than 15,000 ED presentations annually and had to formally commit as an organisation to participate in the project by signing a Memorandum of Understanding. To elicit organisational support the ED had to nominate a project lead and a local project improvement team of at least three people including a clinical lead from the ED. Participating hospitals had to provide a signed commitment from the CEO, ED director / ED nurse manager to support attendance at workshops, participation in teleconferences, local team meetings and to undertake the initial and three monthly audits.
The research framework

To manage the 55 participating sites, the project was divided into two waves with a sequential roll-out period six months apart. The selection of participants for wave one and wave two was designed to ensure the participating EDs were fairly distributed across both waves and to enable those EDs that were linked and had existing organisational relationships to be able to work together.

This structure provided an opportunity to test the feasibility of using a step wedge design to evaluate the effectiveness of the intervention developed by NHMRC NICS. The step wedge design in this case provided a control period of six months where the initial group of EDs were provided the intervention which included the training program and audit and feedback as the key implementation strategies. The intervention was replicated in the second group of EDs (wave two).

Figure 2: Pain management initiative step wedge design

Wave 1

- NHMRC intervention (6 months)
- Local project activity continued (12 months)

Wave 2

- No intervention
- NHMRC intervention (6 months)
- Local project activity continued (12 months)

This project formally tested the hypothesis that ‘The implementation of a number of tailored quality improvement interventions applied together improves pain management in the emergency department’.3, 11, 12

Data collection

Project leads at each participating site submitted data from 60 randomised patient records at three monthly intervals from the sample population of patients presenting with abdominal pain and trauma. This data was entered into a secure online audit tool and analysed by the Department of Mathematics and Statistics at La Trobe University. Data collected included:

- patient demographics (gender, age, pregnancy, analgesia prior to ED presentation)
- date / time of arrival
- triage and discharge diagnosis
- time of pain assessments and pain score
- time of analgesic treatment and analgesia given
- time of non-pharmacological management and treatment given.
The intervention

The project commenced in July 2008. Table 2 illustrates the program undertaken by NHMRC NICS.

Table 2: Pain management initiative implementation

<table>
<thead>
<tr>
<th>Initial 6 months</th>
<th>Following 12 month period</th>
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| **WORKSHOPS 1, 2 AND 3**  
Implementation and leadership training | **WORKSHOP 4**  
Final project workshop |
| Support from the Advisory Committee | Data collection and feedback |
| Support from NHMRC NICS team |  |
| Email, teleconferencing and exchange of resources and ideas |  |
| Access to the web-based portal |  |

Training workshops

The aim of the training program provided was to develop a cohort of clinical implementation leaders within the ED sector so that these skills would be used beyond this project to support future guideline implementation.

The delivery of the training program began with a series of workshops focusing on project management, leading change, implementation of best practice and areas for clinical review. The content of workshops in each wave was consistent; some adjustments to wave two workshops were made based on feedback from wave one participants and speaker availability. Each workshop commenced with a review of current activities from each project leads and a data update; and concluded with a recap and outline of the next steps. A summary of the workshop content is in Appendix 5.

Infrastructure to support networking

Between workshops, the NHMRC NICS team were available to provide support to the local project teams through telephone and email contact. This was further supported by a web-based communication, a resource portal and a number of teleconferences.

Web-based communication and resource portal

A web-based communication and resource portal was established to provide a secure site for the collation of local de-identified data and a repository for resources developed by hospital teams to share with other participating sites. The portal was coordinated and maintained by the NHMRC NICS project team; resources available included a common set of educational slides which enable consistent messages related to the evidence-base to be communicated across the sector.
Local emergency department project activity

The project leads played a pivotal role through the process of change which focused on developing strategies based on their local assessment of barriers and enablers. They were encouraged to:

- establish a multi-disciplinary team to support the project activity
- gain executive support which was demonstrated through the hospital executive agreeing to a Memorandum of Understanding which included allocation of staff time to participate in the project and attend workshops
- develop a project plan which included the development of a timeline and a budget
- seek approval from their ethics committee
- identify their local barriers and enablers, and strategies for change through interdepartmental staff interviews and focus groups
- undertake process mapping to identify opportunities for ED interdepartmental processes and review of documentation
- develop organisational policies to support evidence-based pain management
- undertake targeted educational activities including staff orientation and in-service programs
- regularly report progress and results to monitor performance.

