

Emergency Nurse Practitioners:

Do they provide an effective service in managing minor injuries compared to Emergency Medicine Registrars?

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Objective/ Hypothesis

- Anecdote

- “ENPs are a valuable part of the ED team”


- Research Question

- “Are ENPs as effective as Emergency Medicine Registrars in managing minor injuries?”

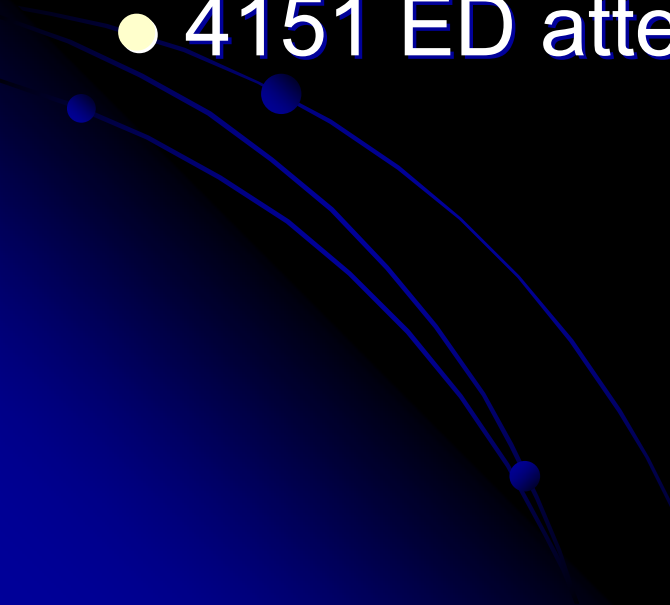
- Null Hypothesis

- That there is no difference between ENPs and EM Registrars in management of minor injuries.

Design/ Method 1

- Design
 - Prospective observational chart review
 - Ethics
 - Approved by Regional Ethics Committee
 - Setting
 - Auckland City Hospital Adult ED
 - 1/2/08-15/3/08
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Design/ Method 2

- Data Collection
 - Dual data entry (ENP and EM Registrar)
 - Daily Attendance Record Review
 - 4151 ED attendances
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Design/ Method 3

● Inclusions


- All patients presenting with minor trauma

● Exclusions

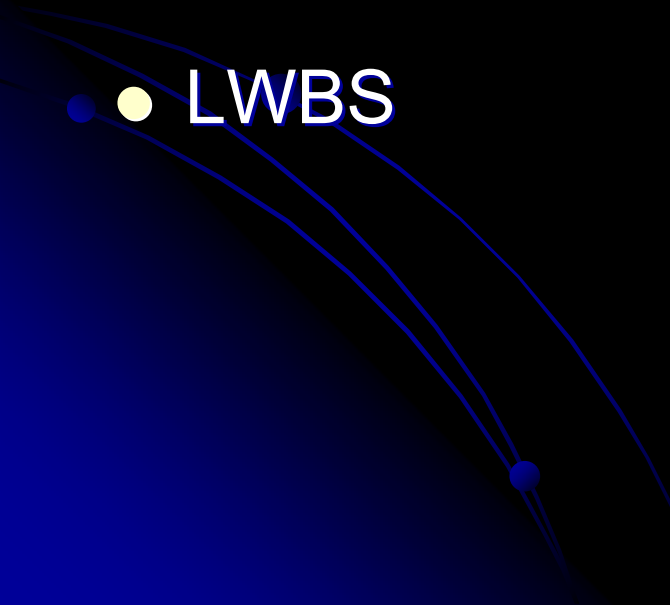
- Admission during this episode
- Initial consultation by another service
- Being seen by other EM staff
- Patients seen outside ENP hours

Outcomes


- Primary
 - LOS

 - Secondary
 - TBS
 - Missed fracture
 - Unexpected return
 - LWBS
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Definitions

