Best-practice Pain Management in the Emergency Department: The TARGET Pain Trial

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Background

- Surrogate endpoints in pain research have limitations

- There may be no account of effectiveness of analgesia

    e.g. time-to-analgesia may be short but analgesia sub-therapeutic

- There have been recent calls for more emphasis on:
    - Adequacy of analgesia[1]
    - Patient satisfaction[1]

[1]Ducharme J. Why is improving pain care so hard? *Emerg Med Australas* 2013; 25: 110–111

Hypothesis

if we decrease pain significantly (by ≥2 on a 0-10 scale)[1]

AND

if we decrease to a mild level (to <4 on a 0-10 scale)[2]

we would provide 'Adequate Analgesia'

Result: more patients would be 'very satisfied'
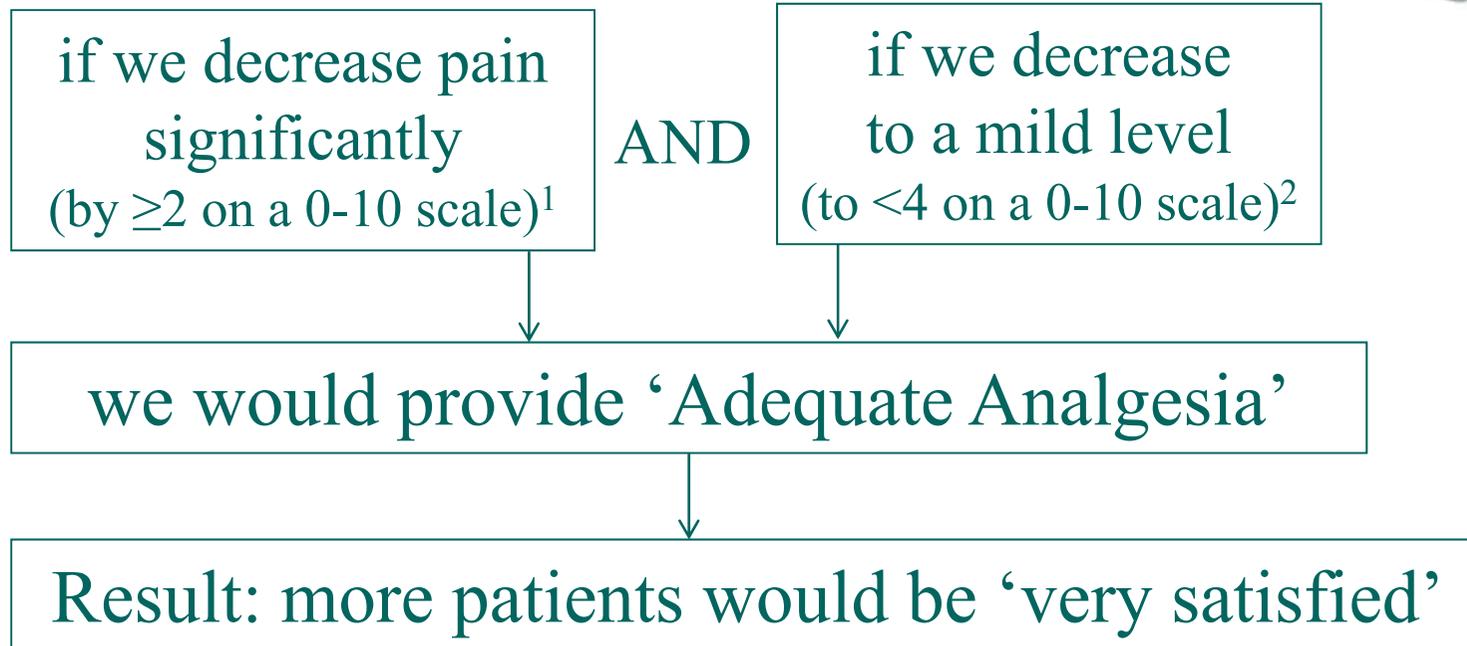
[1]Kelly AM. Setting the benchmark for research in the management of acute pain *Emerg Med (Fremantle)* 2001; 13: 57-60
[2]Todd KH et al. Pain in the ED: results of the pain and emergency medicine initiative (PEMI). *J Pain* 2007; 8: 460-6

