Does access to compensation have an impact on recovery outcomes after injury?

Belinda J Gabbe, Ian A Harris, Alex Collie and Peter A Cameron

To the Editor: A recent article by O'Donnell and colleagues[1] claimed contradictory results to a previous study which found that compensation was associated with worse health and return-to-work outcomes after injury.[2] Their findings were similar to those of the previous study until they excluded a group of non-compensable patients because they had accessed private health insurance. The authors argued that "private health insurance was similar to other compensation agencies in that patients in this group had their health care costs met". Using this argument, all patients would be compensable, as Australia has a universal health care system in which all Australians have their health care costs met. There is no precedent in the literature for such an exclusion. Compensation bodies provide additional payments beyond health costs, including payment for pain and suffering and income replacement. They also involve patients in a complex process with many features thought to influence outcomes (eg, the adversarial nature of making compensation claims and delays in receiving payments). We believe that the exclusion of private patients from the non-compensable group in the study by O'Donnell et al was incorrect and reduced the already small study sample, limiting the capacity to identify differences across groups.

Furthermore, O'Donnell and colleagues found that compensable patients had higher anxiety levels at 24 months, until a supplementary analysis showed that, after controlling for stressful interactions with compensation agencies, compensation itself became non-significant. Surely stressful interactions are one of the mechanisms by which any compensation effect might be mediated. To say that an association is not significant once the mechanism of the effect is allowed for is akin to stating that smoking is not carcinogenic once the carcinogens are allowed for. O'Donnell and colleagues appear to be stating that simple access to compensation is not harmful, with which we agree, but fail to consider the complexities of compensation involvement.

Both studies[1,2] share a common limitation — that of comparing victims of transport-related injury with victims of other injury types. A recent study confirmed compensation and lawyer involvement as predictors of worse outcomes in a study of compensable and non-compensable transport-related trauma.[3] A true understanding of the effect of compensation requires comparison of patients of comparable injury circumstances (eg, road trauma) and different compensation systems. Studies are clearly needed to establish a better understanding of the complexities of compensation delivery and the impact on outcomes. O'Donnell and colleagues' conclusions have the potential to mislead compensation authorities and other stakeholders who should be focused on addressing this issue.

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1 O'Donnell ML, Creamer MC, McFarlane AC, et al. Does access to compensation have an impact on recovery outcomes after injury? *Med J Aust* 2010; 192: 328-333.
2 Gabbe BJ, Cameron PA, Williamson OD, et al. The relationship between compensable status and long-term patient outcomes following orthopaedic trauma. *Med J Aust* 2007; 187: 14-17.
3 Harris I, Young J, Jalaludin B, Solomon M. The effect of compensation on general health in patients sustaining fractures in motor vehicle trauma. *J Orthop Trauma* 2008; 22: 216-220. ❑

Nicholas S Glozier and Matthew Large

To the Editor: In their recent study, O'Donnell and associates[1] examined the effect of compensation, and the clinically vexing problem of interaction with insurance companies, on recovery after hospitalisation for trauma in Victoria. They concluded that access to compensation might not be associated with a poor outcome per se. We agree that the relationship between compensation and health outcomes is complex, but believe there are a number of conceptual and methodological issues that undermine their findings.

First, as they note, this sample of injured people might not be representative of those making an insurance claim. In an earlier study of motor vehicle accidents in New South Wales,[2] less seriously injured victims who only attended their general practitioner or spent less than a day in hospital comprised as much as 70% of those seeking compensation. Furthermore, the article by O'Donnell and colleagues provides no description of any differential attrition with respect to factors that may be associated with poorer psychosocial outcomes (such as previous psychiatric disorders), other than sex and acute hospital factors. The outcome measurement characteristics change in the course of the analyses, potentially undermining power to detect any differences. For example, the quality-of-life and disability measures become dichotomised using norms in the population for the modelling, rather than as scores in the baseline characteristics as in Boxes 2 and 3. This approach has the potential to conceal true differences between the groups because of regression to the mean and baseline differences in both groups.

The main problem relates to the possibly post-hoc exclusion of privately insured subjects from one group. We do not believe that private health insurance can reason-

ably be considered to be "compensation". It can provide money to cover the cost of inpatient treatment and very limited outpatient services, but provides no more recompense and retribution for injury than Medicare. Older and wealthier Australians disproportionately hold private health insurance. This group is likely to differ on a number of factors, many of which are associated with better psychosocial outcomes. Although the authors have evaluated some demographic factors, this is likely to have introduced some potentially significant confounding. Thus there is little justification for the removal of this group from the non-compensable group alone. We would be interested to see an analysis after the removal of subjects with private health insurance from both groups. This would allow a more rigorous examination of the effect of one factor — actual insurance compensation — on recovery outcomes.

