

# Audit of pain management in

# AUSTRALIAN EMERGENCY DEPARTMENTS



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## Introduction

As reported, there are approximately 6 million presentations to emergency departments (EDs) across Australia.<sup>(1)</sup> Local and international studies report that pain is the main complaint in 78%<sup>(2)</sup> to 86%<sup>(3)</sup> of patients who present to EDs.

In 2006, the NHMRC's National Institute of Clinical Studies (NICS) Emergency Care Program commissioned Collaborative Health Education and Research Centre (CHERC), Bendigo Health to undertake a national audit to identify current practice in ED pain management with reference to recommendations in Acute Pain Management: Scientific Evidence (second edition 2005).<sup>(4)</sup>

In May 2006, a forum of emergency care health professionals actively engaged in the NICS Emergency Care Community of Practice (CoP) identified ED pain management as a potential area of focus. They were concerned that:

- appropriate pain relief is not consistently provided in EDs
- pain is a cause of significant distress for patients in EDs
- inadequate pain management is a key issue identified in patient surveys and complaints.

The scope of this audit also included pre-hospital data for pain management prior to presentation to the ED.

## Key messages from Acute Pain Management: Scientific Evidence (second edition 2005)

- Provision of analgesia does not interfere with the diagnostic process in acute abdominal pain. (Level I evidence).
- Pethidine does not provide better pain relief than morphine in the treatment of renal colic. (Level II evidence).
- Triptan and phenothiazines (prochlorperazine, chlorpromazine) are effective in at least 75% of patients presenting to the ED with migraine. (Level II evidence).
- Femoral nerve blocks in combination with IV opioids are superior to IV opioids alone in the treatment of pain from a fractured neck of femur. (Level II evidence).
- To ensure optimal management of acute pain, EDs should adopt systems to ensure adequate assessment of pain, provision of timely and appropriate analgesia, frequent monitoring and reassessment of pain. (Clinical Practice Point).

