



# The Cost of Trauma in NSW

## Phase 1: Acute Care

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The George Institute



# Outline

- Background
  - Trauma as a disease/burden
- Problem
  - Trauma system
  - Costs
- Pilot research
- Proposal
- Implications and future directions



# Background: Trauma as a Disease

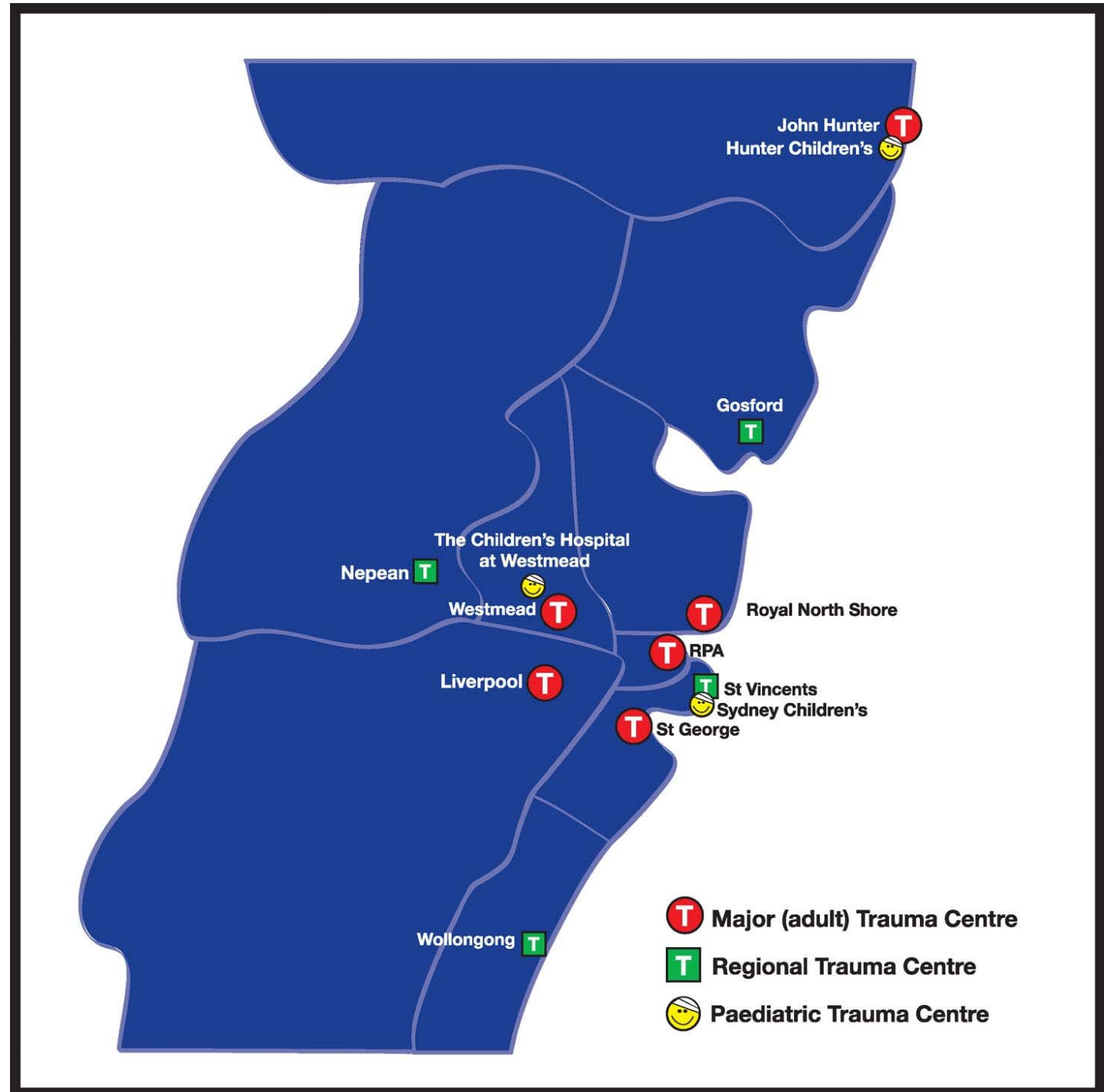
- 11% global mortality and 13% disability
- 4<sup>th</sup> most common cause of death
- Leading cause age <65 (CV+Ca)
- Admissions - external cause 839,266 (05/06)
- \$4.1 Billion per year (8.3% of expenditure)