- ED LOS ED length of stay
 - DAR LOS **Daily Attendance length of stay**
 - TBS Time to Being Seen
 - Treat time **ED LOS – TBS**
 - LWBS Left Without Being Seen
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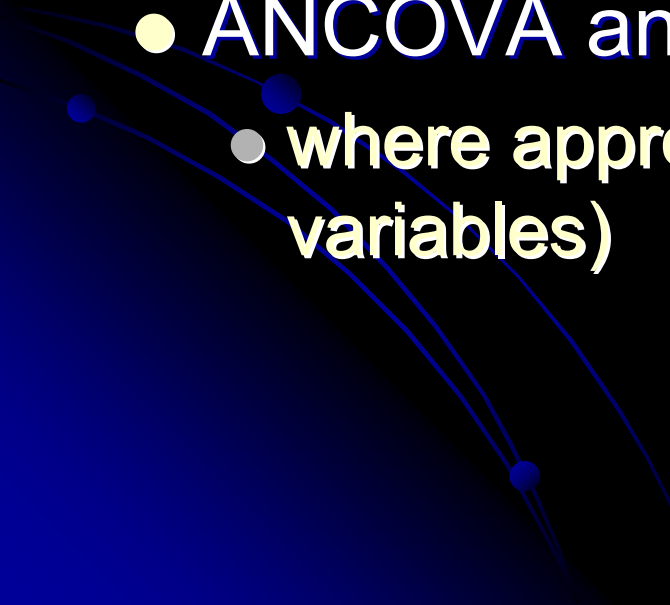
Pilot

- Electronic data collection form
 - 25 cases
 - Power calculation for study
 - Important difference 15min
 - Need 127 smallest group to detect this difference at $\alpha = 0.05$ with 80% power
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Study Cohort

- 1346 minor trauma
- 307 Included
 - 219 ENP
 - 88 EM Registrar
- 1039 excluded
 - 148 Admitted (otherwise eligible)
 - 514 Time (1930-0900 hours)
 - 377 Other Doctor

Statistics

- Chi² or Fishers exact test
 - categorical variables
 - Mann Whitney U test
 - time intervals
 - ANCOVA and Spearman Correlation
 - where appropriate (adjusting for confounding variables)
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Results 1 Baseline Data

Demographics		ENP (n = 219)	Registrar (n = 88)	P Value
Age	Mean (sd)	35(16)	44(21)	0.002*
Sex	Male %, 95% CI	154 70(64-76)	49 56(45.3-65.6)	0.01**
Triage	2 and 3 %, 95% CI	22 10.1(6.7-14.8)	22 25 (17.1-35)	0.0004**
	4 and 5 %, 95% CI	183 83.6(78.1-87.9)	59 67.1 (56.7-76)	
	Not given %, 95% CI	14 6.4(3.8-10.5)	7 8(3.7-15.8)	

* Mann Whitney U test

** Chi square test or Fisher exact test where appropriate

Results 2 Outcomes



	ENP (n = 219)	Registrar (n = 88)	P Value*
Time Interval	Median time (IQR) minutes		
Time to be seen	13 (5,26)	53 (22,84)	<0.0001
Treatment time	82 (46,122)	78 (34,122)	0.74
ED Discharge	100 (66,149)	137 (97,214)	<0.0001
DAR Discharge	118 (78,171)	166 (131,262)	<0.0001
ED discharge to DAR discharge	10 (5,22)	27 (11,45)	<0.0001

* Mann Whitney U test

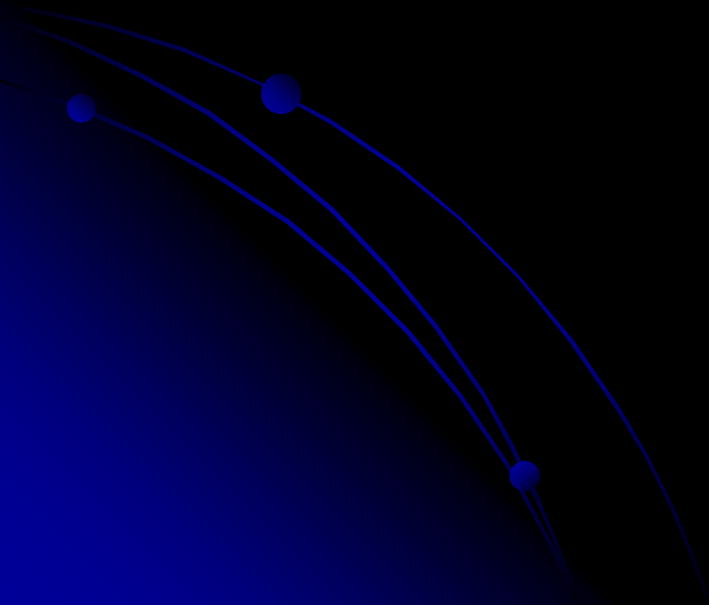


Results 3 Outcomes

		ENP (<i>n</i> = 219)	Registrar (<i>n</i> = 88)	<i>P</i> Value*
Missed #	n % (95%CI)	3 1.4 (2.8-4.1)	0 0 (0-5)	0.56
Unexpected return	n % (95%CI)	3 1.4 (2.8-4.1)	1 1.1 (0-6.7)	>0.9