A list of the site-based strategies are outlined in Appendix 6.

Broader system level activity

To broaden the impact of the project, NHMRC NICS worked with the Advisory Committee on a number of systems level strategies including:

- development of a joint policy statement in partnership with the three emergency colleges; Australasian College for Emergency Medicine (ACEM), Australian College of Emergency Nursing (ACEN), and the College of Emergency Nursing Australasia (CENA), see Appendix 7.
- having a strong presence at the annual scientific meetings of the emergency colleges, presenting the progress and outcomes of the project. See Appendix 8 for the current list of poster presentations delivered at the time of report writing.
- publication of research papers to report on the findings of the project. See Appendix 8 for the current list of publications available at the time of report writing.
- adoption of the project clinical indicators by Australian Council of Healthcare Standards (ACHS). (This strategy is consistent with the Australian Commission on Safety and Quality in Health Care funded report “Towards national indicators of safety and quality in health care”13 which recommends inclusion of assessment of pain as a national indicator for EDs).
- participation of members from the committee to develop a new section on paediatric emergency care in the third edition of ANZCA Acute Pain Management: Scientific Evidence.1
Measurement of outcomes

During the project, data was collected through a number of different sources using both quantitative and qualitative data. Data was progressively collected and feedback provided to guide the refinement of interventions.

Of the 55 sites that initially committed to the project, 45 sites actively participated in the project submitting data from a total of 16,627 patient records. Of the 45 sites, 40 sites completed the audits for the full 18 months. There was improvement across the three clinical indicators.

Indicator 1 – Assessment of pain

The assessment of pain is an important initial step in quality pain management. This indicator measured the change in proportion of patients presenting to the ED in pain who have a documented pain score as a part of their initial assessment. At baseline (time point one), 41% of patients had a documented pain score; this increased to 64% by time point seven. This represents a 23% improvement in performance over the study period.

![Figure 3: Percentage of patients with a documented pain score](image)

Indicator 2 – Time to analgesia

Time to analgesia of 30 minutes is a commonly reported target for quality pain management in the ED setting based on patient expectations. The Advisory Committee agreed that a drop of at least five minutes in delivery of pain relief was considered clinically significant. This indicator assessed the change in the median time to analgesia from time of presentation to the ED to time of administration of analgesia. Prior to commencing the project (time point 1) the median time to analgesia was 61 minutes and this decreased to 41 minutes at time point seven, the final audit point.

(see Figure 4 over page)
Indicator 3 —Effectiveness of pain management

The effectiveness of pain management was measured by analysing the proportion of patients with severe pain who reported a reduction in their pain score by three or more units within the first hour of presentation.

What is observed during this period is an initial improvement in the early stages of the initiative (from 32% to 46%), then a subsequent drop in performance (46% to 35%). The low numbers in each time point (n=52 to 93) do not allow for a meaningful analysis of this indicator. Low numbers in this indicator were primarily attributed to poor documentation of pain reassessment.
Qualitative evaluation

The qualitative evaluation was undertaken by the Griffith Health Institute (Griffith University) and comprised of interviews, focus groups, and review of policy and documentation. The purpose was to achieve an understanding of the organisational factors and interventions that addressed the barriers and capitalised on the uptake of best practice during the project. The themes arising from this evaluation included:

**Policy development**

The most common policy implemented was the use of nurse initiated analgesia. The administration of analgesia to patients was defined as being guided by pain scores; further emphasising the importance of the pain score assessment in the ED. Instructions were clear and detailed with specific pain medications being prescribed for different pain scores. A number of new procedures were put in place such as intranasal fentanyl for paediatric pain, neonatal sucrose, and fascia iliaca block for fractured neck of femur.