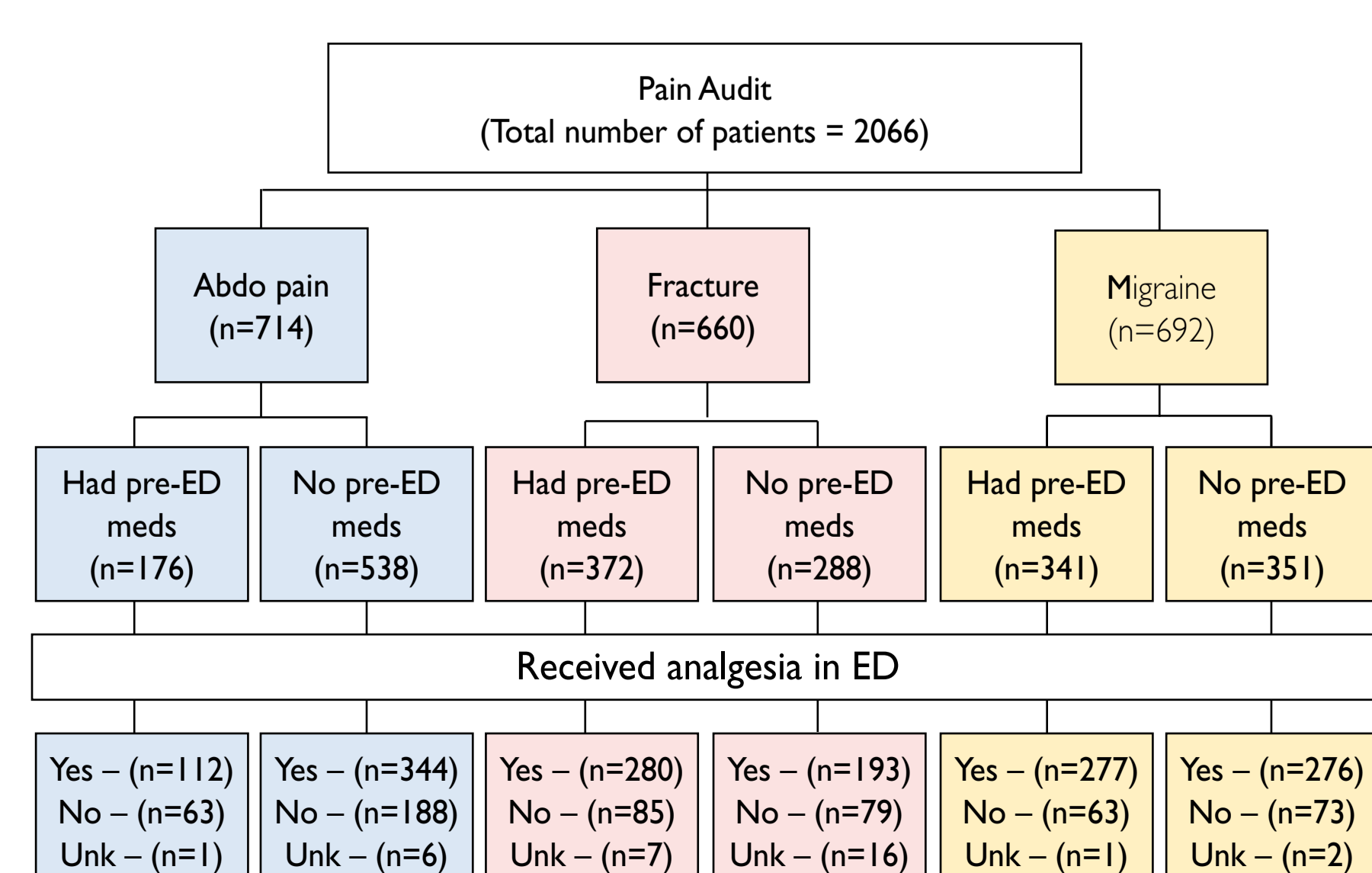
## Methodology

- Audit tools were developed in collaboration with the Emergency Care CoP research reference group to provide both content knowledge and face validity of the audit.
- Hospitals were asked to submit data for 20 records across three diagnostic cohorts: migraine, abdominal pain and fractured neck of femur (NOF).
- The organisational audit was designed to identify:
  - documentation and guidelines in place to support pain management
  - barriers and enablers to best practice pain management.
- The audit was pilot tested and refined for applicability in the ED setting.
- A retrospective chart audit covered the period June 2005 to June 2006 and included pre-hospital pain management data from ambulance handover sheets.
- 141 EDs were invited to participate by expression of interest.

