Claiming behaviour in a no-fault system of medical injury: a descriptive analysis of claimants and non-claimants

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ABSTRACT

Objectives: (i) To determine the proportion of patients in New Zealand who claim compensation from the national no-fault compensation program after experiencing a compensable injury; and (ii) to identify characteristics of injured patients who are least likely to claim despite having sustained a compensable injury.

Design: We estimated the percentage of eligible patients who claim no-fault compensation by linking a national claims database (Accident Compensation Corporation) to records reviewed in the New Zealand Quality of Healthcare Study (NZQHS). Bivariate and multivariate analyses were used to investigate socioeconomic and sociodemographic differences between claimants and injured non-claimants.

Participants and setting: Patients who experienced an adverse event associated with care in NZ public hospitals in 1998 and claimed compensation with the ACC, the national no-fault insurer ($n = 741$). Patients identified by the NZQHS as having sustained an adverse event associated with hospital care in the same year who did not file a compensation claim ($n = 839$).

Main outcome measures: Adverse events, compensable adverse events, and compensation claims.

Results: Among patients judged by NZQHS reviewers to be eligible for compensation, 2.9% (6/210) claimed. Odds of claiming after an adverse event were significantly lower for patients who were elderly (odds ratio [OR], 0.20; 95% CI, 0.14–0.28), from the most deprived areas (OR, 0.36; 95% CI, 0.23–0.57), or of Māori or Pacific ethnicity (OR, 0.47; 95% CI, 0.32–0.69 and OR, 0.26, 95% CI, 0.11–0.58).

Conclusions: Despite few apparent institutional or economic barriers, the proportion of injured patients in NZ who seek compensation after sustaining a compensable injury is very low. Hence, substantial underclaiming occurs in both negligence and no-fault systems. The disproportionately low propensity of elderly, poor and minority patients to seek compensation also appears to be pervasive.

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Critics of medical negligence litigation frequently decry its excesses. However, medicolegal research into the relationship between iatrogenic injury, negligence, and litigation highlights a serious problem of a different kind: the vast majority of patients who sustain injury due to negligent medical care never sue,[1-3] and certain subgroups of injured patients — primarily, patients who are elderly, poor, and uninsured — are especially unlikely to seek damages.[3,4] The reasons for this "underclaiming" phenomenon are unclear. One commonly cited explanation is that, in negligence-based systems, patients who desire compensation confront a variety of barriers, including difficulties finding or paying for legal representation, time costs associated with litigation, and secrecy among providers about errors and their consequences.[5]

The prospect of fewer such barriers, and better linkage of compensation to injuries, has fuelled interest in alternative approaches to medical injury compensation.[6,7] Commentators in Australia,[8,9] the United States,[6,7,10] including the Institute of Medicine,[11] and the United Kingdom[12] have eyed New Zealand's no-fault system of compensation[13] as a promising alternative. In Australia, a major review of medical indemnity arrangements in the mid 1990s rejected the no-fault model;[14] a more recent review of the law of negligence noted that a significant body of opinion supports implementation of such a system, but made no recommendation.[15]

There has been little empirical assessment of the performance of no-fault systems in fulfilling their central promise of providing faster and fairer compensation to more patients. In this study, we linked a national dataset of compensation claims with chart review data from the NZ Quality of Healthcare Study (NZQHS). This permitted estimation of how frequently compensable adverse events, as determined by physician reviewers, led to compensation claims. We also analysed the "compensation gap" by comparing injured non-claimants with injured claimants.

METHODS

Baseline data on a random sample of patients who had experienced adverse events came from the NZQHS. As previously described,[16] NZQHS used a two-stage sampling process to develop a representative sample of 6579 medical records of patients discharged from publicly funded acute care hospitals in 1998, excluding psychiatric and same-day discharges. Trained reviewers assessed each case for the presence of an adverse event. Following previous research in the US,[17,18] Australia,[19] and NZ,[16] adverse events were defined as an unintended injury caused by health care management, rather than the underlying disease process, that resulted in disability.