**Attitudes**

Altering the perceptions of staff and staff attitudes emerged as an important theme in predicting success or failure of operational changes and change sustainability as these were cited as being both a guiding force for change and a barrier.

**How to provide constructive feedback**

Guidance was provided in how to give feedback in a non-confrontational way to inform staff of the performance. Feedback at the commencement of the project was an important motivator; ongoing feedback during the project encouraged staff and helped sustain the change.

**Education and awareness raising**

Education support in EDs was strongly associated with increased awareness, increased knowledge of pain and improved pain management within the ED. Having cooperation, both within the nursing team and between departments was important for the successful implementation of pain management initiatives. Regular audits and education were considered to be the cornerstone of sustainability.

**Organisational issues**

A lack of resources, such as time, busy departments, staff turnover and demanding workloads impacted on the ability to manage improvement strategies effectively. Getting team members together to discuss initiatives was deemed difficult; although it was considered to be an important factor in the implementation process. Office space and access to computers were considered barriers. Obtaining approval for new protocols was sometimes considered time consuming and complex.

**Local protocol development**

The types of analgesia used and the associated protocols differed slightly across hospitals, but the objectives and final actions recommended were similar. All documents recommend accurate assessment of pain, followed by an appropriate and effective administration of analgesia while observing all safety measures.
Lessons learnt

The experiences gained while undertaking this project revealed several key implications for future guideline implementation activities. These factors can be considered both from a primary sponsor agency perspective (i.e. NHMRC NICS) and the practice setting (i.e. the ED).

The NHMRC NICS focussed on addressing knowledge gaps in implementation and the building of capacity through skills development for local champions to lead, implement and sustain change. In the practice setting, the value of a peer-led project cannot be underestimated; this model was seen to be non-confrontational and enabled benchmarking against other EDs to motivate each site to improve practice.

Throughout the implementation of the project, a number of key strategies made a significant impact on the success of this initiative. Based on the formal data analysis as well as feedback from Committee members, participating sites and the NHMRC project team, the key strategies that influenced success were:

**Engaging the clinical sector**
- focusing on an issue of clinical priority
- working collaboratively with the clinical community to develop a realistic approach to implement guideline recommendations
- identifying change champions to support implementation
- developing tools and resources e.g. the Acute Pain Management Manual.

**Taking a systematic approach in the planning process**
- identifying the evidence-practice gap
- gaining agreement about what is to be achieved through sound planning, use of a theoretical framework and development of a meaningful set of indicators to measure outcomes
- identifying barriers and enablers
- early planning for sustainability for successful local interventions.

**Gaining organisational support**
- development of a strong business case for participation in the project
- a formal agreement through an MOU signed by the health service executive and ED managers.

**Provision of project support**
- development of a tailored training program
- provision of workshops to review practice, be together as a team and learn from experts
- provision of a web-based audit tool.
Measuring performance

• regular audit and feedback allowed for projects teams to modify and review their local interventions.

Promoting sustainability by working at both a local and system level

• development of evidence-based policy by professional colleges and at the hospital level to support the practice change.

Creating a research agenda

• use of a rigorous research methodology that can be reported in the literature and contribute to the growing body of knowledge in guideline implementation.

Implications for the NHMRC

Currently, the health care system is undergoing a major reform process where there will be a greater expectation of meeting clinical standards based on best available research findings including clinical practice guidelines. This project has demonstrated the following achievements that work towards the current reform agenda:

• development of national standards that are derived from high quality guidelines, that are locally relevant, and are supported by the Australian Commission on Safety and Quality in Health Care funded report “Towards national indicators of safety and quality in health care”15
• establishing collaborative partnerships with medical and nursing colleges to develop evidence-based policies to support national standards of care and professional accountability
• development of local clinical leadership to implement national guidance into practice
• development of a systematic approach to improve implementation of guidelines that is efficient and effective by tailoring of interventions.