## Results

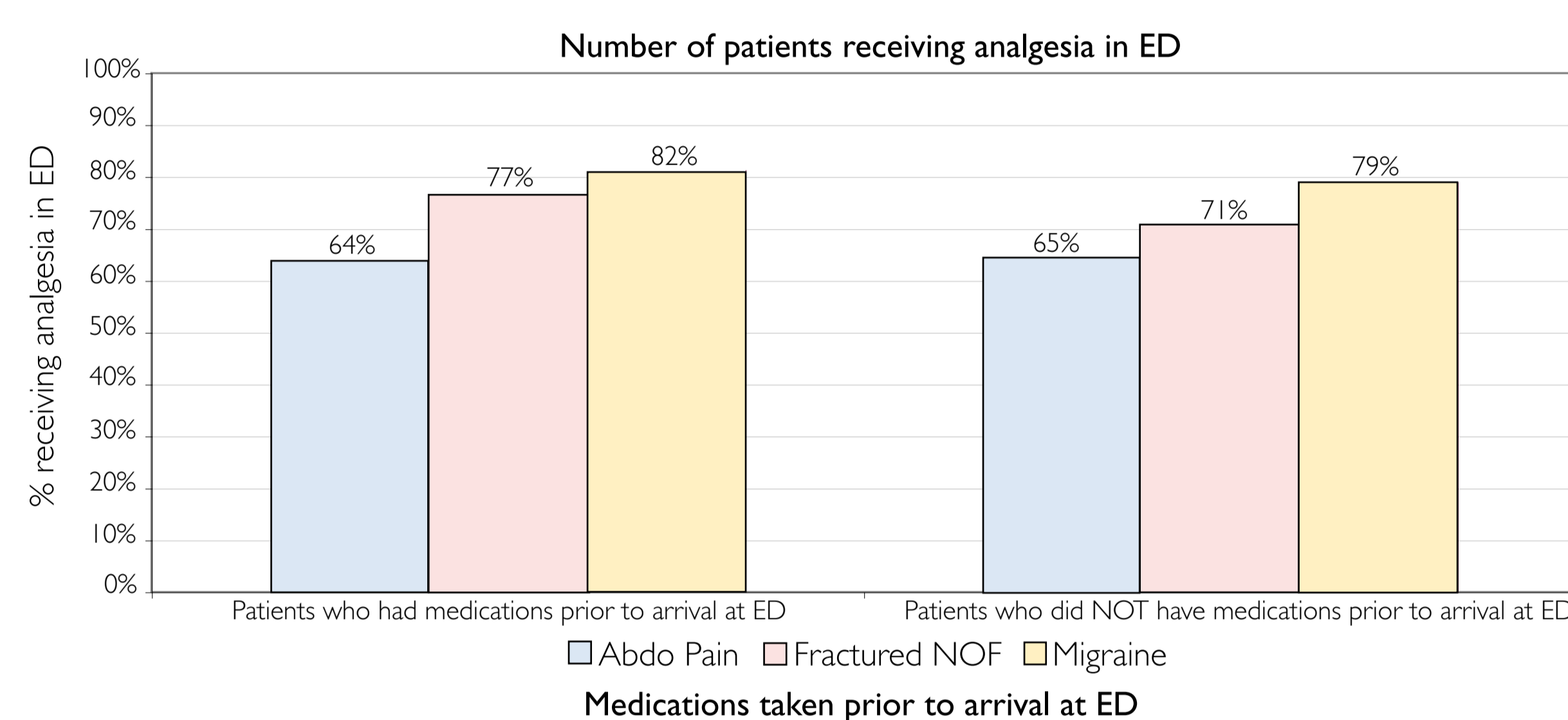
74 of the 141 EDs invited to participate responded positively, 36 EDs emergency departments submitted data (12 Vic, 11 NSW, 5 Qld, 4 SA, 4 WA). Those sites unable to submit data cited workload and lack of resources as a reason for not participating in the audit.

**FIGURE 1. Pain audit by cohort, pre-ED medications and analgesia received in ED**



**FIGURE 2. Percentage of patients who received analgesia across the three cohorts, by medications taken prior to arrival at the ED**

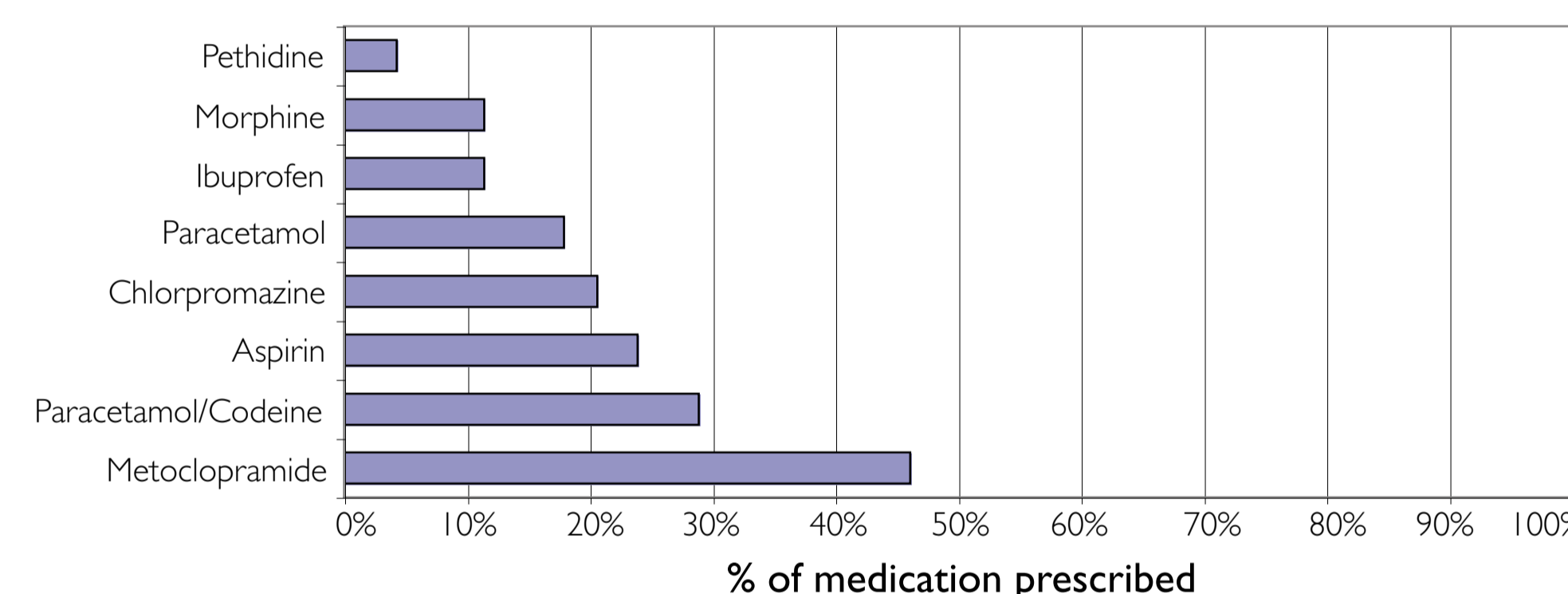
Patients presenting with painful conditions did not always receive analgesia. The percentages were similar regardless of whether analgesia had been administered pre-hospital or not.



