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AUSTRALIAN CENTRE
FOR
ECONOMIC RESEARCH
ON HEALTH

Is injury compensation bad for health?

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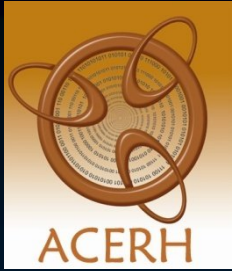
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1-2 October 2009



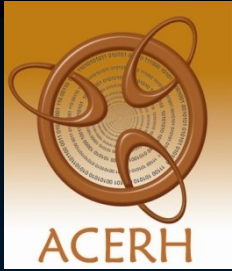
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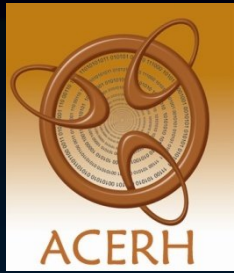
Summary

- Background
 - Theories
 - Research in this field
 - Rationale for this study
- Method
- Results
- Conclusion and implications



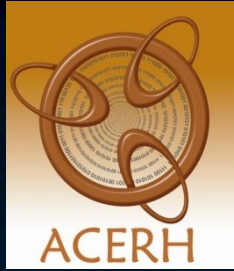
Definitions

- Compensation
 - Financial recompense for losses arising from injury (i.e., a legal remedy or “treatment”)
 - Two categories of loss
 - Economic losses (e.g., lost income, medical costs)
 - Non-economic losses (e.g., pain and suffering)
 - Focus on compensation for road and work-related injuries
- Health
 - “Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity.” (WHO 1948)



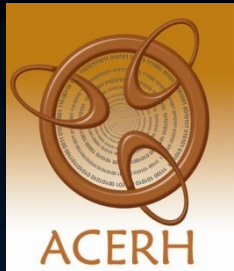
Theories as to why compensation may affect health status

- Cases of “compensation neurosis” and “railway spine” identified in the 19th century
- Aetiology unclear → a range of theories proposed:
 - Physical causes
 - Psychological causes (e.g., malingering, stress, blame)
 - Occupational causes (e.g., job dissatisfaction)
 - Cultural construct
 - Supplier-induced demand (health professionals, lawyers)
 - Compensation
 - Opportunity for financial gain (asymmetric information)
 - Compensation scheme design (e.g., common law/fault-based)
 - “If you have to prove you are ill you can’t get well”



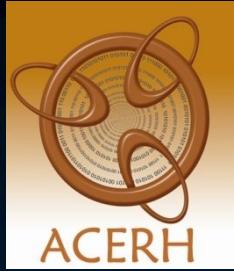
Research in this field

- No routine data collection on health status
 - Administrative data → claim duration, propensity
- Reliance on observational studies
 - Not feasible to randomise
 - Heterogeneous
 - Different populations, injury type and severity
 - Different compensation schemes and packages
 - Different outcome measures
- Increasing number of systematic reviews
 - Means of translating the results of +++ primary studies
 - Becoming more influential
 - Practice, policy, legislation



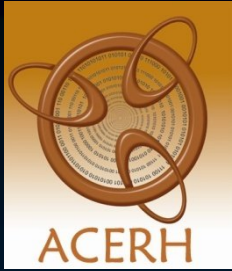
Systematic reviews conclude that an association exists

REPORT	CONCLUSION	LIMITATIONS
<p>Harris et al. 2005</p> <p>(surgical outcomes)</p>	<p>"...compensated patients have more than 3 times the odds of an unsatisfactory outcome compared with non-compensated patients"</p>	<ul style="list-style-type: none"> ▪ No quality appraisal ▪ Majority of included studies were case series ▪ Mix of injury types and severities ▪ Mix of proxy and health outcome measures ▪ Cited in NSW Parliamentary Review (2005); by Victorian Gov't (2007) and by IAG Insurance (2008)
<p>Carroll et al. 2008</p> <p>(whiplash)</p>	<p>"There was...preliminary evidence that compensation or legal factors are [negatively] associated with recovery."</p>	<ul style="list-style-type: none"> ▪ Based on 2 studies with conflicting results ▪ Not specific to compensation ▪ Proxy measures of health status ▪ Endorsed by the WHO