The NHMRC NICS led significant improvements in national ED pain management through this project. Improvement in key clinical indicators, the development of national policy and national clinical indicators, and the training of clinical leaders in guideline implementation were key outcomes.
Acknowledgements

The success to this work was achieved because of the collaborative efforts and support of many people. The pain management initiative Advisory Committee members were generous with their time and knowledge and their efforts are gratefully acknowledged.

The NHMRC would like to acknowledge the hard work, commitment and enthusiasm of the participating hospital project leads. These hospitals committed to not only improve pain management in their local ED but shared their knowledge and experiences more broadly to enhance the initiative outcomes for all who participated.
References


2. Cousins M. Pain Australia web-site. 2011 [cited 2011 20 September, 2011]; Quote: “Pain is one of the biggest health issues in Australia today – every bit as big as cancer, AIDS and coronary heart disease. Yet it remains one of the most neglected areas of health-care”]. Available from: http://www.painaustralia.org.au/


Appendices

Appendix 1
Barriers and enablers to pain management in emergency department care: a literature review (see separate document)

Appendix 2
Key barriers and enablers to best practice pain management in the ED identified by focus group participants

Appendix 3
National Emergency Care Pain Management Initiative Advisory Committee members

Appendix 4
Pain Management Initiative participating hospitals

Appendix 5
Workshop program content

Appendix 6
Tailored strategies and interventions

Appendix 7
Joint Policy Statement Emergency Department Pain Management

Appendix 8
Index of presentations and research papers
### Appendix 2 – Key barriers and enablers to best practice pain management in the ED identified by focus group participants

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Enablers</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lack of time and resources</td>
<td>Targeting senior opinion leaders in the ED</td>
</tr>
<tr>
<td>The environment of the ED (managing urgent and serious presentations in a busy and chaotic environment)</td>
<td>Ensuring buy in across all levels</td>
</tr>
<tr>
<td>Legislative driven processes in the EDs</td>
<td>Having a dedicated pain management clinician or champion for change</td>
</tr>
<tr>
<td>The organisational culture of the hospital</td>
<td>Providing strong evidence for such change</td>
</tr>
<tr>
<td>A high level of individual clinician confidence in existing practice</td>
<td>A positive patient outcome</td>
</tr>
<tr>
<td>The expectations of patients</td>
<td>Comprehensive education packages</td>
</tr>
<tr>
<td></td>
<td>Ensuring multifaceted approach to change that ensured support from the hospital, the ED team and individual clinicians</td>
</tr>
</tbody>
</table>
# Appendix 3 – National Emergency Care Pain Management Initiative Advisory Committee members