**FIGURE 3. Percentage of medications prescribed for patients with migraine**

Note: Patients can be prescribed more than one medication for a condition.

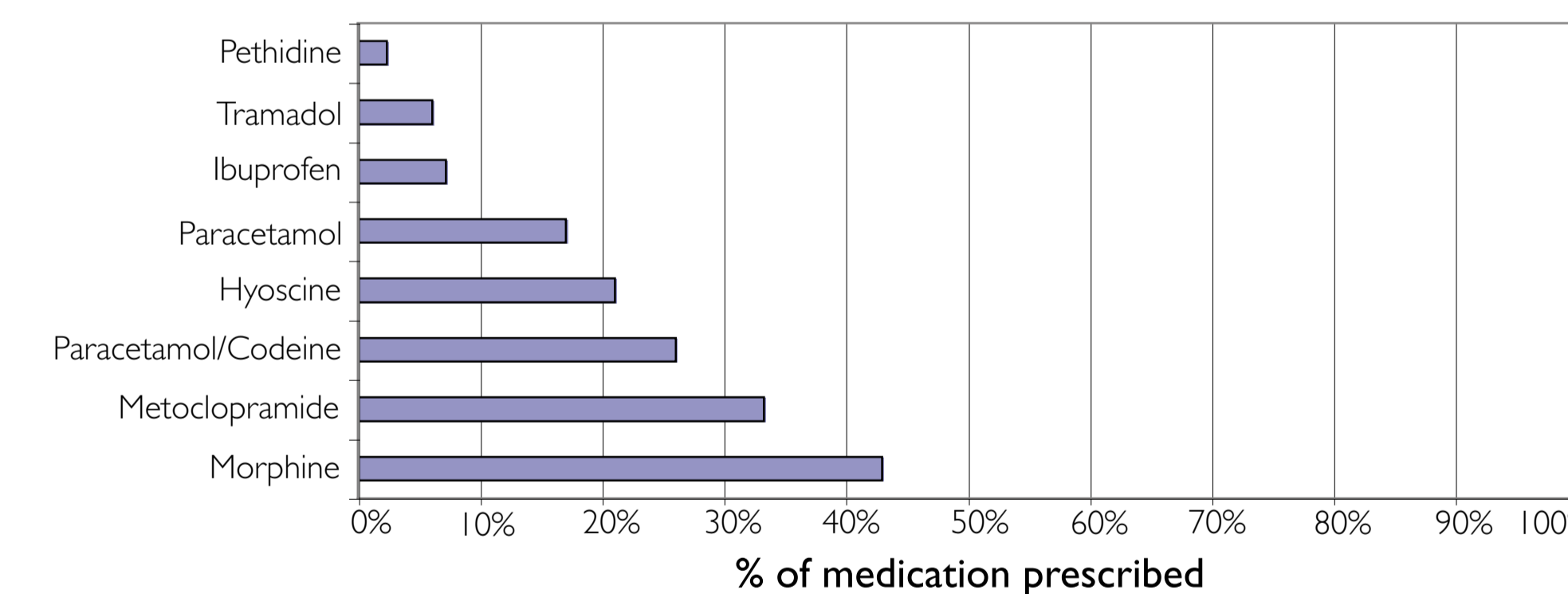
The most frequent drugs prescribed for migraine were metoclopramide, paracetamol/codeine, aspirin, and chlorpromazine. Morphine was prescribed to 11.4%, and pethidine to 4.3% of migraine patients.