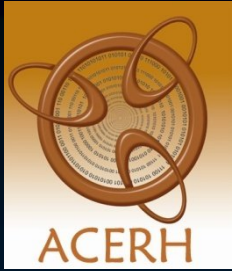
Editorial in Injury (September 2009)

- Cameron & Gabbe:
 - “There is a strong, consistent, temporal relationship between compensation and delayed recovery from injury. There are also plausible reasons for a causal relationship.” [emphasis added]



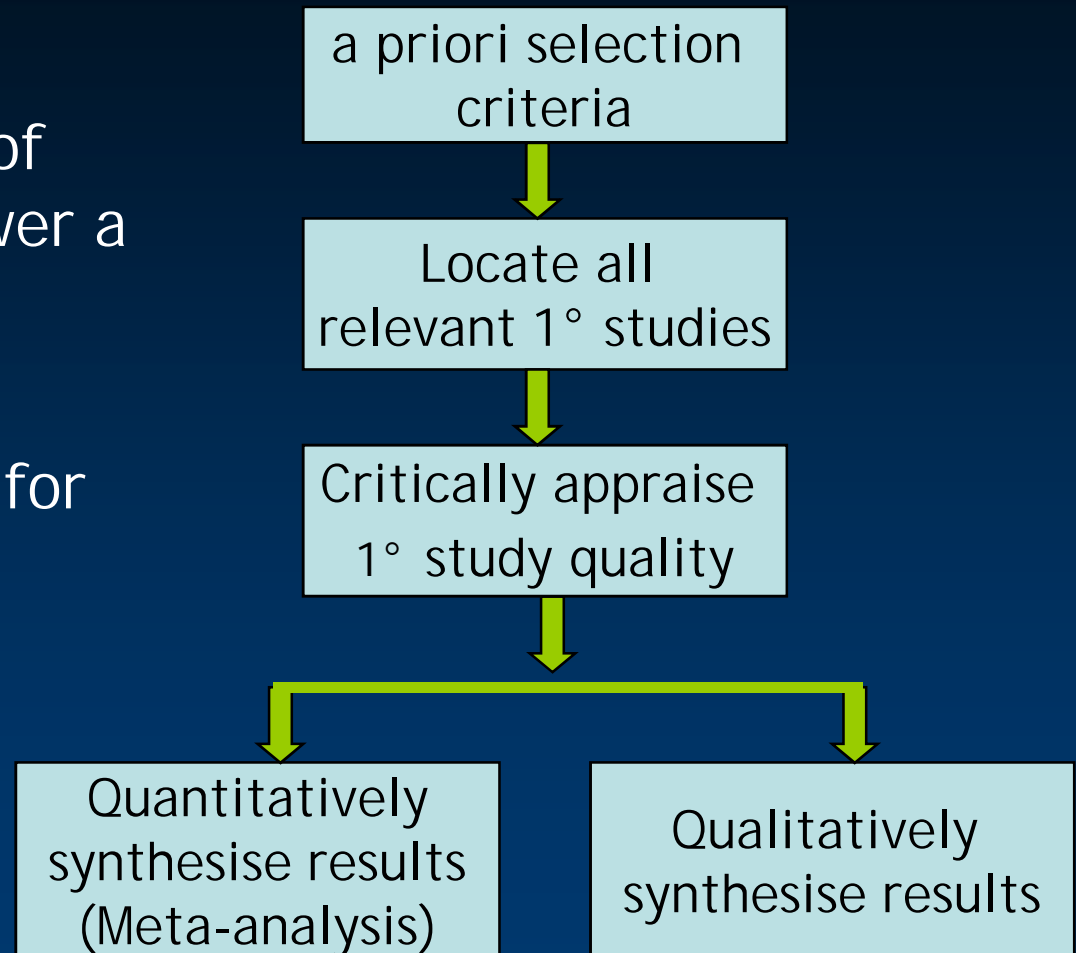
Rationale

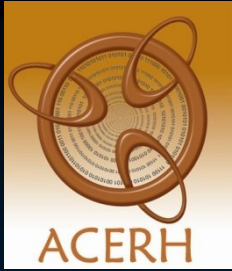
- Systematic reviews concluding that compensation is “bad for health” are being used to justify
 - changes in compensation scheme design
 - reductions in injury compensation
- Yet, the methodological quality of reviews is variable
- This study examines the validity of the results of the systematic reviews that have examined the association between compensation and health outcomes



Systematic reviews

- Summarise the results of primary studies to answer a specific question
- Specific measures to minimise the potential for bias





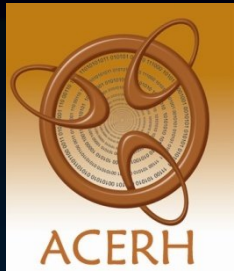
Meta-review

■ Objective