Preliminary Observational Studies

Our 2 earlier studies show that if patients receive 'adequate analgesia' (as defined in our hypothesis), their odds of being very satisfied are significantly increased

	n	OR (95% CI)	p
Pilot observational study[1]	167	2.1 (1.1-3.9)	0.03
Cohort study[2]	476	7.8 (4.9-12.4)	<0.001

[1]*Emerg Med Australas* 2011; 23: 195-201
[2]*Acad Emerg Med* 2012; 19: 1212-1215
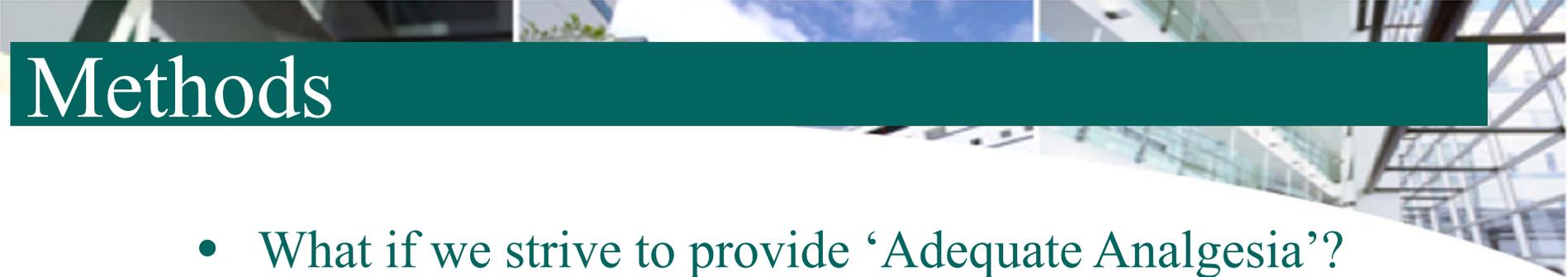
Methods

- What if we strive to provide 'Adequate Analgesia'?

- We ran a national, multi-centre, cluster-randomised, controlled,   clinical intervention trial

- Between June 2013 – March 2014

- In 9 EDs across Australia

  - Late intervention cluster :   4 EDs

  - Early intervention cluster :   5 EDs

- Enrolled adults with pain ≥ 4 at triage
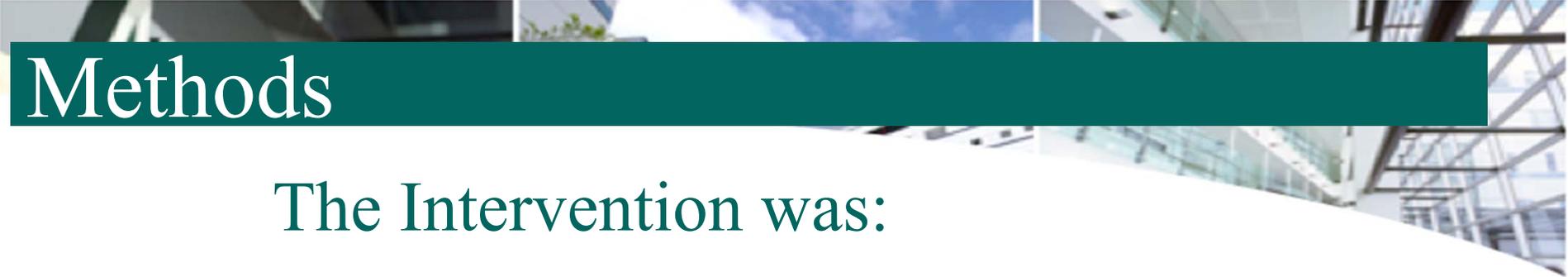
Methods

The Intervention was:

- Provision of 'Adequate Analgesia' to all patients
  - Aim to get their pain score down by ≥ 2 and to <4
- We had project clinical champions
- We provided staff education
  - in-service lectures
  - e-learning packages
  - email reminders
- TARGET posters around the ED

Methods

Data Collection Periods

| | 0 months | 3 months | 6 months |

Late intervention cluster

Early intervention cluster

Green indicates intervention period

Methods

Data Collection

- Undertaken at 0, 3 and 6 months

In the ED:

- demographics
- pain scores every 30 min
- analgesia provided

Follow up at 48 hours:

- blinded
- satisfaction with pain management
  - 6 point scale
    - very dissatisfied – very satisfied
- specific advice about pain
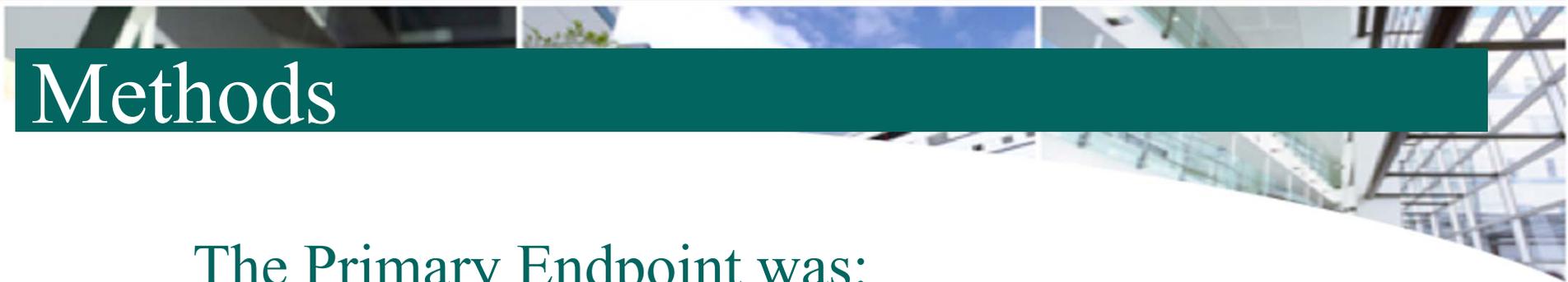
Methods

The Primary Endpoint was:

- Patient satisfaction with their pain management
  (we expected a 40% to 55% increase in being very satisfied post-intervention in the early cluster)

Secondary Endpoints:

- Proportion of patients provided 'adequate analgesia'

- Sustainability of the intervention

- Variables associated with being 'very satisfied'

Results

1. Logistic Regression (controlling for site, other confounders)

	0 months	3 months	p
Late intervention cluster OR (95%CI)	1	0.8 (0.5, 1.3)	0.35
Early intervention cluster OR (95%CI)	1	2.2 (1.5, 3.4)	<0.01

Conclusion:

Satisfaction unchanged in the late cluster when there was no intervention

Satisfaction increased significantly in the early cluster with the intervention

Methods (pooled data)

2. We pooled Data from both clusters:

- All data pre-intervention were pooled
- All data after 3 months of intervention were pooled

- We then compared % patients who were 'very satisfied' pre- and post-intervention

Results (pooled data)

variable	Pre-intervention (n=431)	Post-intervention (n=447)	p
Primary Endpoint			
Very satisfied with pain management, n (%)	185 (42.9)	241 (53.9)	0.001

Conclusion:

The % patients 'very satisfied' increased significantly with the intervention

Results (pooled data) - graphically
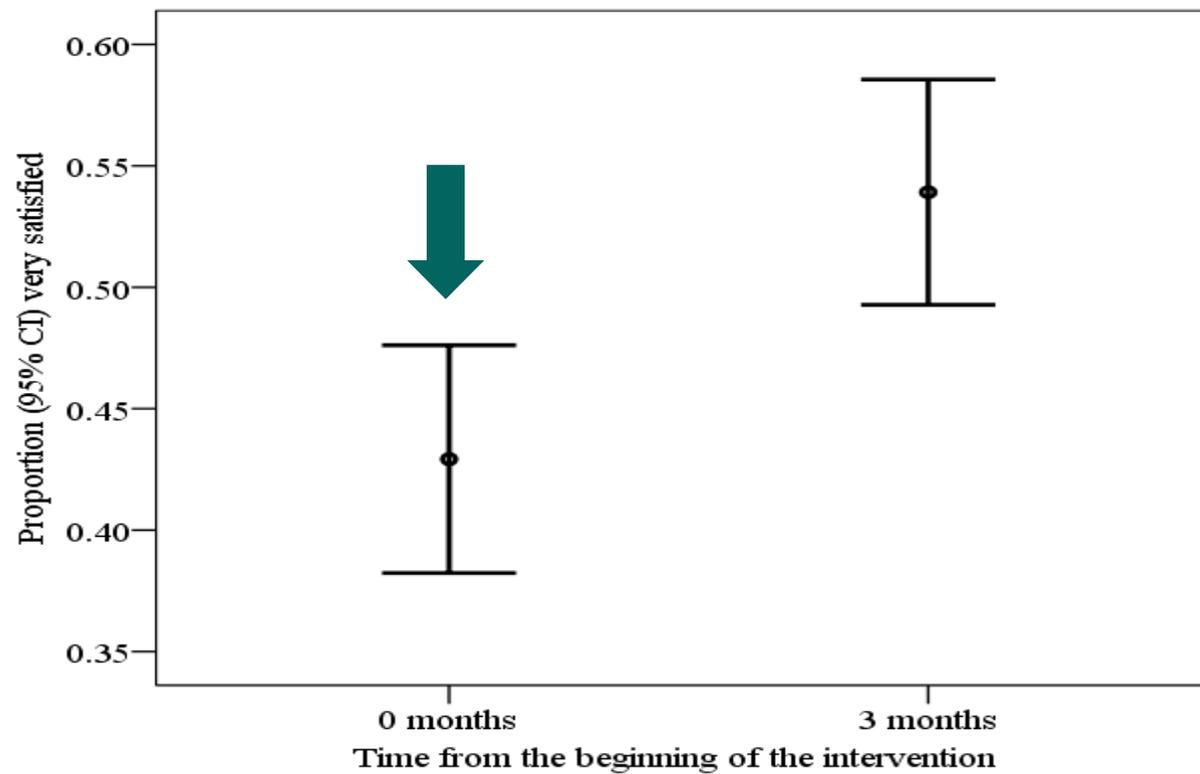
Results (pooled data)