The Accident Compensation Corporation (ACC), the government agency responsible for adjudicating and paying claims for compensation of medical injuries in NZ, provided data on all claims alleging an injury that occurred in 1998. Since 1974, eligibility for compensation has not been predicated on proof of provider negligence.

The compensation criteria have changed over time. Between 1992 and 2005, injuries were compensable if they met either of two criteria:[13,20] (i) a "medical mishap", defined as a consequence of treatment properly given that is rare (occurring in no more than 1% of cases) and severe (hospitalisation for more than 14 days, significant disability lasting more than 28 days, or death); or (ii) "medical error", defined as a failure to provide treatment with reasonable care and skill. On 1 July 2005, "medical mishap" and "medical error" were replaced with a new concept of "treatment injury".[21,22] This change broadened coverage to include all personal injuries sustained while receiving treatment from health professionals. Our study was conducted before the legislative change, and compensability determinations focused on the mishap/error criteria.

Claims relating to episodes of care in 1998 may have been (or might be) filed later than 30 June 2004, the date the claims data were extracted, although this is unlikely. Virtually all claims are filed within 2 years of

the date of the alleged injury, and the adjudication time frame averages 6 months,[23] with a statutory time limit of 9 months. Therefore, the 5.5-year claiming window we allowed is conservative.

We matched adverse events to claims using the national hospital number (a unique national identifier) and birth date: 14 matches were identified. Two of us (M M B, D M S) compared clinical data from the medical record review with claims data to confirm that the NZQHS patient and the complainant were the same person and that the complaint related to the same episode of care.

The analyses are descriptive. We compared characteristics of patients who filed a claim for compensation ("claimants") with characteristics of patients from the NZQHS who experienced an adverse event and did not claim ("non-claimants"). The overlapping or "match" patients — that is, patients from the NZQHS sample whose care involved an adverse event and who subsequently claimed compensation for that event — were classified as claimants. Box 1 shows the derivation of the two populations.

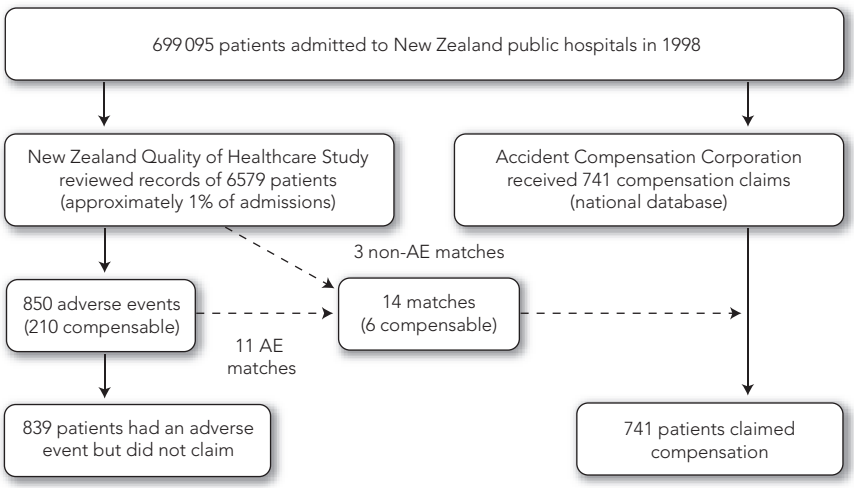
A determination of "compensability" was available within both the NZQHS and the ACC data. For each adverse event identified in NZQHS, reviewers had judged whether it met the statutory criteria for compensation. Among claims, compensable events were those so judged by the ACC. A pilot study established good inter-rater reliability between NZQHS and ACC determinations of compensability (κ, 0.66).[24]