Competing interests: Nicholas Glozier is an approved medical assessor for WorkCover NSW.

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1 O'Donnell ML, Creamer MC, McFarlane AC, et al. Does access to compensation have an impact on recovery outcomes after injury? *Med J Aust* 2010; 192: 328-333.
2 Large MM. Relationship between compensation claims for psychiatric injury and severity of physical injuries from motor vehicle accidents. *Med J Aust* 2001; 175: 129-132. ❑

David M Studdert, Harold Luntz and Genevieve Grant

To the Editor: O'Donnell and colleagues seek to extend and improve on previous research into the relationship between compensation status of injuries and medium-term health outcomes.[1] Improvements are needed because much of the empirical analysis in this area has had major methodological limitations.[2] Their analysis uses an impressive array of mental health measures to probe the "compensation effects". However, several aspects of the study design raise questions.

First, with very few exceptions, the transport accident compensation scheme in Victoria covers all injuries arising from transport accidents. It is therefore unclear how a quarter of patients in the non-compensable group could have suffered injuries due to motor vehicle accidents (MVAs) yet have fallen outside the scheme.

Second, the purpose of control variables in a multivariate model is to address potential confounders of the relationship between the predictor of interest (MVA compensability) and the outcomes (measures of health status at 24 months). Using significant univariate differences between the predictor of interest and other covariates as the basis for selecting control variables is statistically inappropriate, and this approach may have affected the results of the regression analyses.

Third, a key study finding is that significant differences in health outcomes were detected between MVA-compensable and non-compensable patients at 24 months after injury. These then "all but disappeared" when the non-compensable group was altered by shifting three patients who had accessed Transport Accident Commission compensation over to the MVA-compensable group and dropping 54 patients who had accessed "other forms of compensation". The result casts the spotlight on the removed group. It suggests that their mean health status at 24 months was relatively high. But who were they? Little information is provided, other than that nearly two-thirds (36/57) had private health insurance and were dropped for this reason. (In our view, private health insurance should not be construed as compensation, because policies tend to be highly selective about services covered and generally do not provide payment for lost income or non-economic losses.) Another possible explanation, not addressed, is that with only 88 patients left in the non-compensable group, the multivariate analyses lacked power to find differences.

The relationship between compensation availability and injury recovery is complex. Policy interest in the relationship looks set to increase in the next few years, as the federal government explores the merits of a national disability scheme.[3,4] In this environment, the need for rigorous research and reliable findings will be greater than ever. O'Donnell and colleagues' welcome contribution to the evidence base should stimulate further debate about how best to disentangle the effects of injury compensation systems on the health outcomes of Australians who call upon them.

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2 Grant G, Studdert DM. Poisoned chalice? A critical analysis of the evidence linking personal injury compensation processes with adverse health outcomes [8 December 2009]. *Melbourne University Law Review*: forthcoming University of Melbourne Legal Studies Research Paper No. 442. http://ssrn.com/abstract=1520788 (accessed Apr 2010).
3 Disability Investment Group. The way forward: a new disability policy framework for Australia. Canberra: Department of Families, Housing, Community Services and Indigenous Affairs, 2009. http://www.fahcsia.gov.au/sa/disability/pubs/policy/way_forward/Documents/dig_report_19oct09.pdf (accessed Apr 2010).
4 Productivity Commission. Disability care and support: terms of reference. 17 February 2010. http://www.pc.gov.au/projects/inquiry/disability-support/terms-of-reference (accessed Apr 2010). ❑

Alex Collie and Niki Ellis

To the Editor: As noted by O'Donnell and colleagues,[1] there is a growing body of evidence suggesting that provision of compensation is associated with poor recovery after injury. Most of this evidence arises from international workers compensation jurisdictions. However, two recent Victorian studies have examined health and work outcomes in compensable and matched non-compensable groups after transport injury.[1,2] Despite examining broadly similar patient groups and using broadly similar outcome measures, the two articles reach very different conclusions.

There has been substantial community reaction to these findings. Gabbe and colleagues' suggestion that compensation is associated with poor recovery[2] provoked public criticism of its methodology from the Law Institute of Victoria, and a prominent plaintiff legal firm released a public statement[3] 3 days after publication of the study by O'Donnell et al.

There is a disconnection in conceptualisation of this issue between the research community and those involved in compensation regulation and policy. Researchers are focusing on the question "Does compensation lead to poor health outcomes?", while the more nuanced policy question attracting the attention of many injury compensation regulators is "Which, if any, aspects of the compensation scheme have a positive or

negative impact on health, vocational and social outcomes?”.