<table>
<thead>
<tr>
<th>Name</th>
<th>Position(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chair</strong></td>
<td>A/Prof Steven Doherty, Rural Clinical School, University of Newcastle and Department of Emergency Medicine and Critical Care, Tamworth Base Hospital, Tamworth (NSW)</td>
</tr>
<tr>
<td><strong>Members</strong></td>
<td></td>
</tr>
<tr>
<td>A/Prof Margaret Fry</td>
<td>Senior Nurse Researcher, Faculty of Nursing, Midwifery and Health University of Technology, Sydney (NSW) / Nurse Practitioner, St. George Hospital, Sydney (NSW)</td>
</tr>
<tr>
<td>Dr Jonathan Knott</td>
<td>Head of Emergency Department Research, Royal Melbourne Hospital (VIC) Emergency Medicine Clinical Sub-dean, University of Melbourne (VIC)</td>
</tr>
<tr>
<td>Kerri Holzhauser</td>
<td>Emergency Nurse Researcher, Princess Alexandra Hospital (QLD)</td>
</tr>
<tr>
<td>Bill Barger</td>
<td>Operations Manager, Operational Standards and Improvement Department, Metropolitan Ambulance Service (VIC)</td>
</tr>
<tr>
<td>A/Prof Anna Holdgate</td>
<td>Director Emergency Medicine Research, Liverpool Hospital and Associate Professor at the University of New South Wales (NSW)</td>
</tr>
<tr>
<td>Dr Ramon Shaban</td>
<td>Lecturer, Postgraduate Programs Convenor, School of Nursing &amp; Midwifery Research Centre for Clinical Practice Innovation. Griffith University (QLD)</td>
</tr>
<tr>
<td>Dr Franz Babl</td>
<td>Paediatric Emergency Physician, Royal Children's Hospital (VIC), Clinical Associate Professor, University of Melbourne (VIC)</td>
</tr>
<tr>
<td>Dr Andrew Bernard</td>
<td>Director Clinical Streams, Sydney South East Area Health Service (NSW)</td>
</tr>
<tr>
<td>Megan Hosking</td>
<td>Nurse Practitioner Candidate. Cairns Hospital (QLD)</td>
</tr>
<tr>
<td>Trish Lemin</td>
<td>Trish Lemin. Clinical Nurse Consultant Rural Trauma. Mid North Coast Local Health Network (NSW)</td>
</tr>
<tr>
<td>Dr Simone Taylor</td>
<td>Senior Pharmacist - Emergency Medicine and Research, Austin Hospital (VIC)</td>
</tr>
<tr>
<td>Prof Anne-Maree Kelly</td>
<td>Director Joseph Epstein Centre for Emergency Medicine Research Western Health (VIC)</td>
</tr>
<tr>
<td>Dr Elizabeth Cotterell</td>
<td>Senior Staff Specialist Department of Emergency Medicine, Sydney Children's Hospital (NSW)</td>
</tr>
<tr>
<td>Ms Sue Huckson</td>
<td>Director Effective Practice Program. Research Translation Group. National Health and Medical Research Council (VIC)</td>
</tr>
<tr>
<td>Mr Scott Bennetts</td>
<td>Assistant Director Effective Practice Program. Research Translation Group. National Health and Medical Research Council (VIC)</td>
</tr>
</tbody>
</table>
Appendix 4 – Pain management initiative participating hospitals

Angliss Hospital (VIC)  
Armadale Kelmscott District Memorial Hospital (WA)  
Auburn Hospital (NSW)  
Austin Health (VIC)  
Bairnsdale Regional Health Service (VIC)  
Bendigo Health Care Group (VIC)  
Box Hill Hospital (VIC)  
Broken Hill Hospital (NSW)  
Bunbury Hospital (WA)  
Bundaberg Base Hospital (QLD)  
Cairns Base Hospital (QLD)  
Calvary Health Care (ACT)  
Calvary Mater Newcastle Hospital (NSW)  
Canberra Hospital (ACT)  
Canterbury Hospital (NSW)  
Coffs Harbour Base Hospital (NSW)  
Concord Hospital (NSW)  
Dandenong Hospital (VIC)  
Dubbo Base Hospital (NSW)  
Fairfield Hospital (NSW)  
Hornsby Ku-Ring Gai Health Service (NSW)  
Joondalup Health Campus (WA)  
Launceston General Hospital (TAS)  
Lyell McEwin Hospital (SA)  
Mackay Base Hospital (QLD)  
Manly Hospital (NSW)  
Manning Base Hospital (Taree) (NSW)  
Maroondah Hospital (VIC)  
Monash Medical Centre (VIC)  
Mt Isa Hospital (QLD)  
Port Macquarie Base Hospital (NSW)  
Prince of Wales Hospital (NSW)  
Princess Alexandra Hospital (QLD)  
Redcliffe Hospital (QLD)  
Redland Hospital (QLD)  
Royal Adelaide Hospital (SA)  
Royal Children's Hospital (VIC)  
Royal Hobart Hospital (TAS)  
Royal Prince Alfred Hospital (NSW)  
Sandringham & District Memorial Hospital (VIC)  
Sir Charles Gairdner Hospital (WA)  
St Vincent's Hospital (VIC)  
St Vincent's Hospital (NSW)  
Sunshine Hospital (VIC)  
The Children's Hospital at Westmead (NSW)  
The Queen Elizabeth Hospital (SA)  
The Townsville Hospital (QLD)  
The Tweed Hospital (NSW)  
Werribee Mercy Hospital (VIC)  
Western Hospital (VIC)  
Westmead Hospital (NSW)  
Women's and Children's Hospital (SA)
## Appendix 5 – Workshop program content

