

# Pethidine prescribing in the ED... Let's be rational!

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## BACKGROUND

Pethidine is widely prescribed in hospitals, despite lack of research evidence to support its use. It has no proven advantage over other opioid analgesics and there is significant potential for iatrogenic problems with its use.

In Australia, the National Health and Medical Research Council has clearly identified the limitations of pethidine (Figure 1). In the USA, the Joint Commission on Accreditation of Health Care Organisations has identified use of pethidine as a negative marker for good prescribing practice. In Emergency Departments, where patients may have multiple problems and where a detailed medication history may not be available, pethidine use is best avoided.

### THE PROBLEM WITH PETHIDINE<sup>1</sup>

- Pethidine has a shorter duration of action than morphine with no additional analgesic benefit
- Pethidine has just as many side-effects as morphine (including bronchospasm and increased biliary pressure)
- Pethidine is metabolised to norpethidine, which has potential toxic effects (eg convulsions), especially in patients with renal dysfunction,
- Pethidine is associated with potentially serious interactions in combination with other drugs.

Because of its euphoric effects:

- Pethidine is the drug most commonly requested by patients seeking opioids, and
- Pethidine is the drug most commonly abused by health professionals.

<sup>1</sup> National Health and Medical Research Council. Acute pain management: scientific evidence, Commonwealth of Australia, 1999

Figure 1

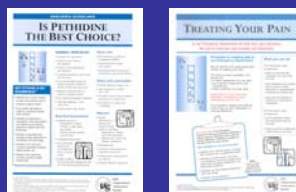
The NSW Health Department has been concerned for some time about use of pethidine in General Practice. NSW TAG was therefore commissioned to prepare evidence-based guidelines on rational use of opioids for primary care clinicians. Attempts to implement these guidelines and discourage use of pethidine in General Practice have been countered to some extent by ongoing use of pethidine in hospitals.

A survey of 18 NSW hospitals in 2001 showed that in many hospitals pethidine use in the Emergency Department accounted for a significant proportion of overall hospital use (average 15%; range 0 – 38%).



## OBJECTIVE

This multi-centre project aims to increase awareness of the limitations of pethidine in pain management and to rationalise pethidine prescribing, by use of an ongoing Drug Use Evaluation (DUE) process in hospital EDs. The goal is to reduce pethidine use by 50% with each audit cycle.



## METHODS

Twenty three hospitals in the TAG network are participating in this 12 month project which commenced in September 2002. DUE methodology is being used to: (1) facilitate clinical audit, (2) evaluate audit data against agreed standards, (3) feed back evaluated data, and (4) implement targeted interventions. Three audit cycles have been planned.

A clinical reference committee advises on key messages, feedback processes, educational interventions and mechanisms for on-going sustainability of the program.

A project coordinator in each hospital (usually a pharmacist or nurse) liaises with ED staff and hospital committees. Each coordinator facilitates data collection and feedback in their hospital. NSW TAG provides information and support to hospital coordinators to assist these processes.

Each audit cycle begins with a one week audit of pethidine prescribing episodes in the ED. Episodes are identified from existing Schedule 8 drug register entries. Characteristics of prescribing are recorded for each episode. Monthly pharmacy stock issues for pethidine and other analgesics are also recorded.

A feedback summary is prepared by each hospital coordinator using a format provided by NSW TAG. Prescribing patterns are compared with evidence-based guidelines. Areas of non-concordance are highlighted. Feedback is distributed to the ED Director, individual prescribers and the hospital Drug Committee. Targeted interventions are then developed and implemented collaboratively, in consultation with staff in all EDs, to address areas of non-concordance.

## EDUCATIONAL RESOURCES

Educational resources have been developed to provide both general information and specific guidance in circumstances where ongoing prescribing of pethidine has been identified. Resources include slide presentations for ED staff, posters for ED treatment areas, posters for patient waiting rooms, reminder bookmarks for staff and a web page providing answers to frequently asked questions about pethidine.



## RESULTS

Audit cycles have been scheduled for January, April and July 2003. Results to the end of April are presented in Figure 2, stratified by hospital Peer Grouping.

The first audit cycle was associated with an overall reduction in pethidine use by 33%. Progress is encouraging, but as yet inconclusive.

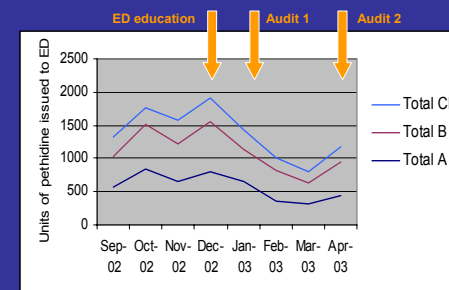


Figure 2  
Hospital Peer Groupings:  
A = Principal referral B = Major non-teaching C = District D = Community

The first clinical audit identified a high incidence of pethidine prescribing in renal and biliary colic, in patients with known or suspected morphine allergy and in identified repeat-presenting patients. Discussions with ED staff have focused on alternative approaches to management in these clinical circumstances.

A number of EDs have now introduced prescribing restrictions for pethidine or have made policy decisions to remove pethidine from the ED. Nurse prescribing protocols have also been modified to remove pethidine.

Increased use of desirable opioids (eg morphine) has been noted, but increased use of less desirable opioids (eg tramadol) is of concern. Interventions to highlight problems with tramadol are currently being designed and will be utilised in subsequent audit cycles.

