

# The cost of major trauma care to DHBs

Chris Harmston

Northland District Health board

# Outline

- Current data on trauma costs
- Funding and costing in New Zealand
- Cost of major trauma in Northland



# Why?

- Increased scrutiny in public health funding
- Competing demands
- Cost improvement

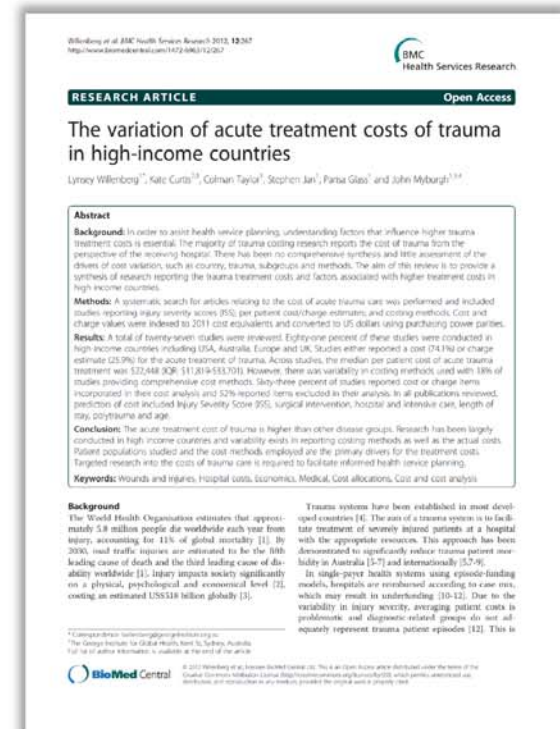


# Current literature

- High income countries
- 2 Systematic reviews
  - 1 focused on worldwide costs
  - 1 focused on cost drivers
- Queensland data