Close inspection of the published literature suggests that there are individual components of compensation systems that may have a negative impact on outcome, including the provision of payments for pain and suffering[4] and the provision of income benefits.[5] There are also examples of compensation organisations acting to improve outcomes via their broader remit as government regulators. For example, the Transport Accident Commission was a major driver of the reorganisation of the Victorian state trauma system, which has resulted in a significant reduction in mortality after road trauma.[6]

O'Donnell and colleagues[1] note the complex relationship between compensation and health outcomes, with particular reference to patient characteristics. The compensation schemes themselves are also highly complex. However, there has been very little research effort directed towards identifying the impact of specific scheme components on patient outcome. In Victoria, the two major injury compensation regulators have funded the Institute for Safety, Compensation and Recovery Research to address this issue. This level of interaction between policymakers and researchers is needed to improve outcomes for those injured in transport- and work-related accidents.

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1 O'Donnell ML, Creamer MC, McFarlane AC, et al. Does access to compensation have an impact on recovery outcomes after injury? *Med J Aust* 2010; 192: 328-333.
2 Gabbe BJ, Cameron PA, Williamson OD, et al. The relationship between compensable status and long-term patient outcomes following orthopaedic trauma. *Med J Aust* 2007; 187: 14-17.
3 Maurice Blackburn Lawyers. Myths about road trauma compensation questioned in new study. Media release, 18 March 2010.
4 Cameron ID, Rebbeck T, Sindhusake D, et al. Legislative change is associated with improved health status in people with whiplash. *Spine (Phila Pa 1976)* 2008; 33: 250-254.
5 McNaughton HK, Sims A, Taylor WJ. Prognosis for people with back pain under a no-fault 24-hour-cover compensation scheme. *Spine (Phila Pa 1976)* 2000; 25: 1254-1258.
6 Cameron PA, Gabbe BJ, Cooper DJ, et al. A statewide system of trauma care in Victoria: effect on patient survival. *Med J Aust* 2008; 189: 546-550. ❑

Meaghan L O'Donnell, Mark C Creamer, Richard A Bryant, Alexander C McFarlane and Derrick Silove

IN REPLY: We thank the authors of the above letters for their comments. Our response will focus only on the major themes raised.

We note the concerns about excluding people with private health insurance. The issue here is not whether having health care costs met by private health insurance is the same as having motor vehicle accident (MVA) compensation entitlements. Rather, it is whether access to private insurance payments for health care is the same as not having any compensation at all. We argue that injury patients with private insurance have access to a broader range of health care services and providers than those in the public system, and can access these services more quickly because they avoid long public sector waiting lists. The suggestion that patients who are dependent on public health care in the 2 years following injury (non-compensable patients) receive the same health care as those who have private insurance is unjustified. Most studies to date have not considered other schemes such as private insurance, ignoring the potential impact they may have on health outcomes. We recognise that there may be demographic differences between patients who are involved with other schemes such as private health insurance, and these factors may contribute to outcomes. In noting the inherent limitation in this approach, we nonetheless argue that there are also limitations to including these patients, and therefore an analysis that excludes privately insured patients is a valid addition to the literature on compensation.

In response to the point raised by Gabbe and colleagues, we note that our analysis showing that “stressful interaction with the compensation agency” accounted for variance in anxiety scores was designed to investigate potential mechanisms that may explain why anxiety was higher in the MVA-compensable group. We did not conduct the analysis to argue that this group was not more anxious than the non-compensable group. They were more anxious.

Glozier and Large were concerned that differential attrition may affect comparisons between the two groups. To clarify, there were no significant baseline differences between completers and non-completers on any measure. Their second issue relates to the removal of patients with private health insurance from the analyses. To clarify, we removed anyone who indicated at 24 months that they had accessed private or other forms of compensation, regardless of their original compensation classification.

Studdert and colleagues were concerned that we used univariate differences to identify control variables. We adopted this process to replicate the statistical methodology used by Gabbe et al,[1] in an attempt to replicate their findings.

In conclusion, our study illustrates the complexity of compensation research and the importance of carefully defining populations — a point that has not yet been adequately addressed. Indeed, a recent review of the literature argues that most compensation research is methodologically limited.[2] We agree that there are limitations to our methodology, as there are in previous studies, and recognise that conducting this kind of research is inherently difficult. We welcome the establishment of the Institute for Safety, Compensation and Recovery Research, noted by Collie and Ellis, and its support of this challenging and complex research.

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2 Spearing NM, Connelly LB. Is compensation “bad for health”? A systematic meta-review. *Injury* 2010. [Epub ahead of print.] ❑