

*Assessing the medical
costs of injury using linked
anonymised datasets*

“The impossible is often the untried”

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“There is no crisis to which academics will not respond with a seminar”

Aim of study

utilise large scale anonymised datasets, linked via unique identifiers, to estimate the medical costs of injury incurred by various sectors within the health care system!

“Goals are dreams with deadlines!”

Scope for study

So what!



There are plenty of other cost of injury studies out there!

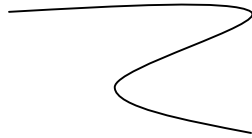


Big deal!

Scope for study

Reason 1: Current problems

confidentiality constraints prevent researchers from accessing data



focus on single/small number of health care sectors



patients journey through entire health sector can't be traced over time

Scope for study

Reason 2: Ready made solution

advances in anonymous record linkage techniques

Multiple datasets can be analysed without contravening confidentiality

longitudinal studies incorporating a plethora of health service sectors can be performed

Scope for study

Reason 3: Changes in health care utilisation

continued advances in medical care

more survivors of major trauma

increasingly long programme of
recovery

Materials and methods

Design – longitudinal; retrospective; quantitative

Setting – Swansea

Data sources

- Administrative Register (AR) – study population
- All Wales Injury Surveillance System (AWISS) – A&E treatment
- Patient Episode Database for Wales (PEDW) – hospital care
- Outpatient – rehabilitative care
- GP – primary care

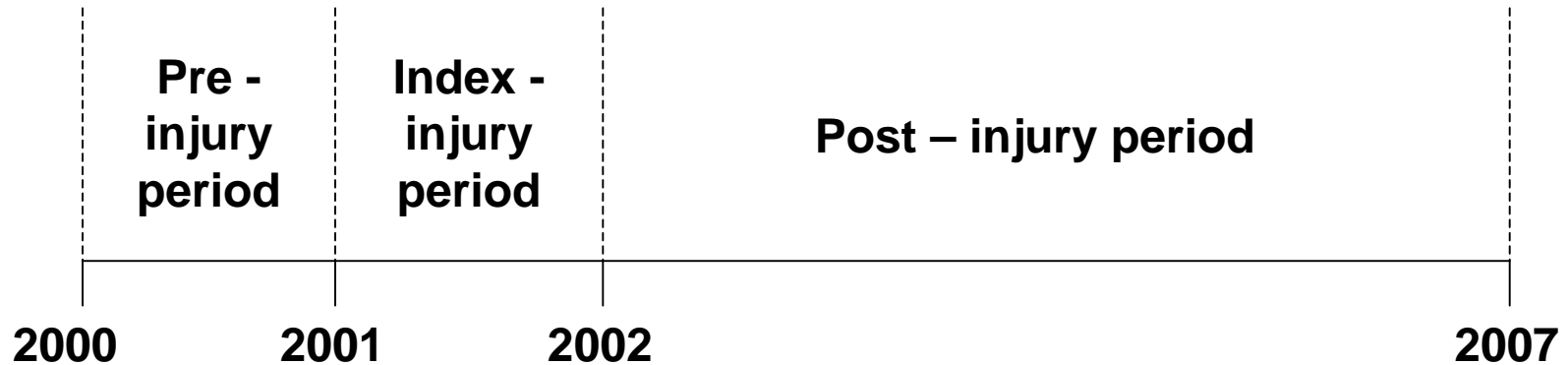
Plan of action

1. Search - A&E / hospital; 01/04/2001 – 31/03/2002
2. Identify - electronic cohort of injured/non-injured individuals
3. Follow-up - A&E / hospital / outpatients / GP; treatment & recovery phases; 1 year pre-injury / post-injury up to 31/03/2007
4. Calculate - direct medical costs; stratify by age / gender / mechanism / type / social class
5. Compare/contrast - injured/non-injured cohorts

“In theory there is no difference between theory and practice. In practice there is”

Plan of action

Consideration 1 – alternative stages of injury



The study population will be grouped and analysed separately depending on whether they have sustained an injury in the pre-/post-injury periods

Plan of action

Consideration 1- alternative stages of injury (continued)

- Injury events (A&E; hospital) occurring within X days of each other assumed to be related to the same injury - Research question 2
- Alternative post-injury cut-offs depending on presence of additional A&E/hospital events during follow-up period

Plan of action

Consideration 2 – potential confounders

- Injury severity / type
- Pre – injury health care utilisation
- Co-morbidities
- Demographics

Solution: match injury group to cohort of non-injured individuals in terms of the confounding variable

Plan of action

Consideration 3 – calculating costs

- direct medical costs of injury only
 - incidence based approach
 - ‘bottom-up’ approach
 - costs defined as the “product of incidence, transition probabilities, health care use and unit costs” (EUROCCOST)
- unit costs from Trust Financial Return 2 (TFR2) accounts

Research questions

1. Do the direct medical costs of injury reported following record linkage differ from those based on the separate parallel analysis of unconnected health datasets?
2. How many days should be allowed between 2 hospital admissions before the second can be classed as a new injury event?

Research questions

3. Are injury related health care contacts occurring multiple years apart connected with each other?
4. Does accounting for the long-term affects of injury impact upon the scale of the direct medical costs reported?

Thank you for listening

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"I never heard of anyone pulling a muscle while thinking."