- Examine the validity of the results of systematic reviews on compensation and health status

■ Method

- Established a priori study selection criteria
- Database searches to locate relevant systematic reviews
- Independent critical appraisal using a validated instrument (AMSTAR)
- Qualitative synthesis
 - Conclusions about validity of results based on:
 - Methodological quality (attempts to minimise bias)
 - Homogeneity of the intervention (compensation scheme)
 - Outcome measurement (health vs proxy measure)



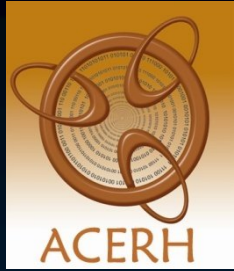
Selection criteria

Inclusion criteria

- Study design
 - Systematic reviews
- Participants
 - Adults 18+ years of age with an injury arising from an identifiable external cause
- Intervention
 - Compensation
- Outcome measure(s)
 - Any
- Publication in English

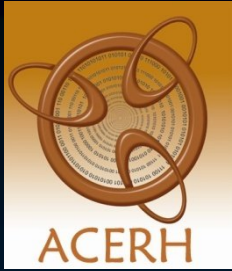
Exclusion criteria

- Narrative reviews
- Reviews involving professional negligence
- Reviews involving idiopathic or non-specific causes of injury

