

# Obstacles to appropriate and timely pain relief in the Emergency Department for people with cognitive impairment

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# Why investigate pain management for people with a cognitive impairment in the Emergency Department?

**76% of Australians 65+ years have a disability, long term condition or chronic illness (including dementia)**

**Australian EDs manage 7.2 million attendances every year and 1.4 million ED patients are 65+**

**28% of ED patients 65+ years have cognitive impairment – mainly dementia and/or delirium**

**Pain in ED patients with cognitive impairment is largely unrecognised, under-reported, under-treated and waiting time for analgesia is substantial (median 149 minutes)**

**Poorly managed pain in people with cognitive impairment result in adverse events, hospital readmissions, increased functional decline, further cognitive decline, behavioural changes and co-morbid mental illness**

**(Australian Institute of Health and Welfare 2014)**



# **Pain management for people with a cognitive impairment in the Emergency Department: can we do better?**

**Study 1** Prevalence study- ED patients 65+ years with pain and a musculoskeletal injury

**Study 2** Focus group study – ED Nurse pain assessment and management of ED patients 65+

**Study 3** Comparative study- Time to Analgesia ED patients 65+ years with a long bone fracture

**Study 4** Cluster randomised controlled trial – Effectiveness of PAINAD tool in improving Time to Analgesia of ED patients 65+ years with cognitive impairment and a long bone fracture

# **Pain management for people with a cognitive impairment in the ED - can we do better?**

## **Funding**

**Emergency Care Institute of New South Wales and the Agency for Clinical Innovation. Neither body had any role in the conduct of the research.**

## **Ethical approvals**

**Approval was obtained from 8 participating hospitals' Human Research Ethics Committees (HREC 1212-430M) and operated according to the guidelines of the National Health and Medical Research Council of Australia.**

# Study 1 - Prevalence of ED patients 65+ with pain and a musculoskeletal injury

**Retrospective Medical Audit (1Jan–31Dec 2014) Four Sydney EDs (FirstNet™)**

## **Audit Findings**

**26.6% (N=44,778) 65+ YEARS**

**28.2% (N= 12,538) OF PEOPLE 65+ HAD ASSESSED COGNITIVE IMPAIRMENT (CI)**

**12.2% (N=5,468) OF PEOPLE 65+ HAD MUSCULOSKELETAL CONDITIONS/INJURIES**

**24.5% (N=1,343) OF PEOPLE 65+ WITH MUSCULOSKELETAL INJURIES HAD LONG BONE FRACTURE**

**Ratio of people with NO CI to people WITH CI and a long bone fracture was 5:1**



## **Study 2- ED Nurse pain assessment and management of ED patients 65+ years**

**16 Focus Groups, 4 Sydney EDs, 80 ED nurses**

**Question - What are the barriers and challenges to managing pain in the cognitively impaired (CI) older person in the ED?**

### **Findings – in relation to people with a CI**

**Lack of tools to assist pain assessment**

**Lack of nurse confidence in assessing pain**

**Nurses need family/carer advice on baseline pain scores**

**Nurses have difficulty interpreting behaviour as a possible pain cue**

**Nurses and doctors fear person's reactions to analgesia**

**ED policy limits timely and adequate staff attention to pain**



## **Study 3- Comparative study - Time to Analgesia of ED patients 56+ years with a long bone fracture**

**Hypothesis** - Probability 0.05, 85% power to show 25% absolute difference in Time to Analgesia (within 60 minutes) for ED patients with no CI, compared to ED patients with CI.

**Study Sample** (N=255) 73 people with CI (MMSE <24); 182 people with no CI

### **Patient Demographic profile**

**Age** Mean 81 years; Median 79 years, SD 8.4 years

**People with CI** - Median 86 years (p<0.001)

**Female** 200 (78.4%), **Male** 55 (21.5%)

**English as a first language** 230 (94.5%)

**Arrived by ambulance** 186 (72.7%)

**Fractures** - Neck of femur 123 (48.2%), Distal limb long bone 92 (36.07%), Humerus 33 (12.94%),

**Pelvis** 7 (2.75%)



## Study 3 FINDINGS - Triage

### Cognitive Impairment Diagnoses (n=73; 28.6%)

Dementia (n=53; 72.6%)

Unspecified cognitive impairment (n=7; 9.5%)

Alzheimer's (n=6; 8.2%)

Parkinson's syndrome (n=6; 8.2%)

Delirium (n=1; 0.5%)

### Triage Allocation

No statistical difference for people WITH CI and with no CI (Pearson's  $X^2$  test 2.00, p=0.16)

Triage Time - Mean 0.05 min. (SD 0.05 minutes); Time To Be Seen- Mean - 0.37 min. (SD 28 min) 9