**FIGURE 4. Percentage of medications prescribed for patients with abdominal pain**

Note: Patients can be prescribed more than one medication for a condition.

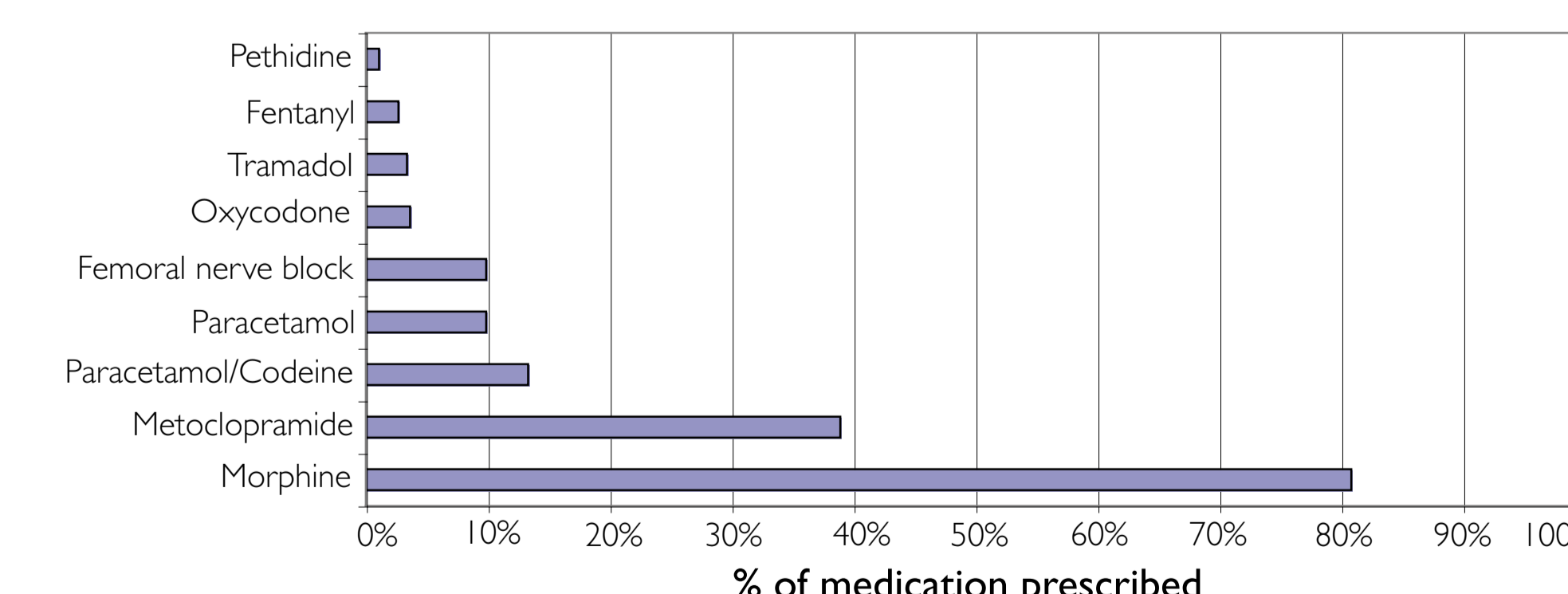
Morphine was the most common medication used for the management of abdominal pain.



**FIGURE 5. Percentage of medications prescribed for patients with fractured NOF**

Note: Patients can be prescribed more than one medication for a condition.

Morphine was prescribed in the majority of fractured NOF presentations. Nerve blocks were used in just 9.9% of cases.