Data were analysed using the SAS statistical software package, version 9.0 (SAS Institute Inc, Cary, NC, USA), and Stata, version 8.0/SE (Stata Corp, College Station, Tex, USA). We used *t* tests and χ^2 tests to conduct bivariate comparisons of characteristics of the claimant and non-claimant groups. We investigated predictors of failure to claim despite having experienced an adverse event using multivariate logistic regression. The dependent variable in the regression analysis distinguished claimants from non-claimants. The independent variables were sex, ethnicity (Māori, Pacific, non-Māori/non-Pacific), patient age (< 1 year, 1–17 years, 18–44 years, 45–64 years, and ≥ 65 years), disability (temporary, permanent with < 50% impairment, permanent with > 50% impairment, death), and whether or not the event was compensable. An additional covariate provided a measure of the patient's socioeconomic status using the NZ Index of Deprivation Score.[25,26] This index, based on small area mesh blocks (a micro-level breakdown of geographic boundaries), combines nine census variables reflecting aspects of material and social deprivation; as has been done previously,[27] index scores were separated into quintiles for analysis.

To account for the stratified two-stage cluster sampling design in the NZQHS,[28] the bivariate and multivariate analyses were weighted. Weighting made little difference to the estimates.

Ethics review boards in Wellington, NZ, and at the Harvard School of Public Health, USA, approved the study.

1 Identification of claimants and injured non-claimants



AE = adverse event

2 Frequency of compensable events and claims after adverse events in New Zealand, and in New York and Utah/Colorado, USA

	New Zealand	New York[2]	Utah/Colorado[3]
Compensable adverse events per 100 admissions	3.2	1.0	0.9
Probability of a claim following a compensable adverse event	2.9%	1.5%	2.5%

RESULTS

The ACC received 1148 claims relating to injuries allegedly sustained in 1998, 741 (65%) of which were associated with admissions to acute care public hospitals. Forty-six per cent (338/741) of the hospital-related claims were accepted and received compensation. The mean time between the event and filing of the claim was 12 months (median, 4 months; range, 0–78 months).

As previously reported, NZQHS investigators' review of 6579 admissions identified 850 adverse events;[16] 210 of these were judged to be compensable under the statutory standard (Box 1). This corresponds to a rate of 3.2 compensable adverse events per 100 admissions under NZ's no-fault standard, which is about three times greater than the frequency of compensable events previously detected in the US using the negligence standard (Box 2).

There were 14 matches between the NZQHS and claims populations. NZQHS reviewers had judged six of these to be compensable adverse events, which suggests that 2.9% (6/210) of compensable adverse events led to claims. In Box 2 the claiming rate among compensable adverse events in NZ is compared with corresponding rates from malpractice systems in New York and Utah/Colorado. Among the rest of the matches, five were judged by NZQHS reviewers to be adverse events that did not meet the compensation criteria, and three were judged not to be adverse events.

For the 14 matches, we observed both the NZQHS reviewers' judgments about compensability and the ACC's actual compensation determination. NZQHS reviewers were more restrictive. The ACC, which typically

has more information on which to base compensation decisions than the medical record used by NZQHS reviewers, determined that 10 claims met the statutory criteria and awarded them compensation. Based on the ACC's compensability judgment rather than the NZQHS reviewers' judgments, therefore, 4.8% (10/210) of compensable adverse events led to claims. In summary, sensitivity analyses that account for differing thresholds in the compensability determinations suggest that 2.9%–4.8% of compensable adverse events in NZ led to claims.

Box 3 gives baseline measures of patient characteristics from the NZQHS's representative sample, and then compares characteristics of claimants and non-claimants who experienced adverse events. Compared with claimants, non-claimants were significantly older (mean age, 52 v 42 years; P < 0.001), more likely to be male (45% v 39%; P = 0.02), and more likely to be of Māori or Pacific ethnicity (16% v 9% and 4% v 2%; P < 0.001). Non-claimants were also more likely to live in the most socioeconomically deprived areas (27% v 18%; P < 0.001). Claimants, on the other hand, were more likely to have sustained injuries that led to permanent disability, and a significantly larger proportion of their injuries were compensable (46% v 24%; P < 0.001).