### Workshop 1
- NHMRC’s National Institute of Clinical Studies - Supporting evidence implementation in Emergency Care
- The issue of pain management in the ED setting – the gap
- Paediatric pain management – current practice
- Pain Management initiative – an overview
- Barriers and enablers – tailoring interventions
- High Performing Teams in Health care: Learning from research and practice.

### Workshop 2
- Initial progress and challenges
- Advanced communication strategies
- Undertaking your local barrier analysis
- Tailoring interventions to local barriers
- Audit and feedback
- Pain myths and biasing
- Pain Management case studies
- Story of improvement – trauma pain management
- Project planning – key principles
- Implementation: what’s the problem

### Workshop 3
- Progress and challenges
- Base line data analysis
- Leadership influencing change
- Leadership – an ED director’s view Paediatric Pain Management
- Elderly Pain Management
- Pre-hospital pain management
- Migraine / Headache – evidence and ED treatment
- The opioid tolerant patient
- Planning for sustainability
- Clinical Guidelines – the characteristics and benefits of clinical guidelines and how local EDs can use them in quality improvement initiatives

### Workshop 4
- Initial progress and challenges
- Data analysis update / discussion
- The changing healthcare landscape – ensuring pain stays on the agenda
- Sustainable change: maintaining the rage
Appendix 6 – Tailored strategies and interventions

In summary the following strategies and interventions were tailored to address the local enablers and barriers identified by the ED teams in the audit of their practices. There was some variability from hospital to hospital but the themes and strategies were frequently consistent.

<table>
<thead>
<tr>
<th>Enablers</th>
<th>Tailored strategies and interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A genuine desire to deliver quality care</td>
<td>• Audit highlighted practice gaps and demonstrated performance</td>
</tr>
<tr>
<td></td>
<td>• Access to tools and resources to support evidence-based practice</td>
</tr>
<tr>
<td>Medical and nursing leadership and champions</td>
<td>• Identification of and support for project leaders and project teams</td>
</tr>
<tr>
<td>for pain management</td>
<td>• Equipping clinical champions with training and resources</td>
</tr>
<tr>
<td>Advanced clinical nurse protocols and standing orders</td>
<td>• Development of local guidelines to inform practice and support extension of current practice</td>
</tr>
<tr>
<td>Working with hospital acute pain services for</td>
<td>• Hospital executive supporting interdepartmental collaboration</td>
</tr>
<tr>
<td>longs stays in ED</td>
<td>• Organisation wide ownership of KPIs</td>
</tr>
<tr>
<td></td>
<td>• Formation of project teams, supported by executive that had carriage of initiatives and the authority to work with other areas</td>
</tr>
<tr>
<td>Barriers</td>
<td>Tailored strategies and interventions</td>
</tr>
<tr>
<td>Lack of time and resources in terms of</td>
<td>• Provision of information demonstrating performance</td>
</tr>
<tr>
<td>workload</td>
<td>• Provision of locally based resources that translated approved guidelines into tools that could be used by a range of staff</td>
</tr>
<tr>
<td></td>
<td>• Commitment by hospitals to support attendance at workshops and team meetings</td>
</tr>
<tr>
<td></td>
<td>• Review of systems of care aiming to streamline pain care management</td>
</tr>
<tr>
<td>Rotation of staff makes it difficult to keep</td>
<td>• Inclusion of pain management standards in department orientation</td>
</tr>
<tr>
<td>staff current with ED policies</td>
<td>• Development of local initiatives and resources to implement guidelines</td>
</tr>
<tr>
<td>Access block impacts on availability of ED</td>
<td>• Hospital executive commitment to support the project</td>
</tr>
<tr>
<td>beds to treat patients</td>
<td>• ED systems review to optimise existing staff and resources to support quality pain care</td>
</tr>
<tr>
<td>Organisational process hinders development of</td>
<td>• Support from and expertise of NHMRC NICS team in knowledge translation and guideline expertise</td>
</tr>
<tr>
<td>policies and procedures</td>
<td>• Advisory Committee and NHMRC NICS project support</td>
</tr>
<tr>
<td></td>
<td>• Workshops included skill development in negotiating organisational barriers and creating sustainable change</td>
</tr>
<tr>
<td></td>
<td>• Sharing between participants of tools, policy and training material</td>
</tr>
<tr>
<td>Failure to disseminate evidence-based</td>
<td>• NHMRC NICS support in techniques for guideline dissemination</td>
</tr>
<tr>
<td>guidelines</td>
<td>• Skill development at workshops</td>
</tr>
<tr>
<td></td>
<td>• Infrastructure such as web-based portal, teleconferences and workshops to support networking and learn from other project sites</td>
</tr>
</tbody>
</table>
Appendix 7 – Joint Policy Statement Emergency Department Pain Management