# Trauma: definition

- Major trauma mechanisms
- Injury severity scores
  - ISS <9 – minor/moderate
  - ISS 9-15 - major
  - ISS >15 - severe
- ITIM
- Severe Trauma
  - In 2007.....2,271 ISS >15 (ITIM)

- 1993
- Bypass
- Data
- Service





# The problem

- Trauma system review: Garling
- ISS>15 represents 20% of trauma admit
- Estimate 9,000 major to severe admits
  - Each centre has database
- Costs unknown – all phases
- Planning implications



# Feasibility Pilot at SGH

## Aim

To determine direct cost of acute care episode of the trauma patient

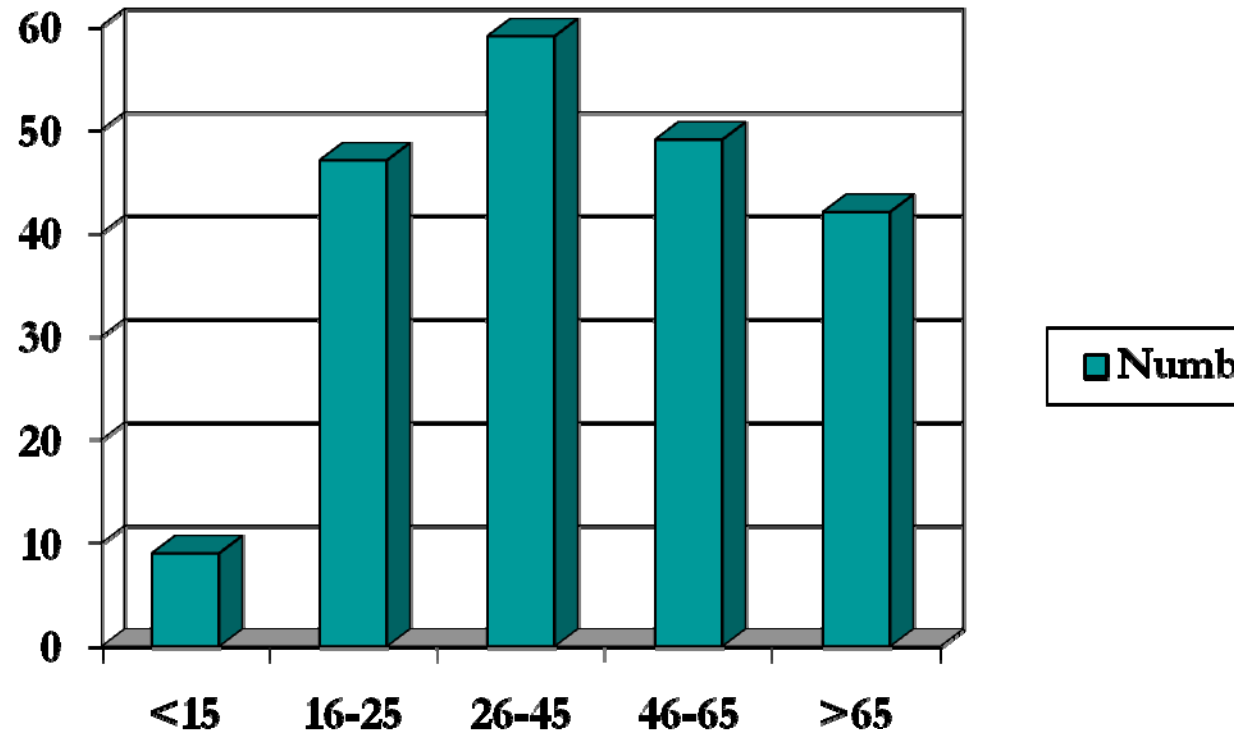
## Methods

- Trauma database: Demographic & injury data
- Casemix
  - Costs data, Trendstar
  - DRG cost weights and actual costs