These bivariate differences persisted in multivariate analyses of the claimants and non-claimants (Box 4). Claiming propensity decreased with deprivation: the odds of claiming among injured patients in the most deprived quintile were a third the odds of claiming among injured patients in the most privileged quintile (odds ratio [OR], 0.36; 95% CI, 0.23–0.57). Elderly patients were significantly under-represented among claimants (OR, 0.20; 95% CI, 0.14–0.29), as were patients of Māori and Pacific ethnicity (OR for Māori, 0.47; 95% CI, 0.32–0.69; OR for Pacific peoples, 0.26; 95% CI, 0.12–0.58). The model controlled for disability and eligibility for compensation, both of which were significant predictors of claiming (OR for permanent disability > 50% impairment, 5.2; 95% CI, 2.9–9.3; OR for compensable event, 2.8; 95% CI, 2.1–3.8).

Confining the model to ACC cases and NZQHS cases that were judged compensable had the effect of dropping Māori ethnicity and deprivation quintiles 3 and 4 from significance. It did not affect the significance of any other predictors and had only trivial impacts on the magnitude of coefficients in the model.

3 Characteristics of patients in New Zealand Quality in Healthcare Study (NZQHS), injured non-claimants in NZQHS, and claimants with the Accident Compensation Corporation (ACC)

	Full NZQHS sample (*n* = 6579)	NZQHS injured non-claimants (*n* = 839)	ACC claimants (*n* = 741)	*P**
Sex				0.02
Male	2970 (45%)	376 (45%)	287 (39%)	
Age (years)				< 0.001
Mean	42.6	52.1	42.4	
Ethnicity†				< 0.001
Non-Māori/non-Pacific	5131 (80%)	654 (80%)	571 (89%)	
Māori	1013 (16%)	134 (16%)	58 (9%)	
Pacific	240 (4%)	32 (4%)	12 (2%)	
Deprivation quintile				< 0.001
1 (least deprived)	824 (13%)	95 (11%)	118 (18%)	
2	907 (14%)	127 (15%)	138 (21%)	
3	1354 (21%)	181 (22%)	140 (21%)	
4	1583 (24%)	204 (25%)	139 (21%)	
5 (most deprived)	1834 (28%)	225 (27%)	118 (18%)	
Disability				< 0.001
Temporary impairment	—	677 (85%)	313 (54%)	
Permanent < 50% impairment	—	65 (8%)	192 (33%)	
Permanent > 50% impairment	—	19 (2%)	49 (9%)	
Death	—	38 (5%)	22 (4%)	
Compensation eligibility				< 0.001
ACC criteria met	210 (3%)	204 (24%)	338 (46%)	

* *P* values were calculated for the difference between claimants and non-claimants using *t* tests and χ^2 tests as appropriate. Calculations were weighted to account for NZQHS sampling methodology.

† Percentages were calculated using the available data as denominators. Ethnicity data were missing for 19 non-claimants (2.3%) and 100 claimants (13.5%); deprivation scores were missing for 7 non-claimants (0.8%) and 88 claimants (11.9%); disability severity was missing for 40 non-claimants (4.8%) and 165 claimants (22.3%).

DISCUSSION

Our study is the first to match epidemiological data on medical injuries to claims for compensation in a no-fault environment. Only a small minority (2.9%–4.8%) of patients who suffered an injury and were eligible for compensation claimed it. The strongest risk factors for not claiming in our analyses were old age, Māori and Pacific ethnicity, socioeconomic disadvantage, and injury resulting in temporary disability or death.

Both the ACC and NZQHS data we used have some limitations. Ethnicity is missing for 119 patients (or 7.5% of the study sample), and misclassification is a well-recognised problem with data of this type.[29] The NZ Index of Deprivation's use of small area-based measures to assign socioeconomic characteristics at the individual level creates the potential for measurement error.[26] The direction and magnitude of the impact of these data limitations on our findings are unknown, but we know of no reason why they would differ systematically between claimants and non-claimants, and thus affect the main results of our analyses.