1. PURPOSE AND SCOPE

Pain is the primary complaint for the majority of people who present to the emergency department for treatment of medical conditions or injuries. Pain management should be given a high priority in the provision of care

1.1. Pain management is a fundamental component of quality patient care

2. POLICY

Emergency departments will have systems in place to support best practice management for acute pain that includes early assessment of pain, provision of timely and appropriate analgesia or non-pharmacological treatment and ongoing monitoring to assess the effectiveness of pain management

3. PROCEDURE AND ACTIONS

3.1. Emergency departments will have robust procedures in place for pain management that are consistent with the best available evidence, including referral to long-term pain management services as appropriate. This includes standardised protocols, nurse-initiated analgesia policies and referral to chronic pain services

3.2. Emergency departments will have standardised evidence-based processes to document severity of pain and the ongoing management of pain

3.3. Emergency departments are responsible for regular monitoring of key clinical indicators related to best quality pain management (assessment, timeliness to intervention, and reassessment)

3.4. Pain management shall be included in the emergency department core curriculum for both nursing medical and other health care disciplines that work within the emergency department care team

3.5. Emergency clinicians will advocate for quality pain management across all professional disciplines

3.6. Nursing medical and other health care disciplines shall ensure that patients and carers are well informed about their pain management options, and be involved in the decision making process concerning their (or their dependants) pain management

3.7. Pain assessment and management will be based on the presentation of pain and not be biased by issues of culture, gender, age, substance use, chronic conditions, cognitive, behavioural and/or sensory impairment

This policy has been developed based on the NHMRC approved guidelines ‘Acute Pain Management: Scientific Evidence, Third Edition 2010 developed by the Australian and New Zealand College of Anaesthetists (ANZCA) Faculty of Pain Medicine).
Appendix 8 – Index of presentations and research papers (current to October 2011)

Published articles


Anne-Maree Kelly, Jonathan Knott ; Scott Bennetts ; Sue Huckson; 2009 Letter to the editor Treatment of migraine in Australia Emergency Departments Emergency Medicine Australasia (2009) 21, 333-334


Conference presentations


Scott Bennetts, Sue Huckson, on behalf of the NHMRC NICS Pain Management Initiative Advisory Committee. A National strategy for implementing acute pain management guidelines in Australian hospital emergency departments. 8th G-I-N Conference. Seoul, South Korea. August 2011


Poster presentations