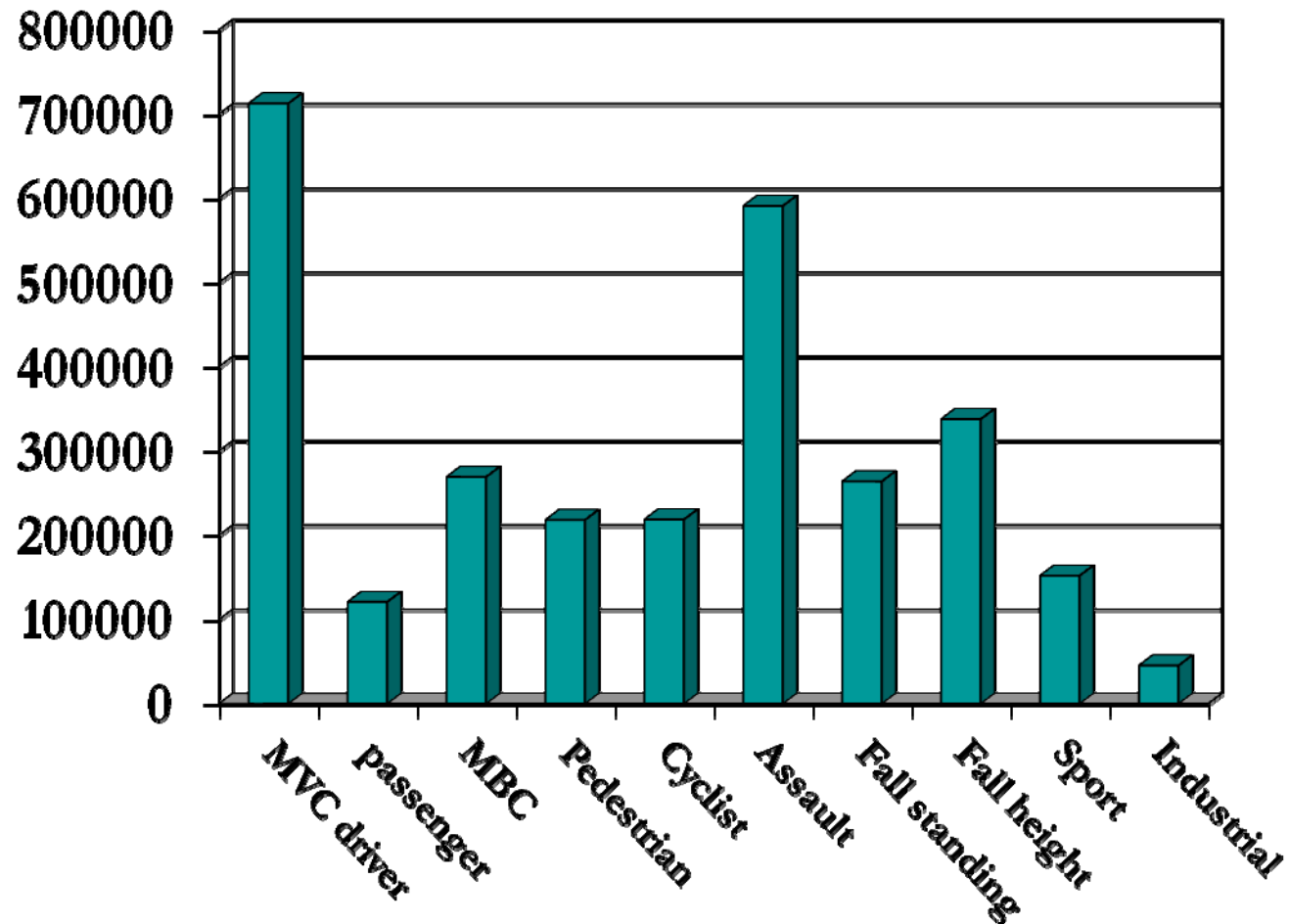
# Feasibility Results: Age

- 206 trauma admissions
- 74% male
- \$3.02 million



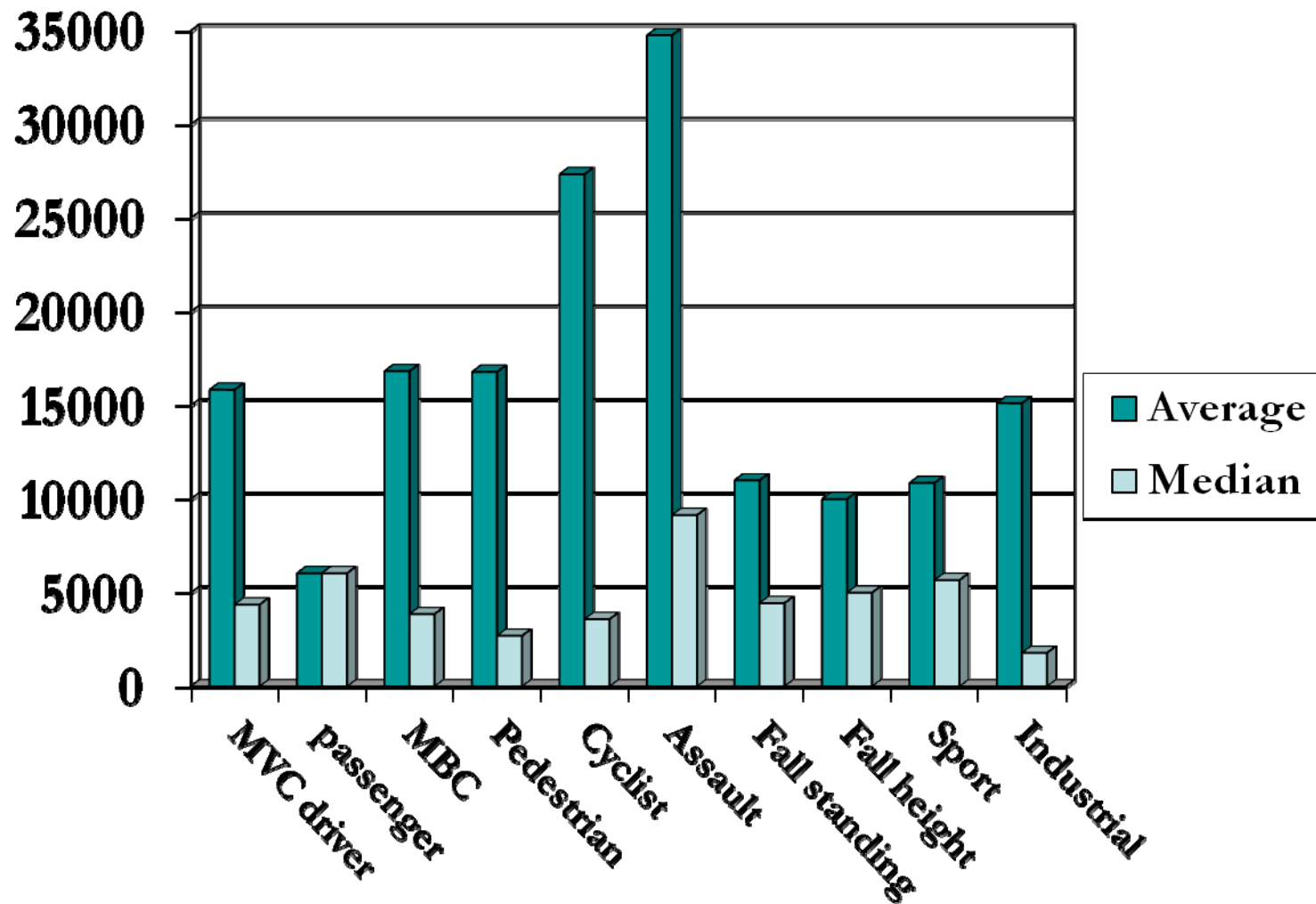


# Cost per mechanism of injury



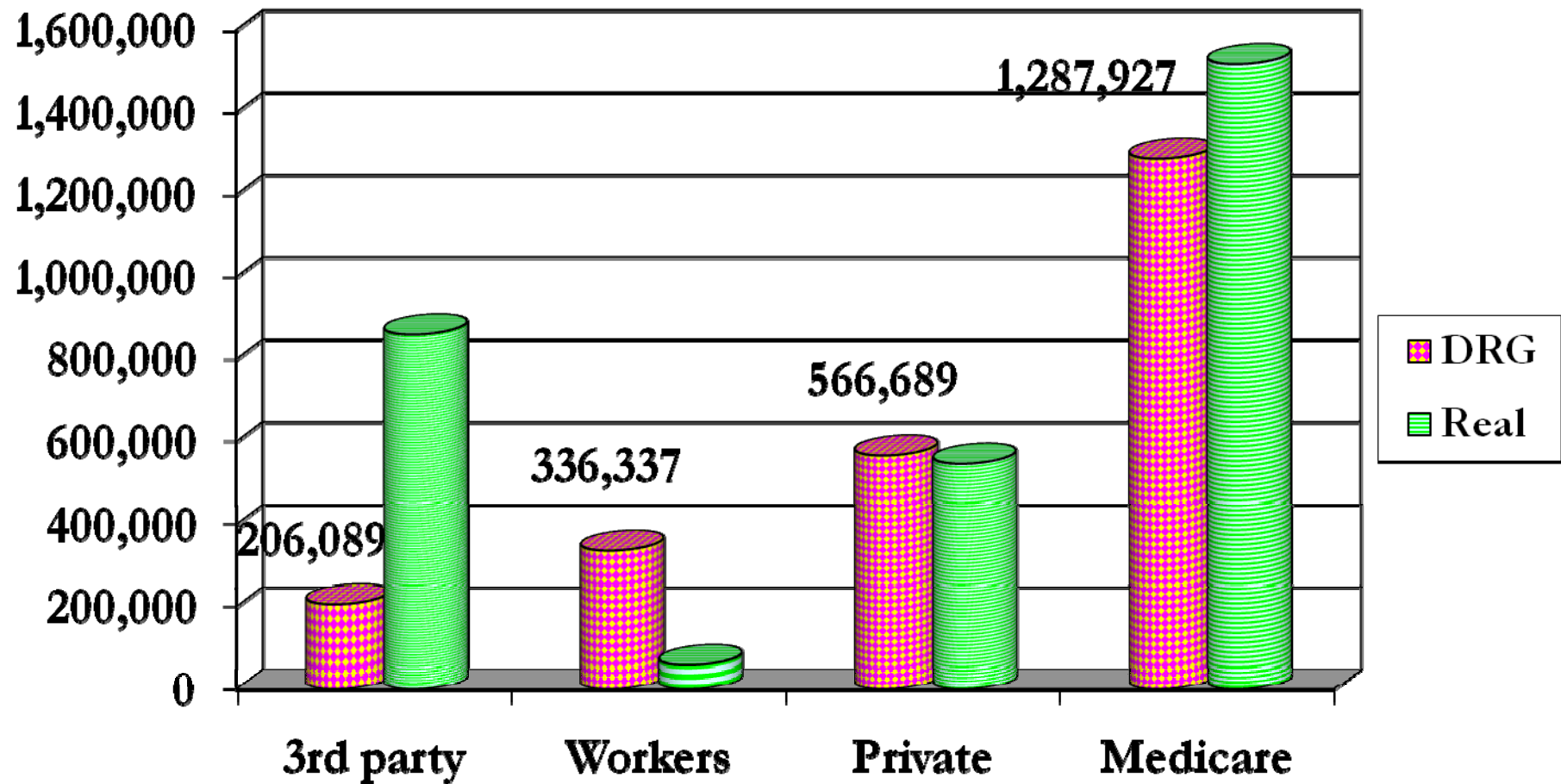


# Average cost per MOI





# DRG allocation vs Actual cost





# Feasibility Pilot at SGH

## Conclusion

- Linkage of acute care data is possible
- Variance in perceived/allocated costs
- Larger cross sectional study is required
  - Spinal
  - Burns
  - Paediatric



# What is needed?

- Accurate information on financial burden of trauma
  - NSW Trauma Centres
    - Acute phase
  - Rehabilitation
  - Associated expenses
  - High risk/cost groups



# Proposal: Phase 1

- Determine the acute cost to trauma centre
  - Characteristics of high cost patient groups
- Collaborative research
  - NSW Trauma services
    - NSW Institute of Trauma
  - George Institute
  - University of Sydney, Faculties: Nursing & HI
  - National Centre for Classification in Health



# Preparation

- Ethics
- Support of stakeholders
- Development of:
  - Clear instruction for each site
    - trauma data points
    - casemix data
  - Database, data linkage and analysis plan



## Methods: Trauma data

- Identify major trauma patients 2008
  - ISS >9
- Trauma database
  - Demographic, cause of Injury
  - MRN, ISS, Injuries (Region and AIS)
- Casemix data
  - **Direct** (Trendstar, staffing, dressings, pharmacy, investigations)
  - **Cost weight** (ICD-10 codes, DRG, NSW average, previous fiscal year DRG cost weight)



## Outcomes - Implications for Health Policy

- Accurate cost determination
- Development of a report for NSW Health
  - Publish, disseminate
- Informative trauma planning – towards reduction
  - Linkage between trauma and casemix
- Identification of groups for injury prevention
- Stepping stone for Phase 2
  - Span of trauma care costs