# Current literature

- 27 Studies
- 20 Reported on major trauma
- Variability in methodology

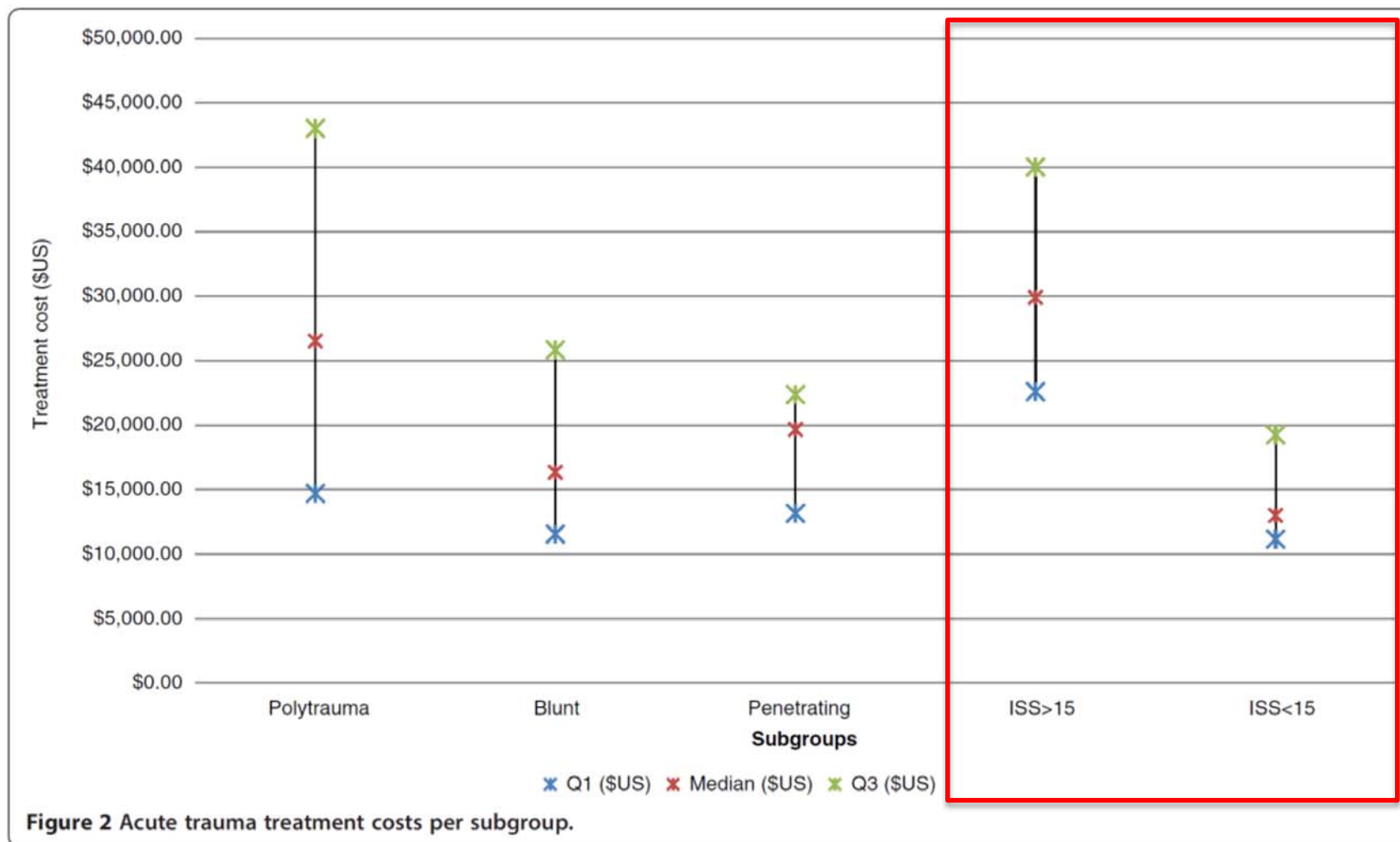


# Current literature

Country	Articles	Median US \$ Cost
Switzerland	1	95,380
Germany	3	41,522
Australia	2	33,130
USA	16	22,115
UK	3	18,535
Canada	1	8,196



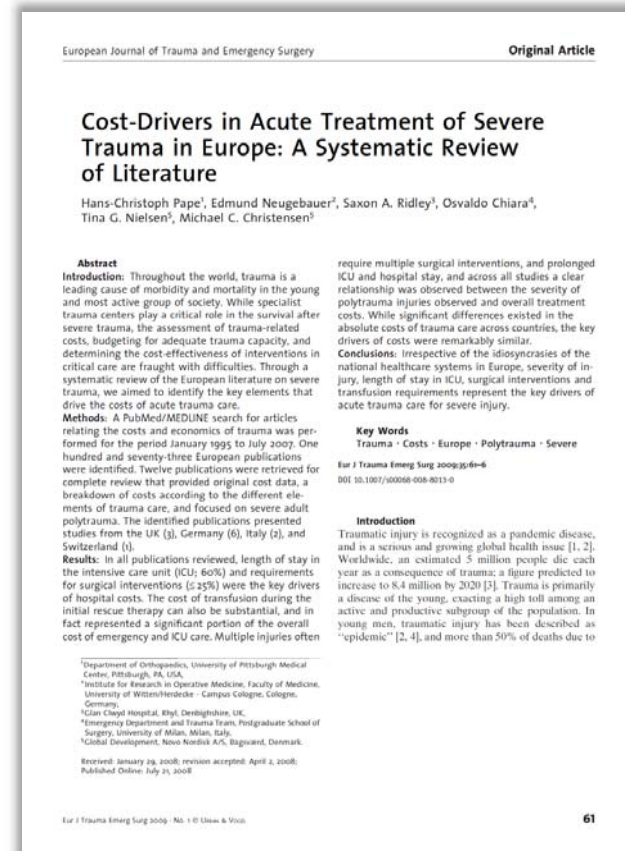
# Current literature





# Current literature

- Adult polytrauma
- Cost drivers
  - ICU
  - Operative intervention
  - Injury severity





# Current literature

- 17,500 Patients
- 2000 Major trauma
- Mean cost \$28,584



# Current literature

ISS	n	%	Median Cost	Total Cost
<9	9788	68	3510	56,880,168
9-12	2401	17	9704	33,630,296
13-15	376	3	9082	5,025,241
16-24	973	7	11,813	21,984,736
25-39	689	5	17,934	28,620,365
40-75	104	1	15,876	4,708,848