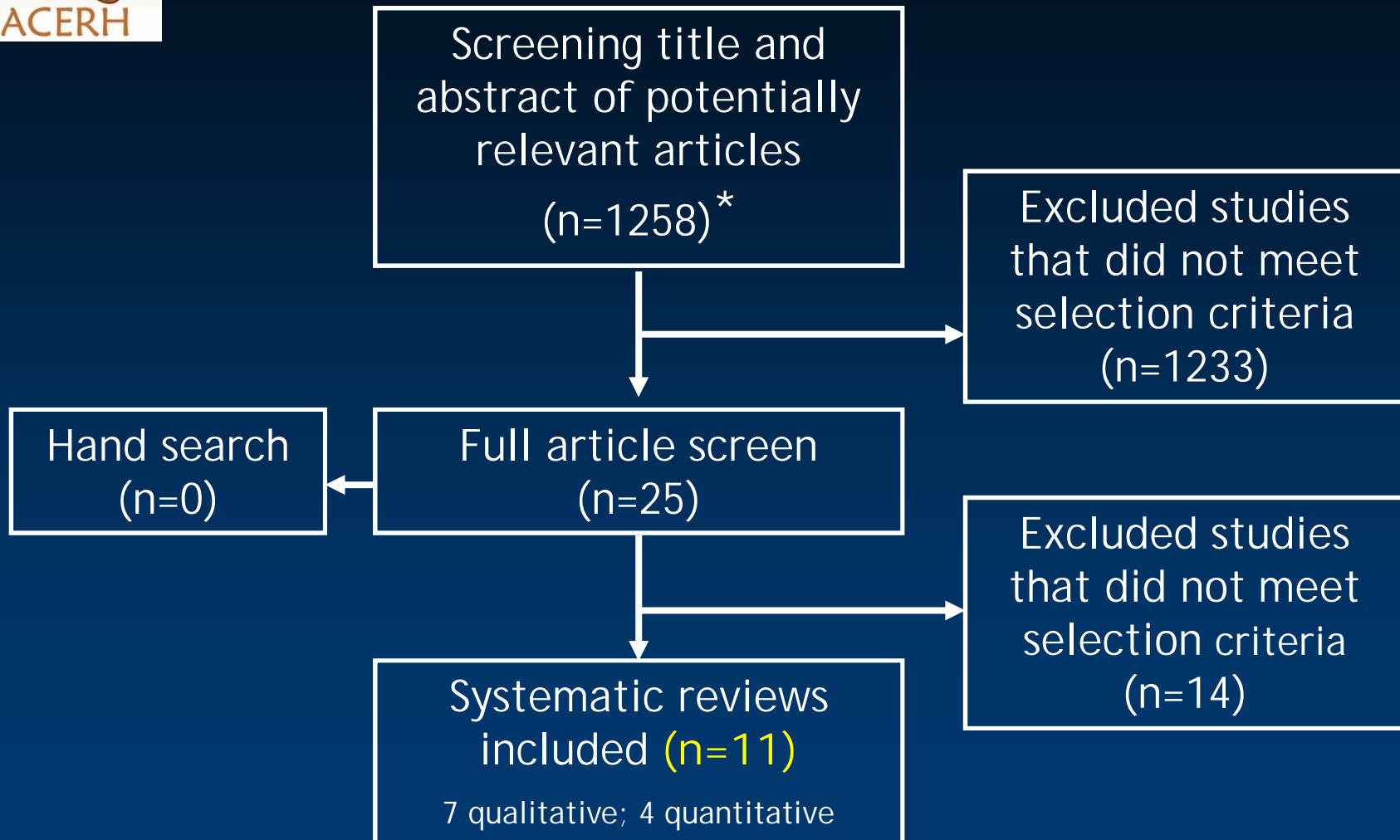


Search strategy

- Databases searched
 - PubMed, CINAHL, EMBASE, PEDro, PsycInfo, EconLit, Lexis, ABI/INFORM, The Cochrane Library, US AHRQ Evidence-based Practice Centers
- Search dates
 - Date of database inception to August 2008
- Search terms
 - Compensation, insurance, litigation, health outcome, health status, prognosis, personal injury, meta-analysis, literature review, systematic review



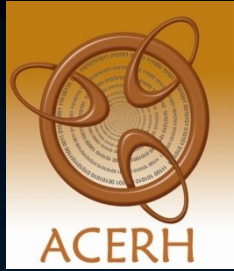
Study selection



* duplicates removed

Authors	Injury (# included studies)	Compensat'n scheme	Outcome measures	Conclusion
Steenstra	Acute low back pain (4)	Workers' comp	Sick leave	Yes
Scholten-Peeters	Whiplash (7)	Litigation	Symptoms, Disability	No
Cote	Whiplash (1)	Litigation	Claim duration	Yes *
Carroll	Whiplash (2)	Litigation	RTW, Claim duration	Yes ^
Carroll	Mild traumatic brain injury (3)	Litigation, Workers' comp	RTW, claim duration, Symptoms, Disability	Yes
Carroll	Neck pain (0)	Workers' comp	RTW	None
Oh	Surgery (shoulder) (2)	Workers' comp	Satisfaction, Function	Yes ^
Koljonen	Surgery (shoulder) (21)	Workers' comp	Function	Yes
Harris	Surgery (multiple) (129)	Litigation, Workers' comp	Satisfaction, QoL, Symptoms, Function	Yes
Belanger	Mild traumatic brain injury (7)	Litigation	Function	Yes
Binder & Rohling	Mild traumatic brain injury (18)	Litigation, Workers' comp	RTW, Symptoms, Function	Yes