The claiming rate we estimated is consistent with Davis and colleagues' crude estimate (based on adverse event and claims data from one region of NZ) that compensable events outstrip claims in NZ by a factor of 30 to one.[24] It is also consistent with the estimated claiming rate of 3.6% obtained by using all claims as the numerator and an extrapolation of compensable event rates to the national level as the denominator (749/21 000).

However, our claiming rate estimate should be interpreted as a lower bound for two reasons. First, patients who experience falls or fractures in a health care facility usually have their claims processed as general accidents rather than medical injuries, and our dataset was confined to the latter. Second, the claims volume for 1998 (*n* = 1148)

was unusually low, with 33% fewer claims filed compared with the 5-year period 1997–2001 (mean, 1717; range, 1148–2133). Why fewer claims arose from injuries in 1998 is unknown.

Our findings do not suggest that a considerably larger proportion of injured patients who are eligible for compensation will actually obtain it in a medicolegal environment like NZ's, where negligence has been eliminated as the basis of determining eligibility for injury compensation. As in the US, patients who sustained injuries were much more likely to claim compensation than uninjured patients. But despite few apparent barriers to seeking compensation in NZ — for example, lawyers are not necessary and few claimants use them — the vast majority of eligible patients (97%) did not claim. The proportion that did claim was very close to the proportion estimated from tort systems in New York in the late 1980s[2] and Utah and Colorado in the late 1990s.[3]

Our findings are also consistent with estimates from Denmark, another country with a comprehensive no-fault system. A recent review of 1573 patient records from a surgery department in Copenhagen found only two no-fault compensation claims among 209 potentially compensable events.[30] The problem of chronic underclaiming appears to be quite insensitive to the structure of the compensation system.

4 Multivariate odds of claim for compensation among claimants and injured non-claimants

	Odds of claim (95% CI) (n = 1580)	P
Sex		
Male	0.73 (0.55–0.95)	0.02
Age		
Infant (< 1)	0.89 (0.56–1.41)	0.6
1–17	0.46 (0.26–0.79)	0.005
18–44	1.00 (reference)	
45–64	0.87 (0.63–1.21)	0.4
65+	0.20 (0.14–0.29)	< 0.001
Ethnicity		
Non-Māori/non-Pacific	1.00 (reference)	
Māori	0.47 (0.32–0.69)	< 0.001
Pacific	0.26 (0.12–0.58)	0.001
Deprivation quintile		
1 (least deprived)	1.00 (reference)	
2	0.82 (0.53–1.26)	0.4
3	0.65 (0.43–0.99)	0.05
4	0.61 (0.40–0.93)	0.02
5 (most deprived)	0.36 (0.23–0.57)	< 0.001
Disability		
Temporary impairment	1.00 (reference)	
Permanent < 50% impairment	5.4 (3.78–7.81)	< 0.001
Permanent > 50% impairment	5.2 (2.92–9.25)	< 0.001
Death	1.1 (0.57–2.02)	0.8
Compensation eligibility		
Accident Compensation Corporation criteria met	2.8 (2.09–3.79)	< 0.001

What explains the low claim rates? There are several plausible possibilities. First, many patients may not be aware that they have sustained an injury from medical care. Disentangling medical injury from the progression of underlying illness is not straightforward, especially in the inpatient setting where that illness may be severe.