variable	Pre-intervention (n=431)	Post-intervention (n=447)	p	
Primary Endpoint				
Very satisfied with pain management, n (%)	185 (42.9)	241 (53.9)	0.001	
Secondary Endpoints				
Adequate analgesia administered, n (%)	218 (50.6)	218 (48.8)	0.64	No change!
Pain advice from staff, n (%)	346 (80.5)	385 (86.1)	0.03	Significant increase
Any analgesia administered, n (%)	351 (81.4)	371 (83.0)	0.61	
Simple analgesia administered, n (%)	275 (63.8)	294 (65.8)	0.59	
Oral opioid administered, n (%)	119 (27.6)	117 (26.2)	0.69	
Parenteral opioid administered, n (%)	102 (23.7)	89 (19.9)	0.21	
Time to first analgesia, median (IQR)	37 (53)	31 (50)	0.18	Substantial increase
Time to adequate analgesia, n (%)	90 (68)	90 (90)	0.99	

Logistic Regression results

3. We undertook Logistic Regression to indentify
variables associated with being 'very satisfied'

variable	classification	OR (95%CI)	p
Adequate analgesia	not administered	1	
	administered	1.42 (1.12-1.80)	<0.01
Advice from staff regarding pain	not provided	1	
	provided	4.01 (2.86-5.62)	<0.01

Conclusion:

The odds of being 'very satisfied' are significantly increased if patients get
'adequate analgesia' or 'specific pain advice'

Conclusion

- *Striving* to provide 'adequate analgesia' increases patient satisfaction
  - However, it was not related to actual provision
  - More subtle   - better communication

                        - times to analgesia

                        - pain score measurement

- Promise as a *clinical target*:
  - clinically relevant, achievable endpoint

**Down by 2
Less than 4**
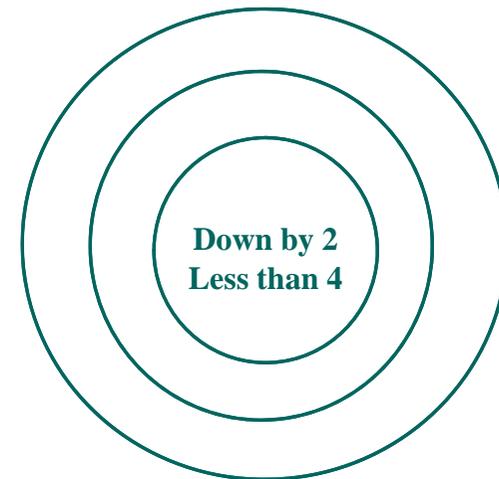
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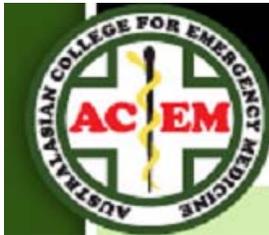
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  (Australasian College for Emergency Medicine)

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