**TABLE 1. Time to analgesia for patients who had no medication prior to presentation**

There was a statistically significant difference between the cohorts for time to analgesia. After adjusting for multiple comparisons, the median time to analgesia was significantly greater for the Fractured NOF cohort compared with both the Migraine and Abdominal Pain cohorts ( $p=0.001$  and  $p=0.006$  respectively).

Time to analgesia*	Abdominal pain (Total n=344)	Fractured NOF (Total n=193)	Migraine (Total n=276)
N	328	187	265
No time data available	16	6	11
Median	65 mins	90 mins	65 mins
IQR	34 mins, 116 mins	38 mins, 171 mins	31 mins, 116 mins
Min, Max	0 - 23 hrs	0 - 20 hrs	0 - 24 hrs

## Limitations of the audit

- Small sample size.
- 36 hospitals across 5 states.
- Total records, N=2,050 (95%). Some hospitals did not submit all 60 medical record audit forms.
- Busy clinical area with high staff turnover restricts participation in research.
- Audit tools were completed and returned in hard copy format. Spelling was sometimes illegible, particularly for medications.
- Recording of pain scores was not a part of this audit. Inclusion of this data may have enabled further understanding of reasons for patients not receiving analgesia and the timeliness of that which was administered.
- A variety of coding methods and software were used in EDs, for example ICD10 codes were specified to promote homogeneity in the sample population; however, some hospitals were still using ICD9 coding system.

## Discussion

- Patients had a median wait of over 60 minutes for analgesia, regardless of cohort. A median time to analgesia of 30 mins 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.<sup>(5)</sup>
- Long waits for analgesia may represent long waiting times for patients to see clinicians, delays in ordering analgesia, delays in administering ordered analgesia or a combination of all three factors across the participating sites.
- Many patients are receiving recommended analgesia for the three conditions that were audited.
- The migraine cohort generally received appropriate analgesia, with only 16% receiving opiates.
- The abdominal pain cohort was most commonly prescribed morphine, in a median time of 65 minutes. It is likely that patients received their analgesia without waiting for surgical opinion.
- The fractured NOF cohort showed the greatest deviation from recommended practice, with 10% receiving femoral nerve block. There is significant potential for improvement in practice.

## Acknowledgements

We acknowledge the participation of the following emergency departments in undertaking this audit:

Royal Perth Hospital, WA; Albany Hospital, WA; Armadale Health Service, WA; Joondalup Health Campus, WA; Royal Adelaide Hospital, SA; The Queen Elizabeth Hospital, SA; Flinders Medical Centre, SA; Noarlunga Health Service, SA; Royal Prince Alfred Hospital, NSW; Albury Base Hospital, NSW; Coffs Harbour Base Hospital, NSW; John Hunter Hospital, NSW; Hornsby Hospital, NSW; Auburn Hospital, NSW; Nepean Hospital, NSW; Dubbo Base Hospital, NSW; Shellharbour Hospital, NSW; Wyong Hospital, NSW; Wollongong Hospital, NSW; The Townsville Hospital, Qld; Princess Alexandra Hospital, Qld; Gladstone Hospital, Qld; McKay Base Hospital, Qld; Bundaberg Base Hospital, Qld; Cairns Regional Health Service, Vic; Williamstown Hospital, Vic; Wimmera Health Care Group, Vic; Austin Hospital, Vic; West Gippsland Healthcare Group, Vic; Bendigo Health Care Group, Vic; Sunshine Hospital, Vic; The Alfred Hospital, Vic; Royal Melbourne Hospital, Vic; Warrnambool Hospital, Vic; Western Hospital, Vic; Maroochydore Hospital, Vic.

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- 5 National Institute of Clinical Studies (2004) National Emergency Department Collaborative Report, NICS, Melbourne.

The National Health and Medical Research Council (NHMRC) is Australia's peak body for supporting health and medical research. As part of the NHMRC, the National Institute of Clinical Studies (NICS) works to improve health care by getting health and medical research into practice.

The NHMRC works in partnership with emergency care health professionals through the NICS Emergency Care Community of Practice.

For information about the NICS Emergency Care Community of Practice see [www.nhmrc.gov.au/nics](http://www.nhmrc.gov.au/nics)