One hope for efforts to promote disclosure of medical injuries is that greater transparency may attenuate this identification problem. In theory, the blame-free atmosphere of a no-fault environment is better placed to realise this goal. In practice, NZ's continued use of medical error as one of the bases of eligibility for compensation has meant its scheme has retained some of the fault and blame elements that characterise tort systems. These vestiges have almost certainly inhibited disclosure.[31] The recent changes to the scheme, replacing "medical mishap" and "medical error" with "treatment injury" are explicitly designed to eliminate fault-finding from the compensation inquiry, promote disclosure, and reinforce the system's no-fault mission.[23]

Second, injured patients and their families have many interests besides money,[32,33] though it is essentially the only remedy available in a tort system. The NZ system offers monetary compensation for economic losses, and offers alternative processes for responding to patients' other needs. Patients who seek an apology, an explanation, or system change to protect others from similar harm can have those interests met by using free, independent advocacy services or filing a complaint with the national Health and Disability Commissioner.[34]

Third, other sources of service and financial support for injured patients may diminish the economic importance of compensation in NZ, relative to a country like the US. For example, hospital care is free, and primary care is heavily subsidised. This hypothesis finds support in the fact that claims for dental injuries during anaesthesia are a leading category of medical injury claims to ACC; dental care is one area in which NZ patients face significant out-of-pocket expenses.

A related point is that the awards themselves tend to be modest relative to damages paid in tort. Forty-six per cent (338/741) of the claims in this study were compensated, receiving an average of NZ$25 245 by the time of the study (median, $4305; range, $23–$504 609). As compensation is paid weekly for as long as is required, these figures cannot easily be compared with a lump-sum award.

Non-economic damages are not compensated. Older patients and people representing children may be discouraged from claiming because significant earnings-related compensation is not available to them.[24] A disproportionate degree of underclaiming among those groups is consistent with the results of our comparisons of non-claimants with claimants.

The negative correlation of both temporary injury and death with claiming propensity probably reflects the economic realities of compensation: successful claims for these levels of harm typically attract relatively little compensation, decreasing incentives to bring them forward. The remaining risk factors demonstrate the inverse relationship between social disadvantage and propensity to claim. Although injury compensation systems are designed to reduce social disparities, they may amplify them in the area of medical injuries.

Our findings related to social deprivation are consistent with previous research.[3,4,35,36] Burstin and colleagues found that poor, elderly and uninsured patients in New York were significantly less likely to sue for malpractice, even after controlling for the presence of medical injury.[4] Similarly, Studdert and colleagues' analysis of adverse events and lawsuits in Utah and Colorado found that sociodemographic risk factors for being members of the "worthy but uncompensated" group included being poor, uninsured, a Medicare or Medicaid beneficiary, and 75 years of age or older.[3]

Māori have special status in NZ, as the indigenous people and partners to the Treaty of Waitangi. Like many indigenous populations who have been colonised, they are disadvantaged across a spectrum of indicators including education, health, and justice — even after adjusting for socioeconomic status.[29] In our study, patients of Māori and Pacific ethnicity were significantly less likely to claim after injuries. Further research is required to investigate the cause of these disparities. However, more widespread adoption of culturally safe practices, including the use of appropriate language, respect for custom, the use of culturally validated outcome measures, and the employment of Māori and Pacific staff[37] may help to overcome these disparities.

NZ's distinctive approach to compensating medical injury has stood the test of time, and proven to be popular and affordable. However, our findings indicate that it has not averted a well documented shortcoming of the tort system — only a small proportion of patients eligible for compensation after an adverse event actually receive it, and vulnerable subgroups of patients are the most unlikely to claim.

How the country's recent shift towards a more permissive compensation standard will affect the low claiming rates and the disparities we observed is unclear. Patients' general awareness of opportunities for compensation may increase, as may transparency about medical injuries among clinicians, with overtones of error and fault removed from the compensation determination. All else being equal, both of these changes would tend to boost claiming rates among eligible patients. However, the shift to a treatment injury standard also enlarges the pool of eligible patients, perhaps threefold.[24] The relative size of these changes, combined with others we have not considered, will determine the ultimate impact of the new compensation standard on claiming rates.

Future research should reassess claiming behaviour in the new environment. This would provide further insights into whether compensation systems based on criteria other than negligence fulfil their promise.

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COMPETING INTERESTS

None identified.

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Harrisons