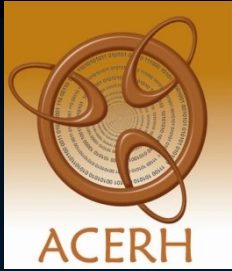
^2 studies with conflicting results; *1 study only



Evaluation of methodological quality

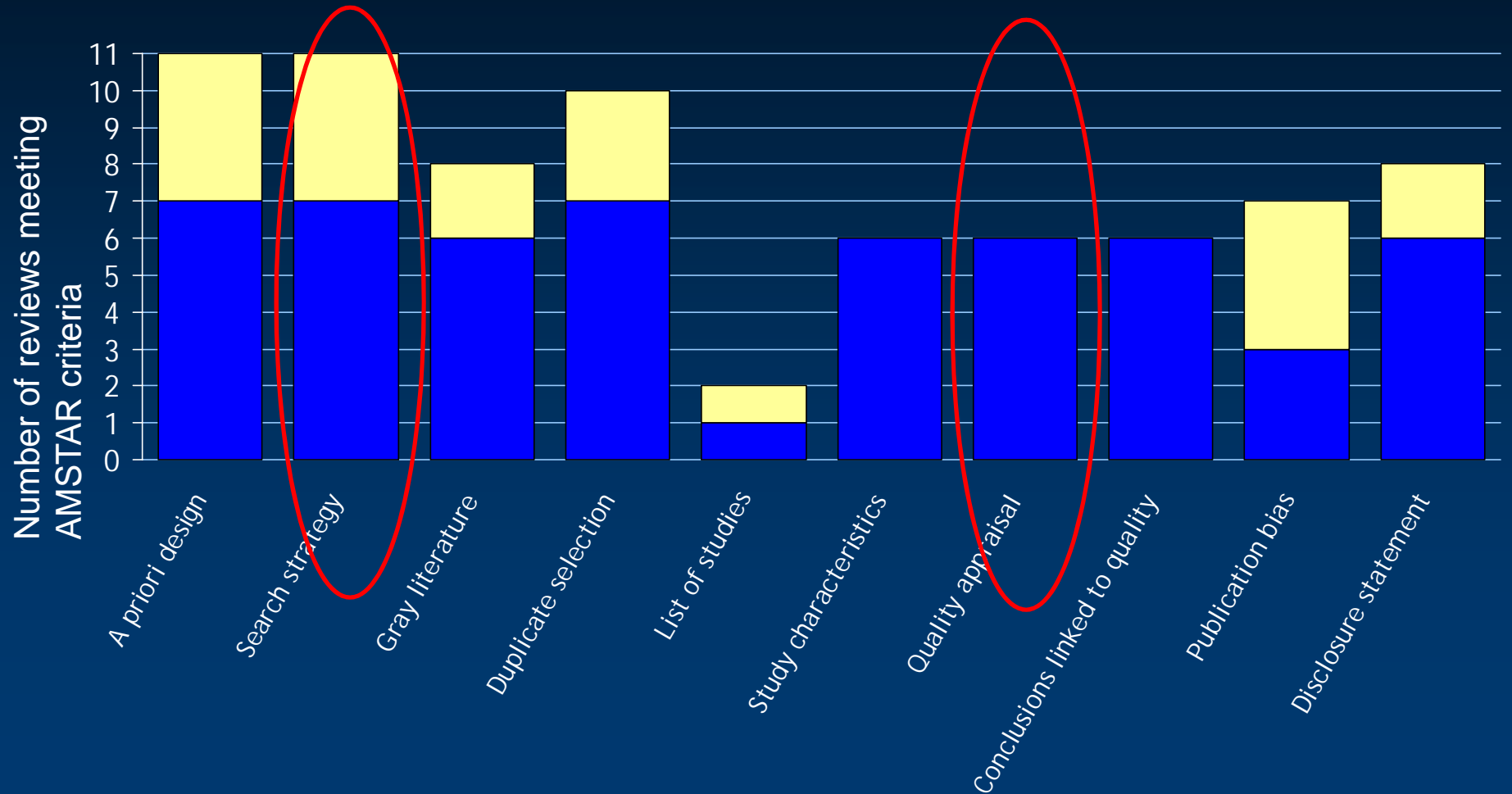
AMSTAR criteria

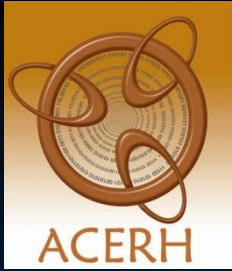
- A priori design?
- Search strategy documented?
- Grey (unpublished) literature searched?
- Duplicate study selection?
- List of all studies considered and reasons for exclusion?
- Study characteristics provided?
- Study quality appraised?
- Conclusions linked to study quality?
- Appropriate method of synthesis?
- Publication bias assessed?
- Disclosure statement provided?



Results: Methodological quality (AMSTAR)

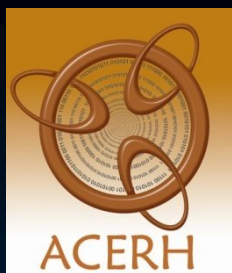
■ Qualitative reviews ■ Quantitative reviews





Results: Intervention (compensation)

- Little information provided re: compensation type
 - No clear definitions of “compensation” or “litigation”
- Some reviews combined primary studies involving different compensation schemes
 - Eg., workers’ compensation and litigation
- All reviews combined primary studies across jurisdictions
 - Scheme design varies considerably within and between jurisdictions - compensation is not a homogeneous intervention



Benefits payable in mandatory insurance schemes

Type of benefits	Motor Accident Schemes (CTP)	Workers' Compensation Schemes
Statutory benefits only	Northern Territory	South Australia Northern Territory
Limited access to common law	Victoria Western Australia South Australia	New South Wales Victoria Queensland Western Australia Tasmania