# Current literature

- Comparing coding costs and actual costs
- \$134/day
- \$14.5m dollars

# Take home messages

1. Variation in costs around the world
2. Discrepancy actual costs and coding
3. Consistent cost drivers



# Funding and costing in NZ

- Funding system
- Costing systems



# Funding of healthcare in NZ

- Vote health \$16.7 Billion
- ACC \$4 Billion
- Private healthcare



# Funding of healthcare NZ

- Population based funding formula
- ACC
  - Block funding
  - Claims





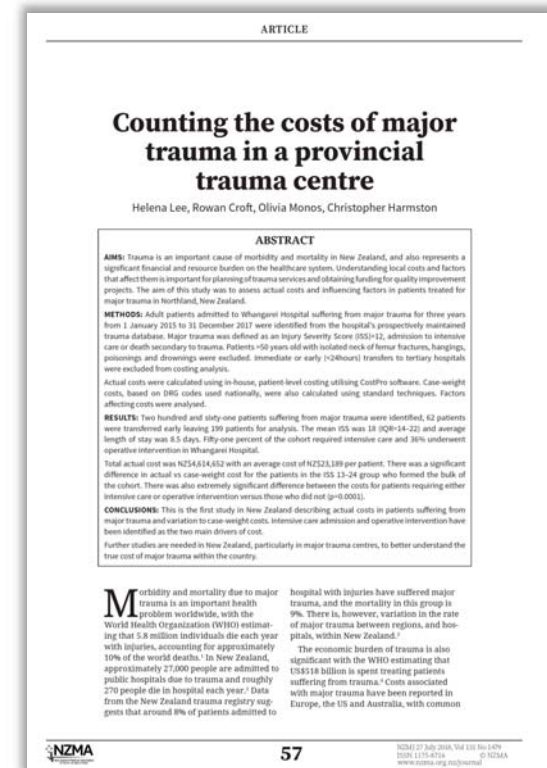
# Costing of Healthcare in NZ

- Diagnosis related groups
  - Codes
  - Average costs
- Actual costs
  - NZ common costings standard
  - Costs each part of care



# Northland Costs Study

- Aim
  - Assess actual costs
  - Factors influencing costs
  - Compare actual and DRG costs



# Northland Costs Study

- Methods
  - 2 years
  - Major trauma
    - ISS>12
    - ICU Admission
    - Death
  - Excluded transfers within 24hours

# Northland Costs Study

- Results
  - 199 patients
  - Median age 45
  - M:F 2.4:1
  - 33% of patients identified as Maori
  - 15% Outside Northland

# Northland Costs Study

- 183 patients ISS>112
- Median ISS 18
- Median LOS 8.5 days
- Mortality 12.5%



# Northland Costs Study

- Actual Costs
  - Overall cost \$4.6 million
  - Mean \$23 000
- DRG costs
  - Overall cost \$3.39 million
  - Mean \$17 000

# Northland Costs Study

ISS group	n	(LOS) (Days)	Mean actual cost (NZ\$)	Mean case-weight cost (NZ\$)	Mean deviation from case-weight cost (NZ\$)	p
<13	16	9.2	\$24,629	\$15,605	-\$9,024	0.936
13-24	155	8.6	\$22,684	\$16,538	-\$6,146	0.144
25-40	22	8.1	\$29,466	\$23,654	-\$5,812	0.960
40+	6	1.1	\$9,379	\$9,654	\$275	0.928





# Northland Costs Study

Intervention		Ave. LOS (Days)	Mean ISS (IQR)	Mean actual cost (NZ\$)	Mean case-weight cost (NZ\$)	Mean deviation from case-weight cost (NZ\$)
ICU	Yes	10.4	18.6 (13-22)	\$32,584	\$22,801	-\$9,782
	No	6.4	17.6 (13-18)	\$13,507	\$11,106	-\$2,401
p		0.0004	0.038	0.008	0.294	
Operation	Yes	12.2	18.8 (14-22)	\$38,839	\$28,066	-\$10,774
	No	6.2	17.9 (13-21)	\$14,508	\$10,927	-\$3,581
p		< .00001	0.171	0.001	0.007	

# Northland Costs study

- Mean cost \$23 000
- Actual and DRG costs
- Cost drivers as per previous studies

# Conclusions

- Understanding costs is important
- Body of literature on costs of trauma
- Need to expand NZ cost data.....



# Questions?