* Mann Whitney U test

LWBS

- N=248
 - Represented 5.9% total ED discharges
 - In ENP hours: n=69 (27.8%)
 - Outside ENP hours: n=179 (72.2%)
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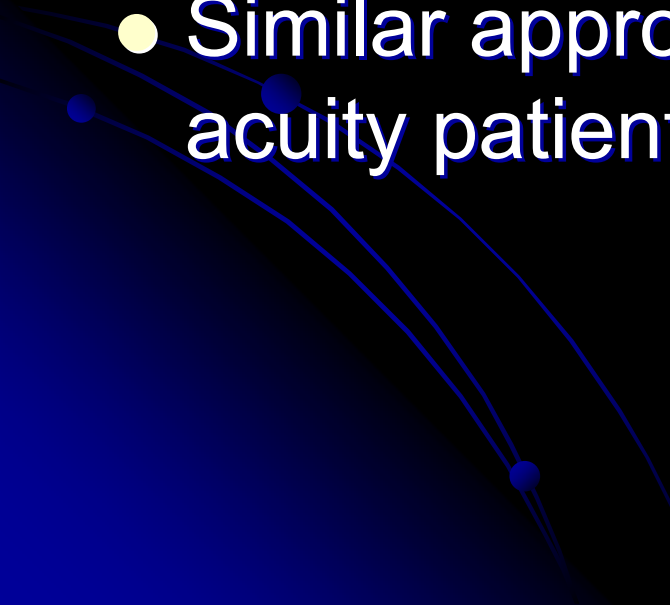
Discussion – previous knowledge

- **Systematic literature review**
 - **Cochrane, Medline, CINAHL**
 - **MeSH and free text**
 - **Population “ENP” AND Outcome “LOS”**
- **21 relevant articles**
 - **Australia, UK, USA and Europe (no NZ data)**
 - **3 RCT’s and 5 prospective studies**

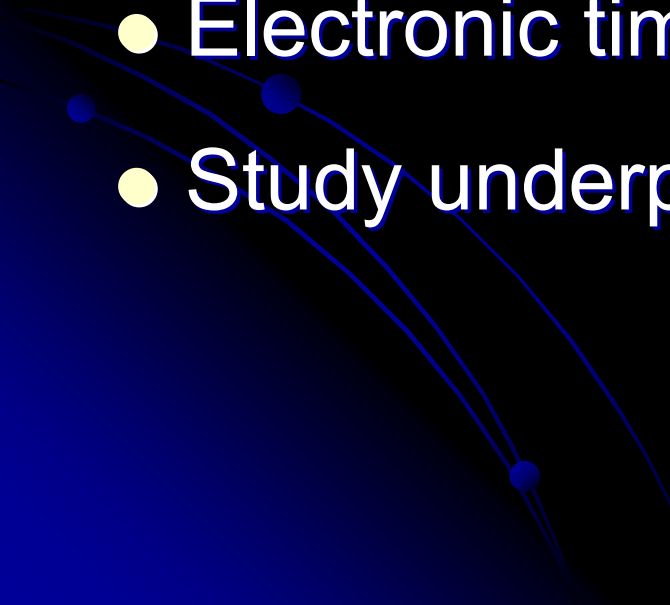
Discussion – previous knowledge

- Emergency Nurse Practitioners
 - reduce LOS
 - good patient satisfaction
- Differences in credentialing of nursing personnel make comparisons difficult
- Complements findings in retrospective Australian study 2005

Discussion - Implications

- ENP provide rapid and efficient service
 - Impact on EM registrar training
 - Resource allocation for night staffing
 - Similar appropriate resources for higher acuity patients needs to be considered
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Discussion - Limitations

- Selection bias
 - Non-consecutive cohort
 - Data collectors not blinded
 - Electronic times not reflecting actual times
 - Study underpowered
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Conclusions

- “ENPs appear to see minor injury patients faster than EM Registrars, resulting in a shorter LOS”.
- The study was too small to detect any difference in missed fracture rate or unexpected returns.

Questions