Unlimited access to common law	New South Wales Queensland Tasmania ACT	

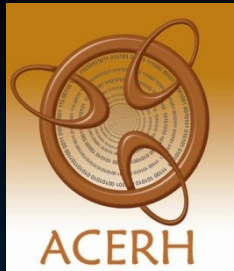
Source: National Competition Council 2001



Non-economic losses: Comparison of fault-based CTP schemes in Australia

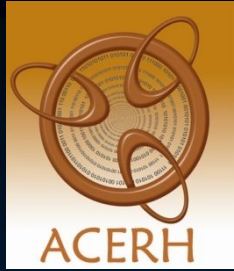
	Scheme design	Description	Threshold for NEL (general damages)	Cap on NEL (general damages)
NSW	Fault-based	Unlimited access to common law	>10% permanent impairment	\$390,000*
Qld	Fault-based	Unlimited access to common law	Nil	\$250,000 Injury scale 0-100
Tas	Fault-based	Unlimited access to common law	If NEL >\$4,000(a)** but <\$20,000(b)** then damages awarded for NEL are 1.25(b-a) If NEL >\$20,000** then damages awarded for NEL are equal to the assessed amount	Nil
ACT	Fault-based	Unlimited access to common law	Nil	Nil

*indexed (amount as at October 2008); **indexed; NEL=non-economic losses (general damages, pain and suffering)



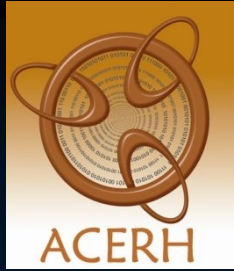
Results: Outcome measurement

- Unclear re: measuring the process or the outcome
 - No standard process for seeking compensation
 - No standard "dose" of compensation
- Range of measures used
 - Health outcome measures (3/11 reviews)
 - Generic, specific (some unvalidated)
 - Proxy measures (8/11 reviews)
 - Sick leave and RTW
 - Other factors are known to influence sick leave and RTW - s.e.s., economic incentives, and job characteristics (Baldwin 1996)
 - Claim duration
 - Data on claim duration is routinely collected
 - Debate about its association with health status (Cassidy 2000; Cote et al 2001; Freeman 2006)