## Study 3 Findings -Time to Analgesia

**Time to Analgesia (n=204)**

**83 minutes (Median) (SD 150 minutes)**

**<60minutes 77 (37.7%); >60minutes 127 (62.2%)**

**People with NO CI waited 72 minutes (Median) for analgesia**

**People WITH CI waited 149 minutes (Median) for analgesia**

**Significant difference in wait time of >60 minutes for analgesia**

**(Pearson's  $X^2$  test 7.51,  $p=0.006$ ) in people WITH CI (77%) versus**

**people with no CI (56%) (Odds Ratio 2.14, 95% CI 1.01-4.50p 0.045)**

# Study 3 Publication

The screenshot displays the journal's homepage for 'International Psychogeriatrics'. The header includes the journal title and a logo. Below the header, there is a navigation bar with links for 'Home', 'International Psychogeriatrics', 'Volume 27', 'Issue 02', and 'Feb 2014'. The main content area features the journal title, volume and issue information, and a 'Table of Contents' for February 2014, Volume 27, Issue 02. A 'Research Article' section highlights the study 'Cognitive impairment is a risk factor for delayed analgesia in older people with long bone fracture: a multicenter exploratory study' by Margaret Fry, Glenn Arendts, Lynn Chenoweth, and Cassie MacGregor. The article's abstract is partially visible at the bottom of the page.

**Fry M, Arendts G, Chenoweth L & MacGregor, C. 2014 Cognitive impairment is a risk factor for delayed analgesia in older people with long bone fracture: a multicentre exploratory study. *International Psychogeriatrics* <http://dx.doi.org/10.1017/S1041610214001732>**

## **Study 4- Two year cluster RCT- Effectiveness of the PAINAD.**

**Sites** 8 of 14 Sydney Metropolitan Tertiary and District EDs.

**Patient Inclusion criteria** (N=602) Age 65 + and suspected long bone fracture

**Patient Exclusion criteria** Triage Category 1, multi-trauma, haemodynamic or respiratory instability.

**Intervention** Use of Pain Assessment in Advanced Dementia (**PAINAD**) by trained ED nurses- in response to 5 pain cues: breathing, vocalization, facial expression, body language and consolability.

**Usual care** – Routine visual analogue pain assessment

**Primary Outcome** Time to analgesia.

**Secondary Outcomes** PAINAD use frequency and accuracy, analgesic.

# PAINAD TOOL

	0	1	2	Score
<b>Breathing Independent of vocalisation</b>	Normal	Occasional laboured breathing. Short period of hyperventilation	Noisy laboured breathing. Long period of hyperventilation. Cheyne-stokes respirations	
<b>Negative Vocalisation</b>	None	Occasional moan or groan. Low level speech with a negative or disapproving quality	Repeated troubled calling out. Loud moaning or groaning. Crying	
<b>Facial Expression</b>	Smiling, or inexpressive	Sad. Frightened. Frown	Facial grimacing	
<b>Body Language</b>	Relaxed	Tense. Distressed pacing. Fidgeting	Rigid. Fists clenched, knees pulled up. Pulling or pushing away. Striking out	
<b>Consolability</b>	No need to console	Distracted or reassured by voice or touch	Unable to console, distract or reassure	
				TOTAL 13

## Study 4- Baseline Data

**Gender**

**Female 84%, Male 16%**

**Triage Code**

**TC1 n=2 (0.2%)      TC2 n=32 (3.1%)  
TC3 n=358 (59.8%)      TC4 n= 208 (34.8%)**

**Reason for admission**

**Fall n=570 (94.7%)**

**Admission route**

**Home n=345 (57.4%)      Nursing home n=257 (42.6%)**

**SIS <4 , MMSE <24**

**271 (45.1%)**

**Fracture stabilised**

**497 (82.8%), 513 (85.2%) admitted to hospital**

## Study 4- Pain management

**Time to Analgesia**      **Average 126.6 minutes (SD 178.4min)**

**< 60 minutes**    **n=180**    **29.9%**    **(33min SD 18)**

**>60 minutes**    **n=422**    **70.1%**    **(182min SD 206)**

**Cognitive impairment (n=271)** Vs **No Cognitive impairment (n=331)**

**135.2min (SD 140.7)**

**119 .5min (SD 204.1)**

**PAINAD**

Vs

**Routine visual analogue**

**123 min (SD 123.4min)**

**128 min (SD 197.1min)**

# Analgesic Administered

<b>Required Analgesia</b>	<b>Given n=326 (54.3%), Declined 41 (6.8%)</b>
<b>1. Morphine</b>	<b>160 (36.0%)</b>
<b>2. Oxycodone</b>	<b>94 (21.2%)</b>
<b>3. Paracetamol</b>	<b>86 (19.4%)</b>
<b>4. Femoral block</b>	<b>40 (9.0%)</b>
<b>5. Panadeine</b>	<b>35 (7.8%)</b>
<b>6. Fentanyl</b>	<b>14 (3.2%)</b>



# Study 4- Effectiveness of the PAINAD for people with and without CI

## Time to Analgesia for people **WITH CI**

**PAINAD**

**Vs**

**Visual analogue scale**

Mean 129.4 (SD 114min)

Mean 141.0 (SD 162 min)

## Time to Analgesia for people **without CI**

**PAINAD**

**Vs**

**Visual analogue scale**

Mean 105.5 (SD 145min)

Mean 121.3 (SD 211 min)

# Acute pain management in the cognitively impaired older person - can we do better?

**Evidence demands that we must do better!**