Summary of results

- Methodological quality
 - Nearly half of the reviews did not assess primary study quality (meta-analyses in particular)
- Intervention
 - Problems with combining studies involving different compensation systems
 - General lack of understanding about the nature of compensation
- Outcome measurement
 - No consensus re: outcome measurement
 - ? suitability of proxy measures of health status



Assumptions

Lower potential for bias

+

Single compensation scheme

+

Use of a validated health outcome measure

=

Best available evidence from a systematic review
to answer the question

Authors	Injury	Potential for bias	Compensat'n scheme	Outcome measures	Conclusion
Steenstra	Back pain	Lower (9)	Workers' comp	Sick leave	Yes
Scholten-Peeters	Whiplash	Lower (9)	Litigation	Symptoms, Disabil	No
Cote	Whiplash	Lower (10)	Litigation	Claim duration	Yes *
Carroll	Whiplash	Lower (8)	Litigation	RTW, Claim duration	Yes ^
Carroll	Brain injury	Lower (8)	Litigation, Workers' comp	RTW, Disabil, Claim duration, Symptoms	Yes
Carroll	Neck pain	Lower (9)	Workers' comp	RTW	None
Oh	Surgery	Higher (6)	Workers' comp	Satisfaction, Function	Yes
Koljonen	Surgery	Higher (7)	Workers' comp	Function	Yes
Harris	Surgery	Higher (6)	Litigation, Workers' comp	Symptoms, Function Satisfaction, QoL	Yes
Belanger	Brain injury	Higher (6)	Litigation	Function	Yes
Binder & Rohling	Brain injury	Higher (4)	Litigation, Workers' comp	Symptoms, RTW, Function	Yes

^2 studies with conflicting results; *1 study only

Authors	Injury	Potential for bias	Compensat'n scheme	Outcome measures	Conclusion
Steenstra	Back pain	Lower	Workers' comp	Sick leave	Yes
Scholten-Peeters	Whiplash	Lower	Litigation	Symptoms, Disabil	No
Cote	Whiplash	Lower	Litigation	Claim duration	Yes *
Carroll	Whiplash	Lower	Litigation	RTW, Claim duration	Yes ^
Carroll	Brain injury	Lower	Litigation, Workers' comp	RTW, Disabil, Claim duration, Symptoms	Yes
Carroll	Neck pain	Lower	Workers' comp	RTW	None
Oh	Surgery	Higher	Workers' comp	Satisfaction, Function	Yes
Koljonen	Surgery	Higher	Workers' comp	Function	Yes
Harris	Surgery	Higher	Litigation, Workers' comp	Symptoms, Function, Satisfaction, QoL	Yes
Belanger	Brain injury	Higher	Litigation	Function	Yes
Binder & Rohling	Brain injury	Higher	Litigation, Workers' comp	Symptoms, RTW, Function	Yes

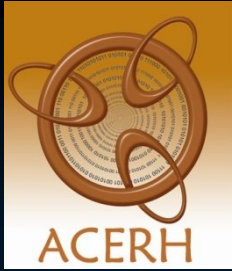
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Carroll	Whiplash	Lower	Litigation	RTW, Claim duration	Yes ^
Carroll	Brain injury	Lower	Litigation, Workers' comp	RTW, Disabil, Claim duration, Symptoms	Yes
Carroll	Neck pain	Lower	Workers' comp	RTW	None
Oh	Surgery	Higher	Workers' comp	Satisfaction, Function	Yes
Koljonen	Surgery	Higher	Workers' comp	Function	Yes
Harris	Surgery	Higher	Litigation, Workers' comp	Symptoms, Function, Satisfaction, QoL	Yes
Belanger	Brain injury	Higher	Litigation	Function	Yes
Binder & Rohling	Brain injury	Higher	Litigation, Workers' comp	Symptoms, RTW, Function	Yes

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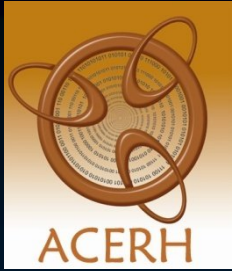
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Cote	Whiplash	Lower	Litigation	Claim duration	Yes *
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Carroll	Brain injury	Lower	Litigation, Workers' comp	RTW, Disabil, Claim duration, Symptoms	Yes
Carroll	Neck pain	Lower	Workers' comp	RTW	? *
Oh	Surgery	Higher	Workers' comp	Satisfaction, Function	Yes
Koljonen	Surgery	Higher	Workers' comp	Function	Yes
Harris	Surgery	Higher	Litigation, Workers' comp	Symptoms, Function Satisfaction, QoL	Yes
Belanger	Brain injury	Higher	Litigation	Function	Yes
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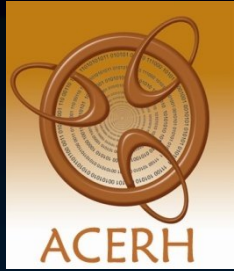
“ Best ” evidence

Authors	Injury	Potential for bias	Compensat'n scheme	Outcome measures	Conclusion
Scholten-Peeters	Whiplash	Lower	Litigation (fault-based)	Symptoms, disability	No association between compensation and health status



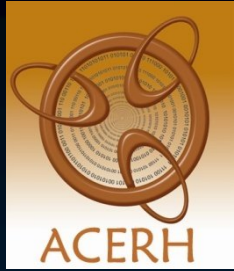
Caveats

- Scholten-Peeters et al:
 - Didn't search specifically for studies involving compensation
 - Used an arbitrary quality cut-off point to determine which studies were included in their synthesis
 - Didn't disclose their funding source



Conclusion

- One higher quality review (with some limitations) found strong evidence of no association between compensation and poor health status among people with whiplash injuries
- This challenges the views that
 - ex post moral hazard plays a role (i.e., people do not appear to be exaggerating the extent of their injury for financial gain)
 - fault-based compensation schemes are associated with poor health status



Implications

Proceed with caution

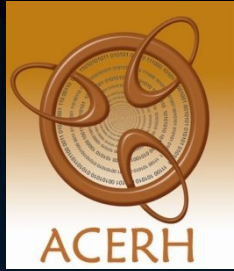
- despite the interest in limiting compensation on the basis that is “bad for health”, the evidence for this argument is not unequivocal

Be aware of the limitations of the research

- where several systematic reviews of a topic exist, it is important to evaluate and compare their quality and other characteristics.

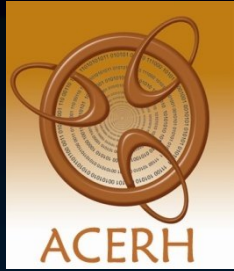
Improve the quality of research by

- considering the possible implications of compensation scheme design and avoiding cross-jurisdictional comparisons;
- achieving consensus with respect to measuring the impact of compensation on health status



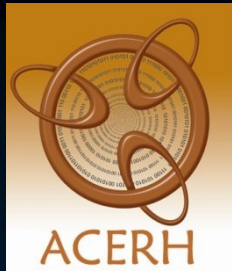
Limitations

- Bias in the search, study selection phases
 - Publication bias in systematic reviews (Tricco et al 2009)
 - No search of the unpublished literature
 - Excluded non-English publications
 - Selection criteria
 - Didn't specify a particular (health) outcome measure a priori
- Bias in the synthesis phase
 - Subject to the bias inherent in primary observational studies
 - Subject to the methodological and reporting limitations of the included systematic reviews



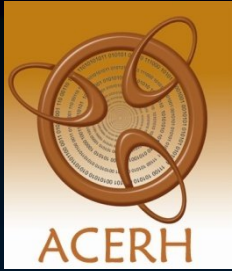
Conflicts of interest

- None declared by either author



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