

Australian doctors' involvement in medicolegal matters: a cross-sectional self-report study

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The frequency of doctors' involvement with medicolegal matters has been shown to vary with sex, age, specialty, hours worked and country of practice.¹⁻⁶ Doctors who are male,^{1-3,5,6} work in high-intervention specialties^{1,4-6} and work long hours^{1,6} are more likely to be the subject of a medicolegal matter. Some studies,^{1,3} but not all,⁶ have found that older doctors are more likely to have been involved in a medicolegal matter. The finding that 86% of interventional specialist doctors in the United States have been named in a malpractice suit at least once illustrates the extreme in medicolegal action.⁴

Medicolegal matters can place a great deal of stress on doctors. An Australian study of general practitioners found that psychiatric morbidity and hazardous alcohol consumption were higher in doctors who were currently involved in a medicolegal matter than in those who were not.¹ Another study of Australian GPs revealed that the threat of litigation was perceived as the most severe work-related stress.⁷ However, as a group, doctors overestimate the likelihood of being sued,^{8,9} and the majority of patients entitled to make a formal complaint or claim for compensation do not.^{10,11}

We present some of the key findings of a large cross-sectional study to investigate the frequency of, and factors associated with, Australian doctors' involvement in medicolegal matters.

METHODS

Data collection

In September 2007, a cross-sectional self-report survey was administered to a sample of doctors who had been insured with UNITED Medical Protection before it merged with another company in July 2007 to become Avant, Australia's largest medical insurance company. This was part of a collaborative research project between the University of Sydney and Avant.

All obstetricians, gynaecologists, physicians, surgeons, anaesthetists, psychiatrists, pathologists, radiologists, paediatricians, accident and emergency specialists, general practice registrars, other registrars and specialists-in-training insured with UNITED

ABSTRACT

Objective: To investigate the frequency of, and factors associated with, Australian doctors' involvement in medicolegal matters.

Design, setting and participants: Cross-sectional survey of Australian doctors (specialists, trainees and general practitioners) insured with the medical insurance company Avant. A self-report questionnaire was mailed to Avant members in September 2007 to gather data on their involvement in medicolegal matters. Information on psychiatric morbidity and alcohol consumption was also collected using the General Health Questionnaire and the Alcohol Use Disorders Identification Test.

Main outcome measures: Occurrence and type of past and current medicolegal matters with which doctors have been involved.

Results: Of 8500 doctors invited to participate, 2999 returned completed surveys (36% response rate). Sixty-five per cent of respondents had been involved in a medicolegal matter at some time, and 14% were involved in a current matter. The two most common types of medicolegal matter were claims for compensation and complaints to a health care complaints body. Doctors were more likely to be involved in medicolegal matters if they were male, worked in high-intervention areas of medicine (surgery and obstetrics/gynaecology), and worked longer hours.

Conclusion: Our study concurs with other studies in finding an association between medicolegal matters and being male, working long hours and working in high-intervention areas of medicine. Unlike other studies, we found no association between age and involvement in a current medicolegal matter. Our findings also pose the question of whether psychiatric morbidity in doctors is a cause or effect of the medicolegal process.

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Medical Protection were invited to participate in the study, as was a sample of GP non-proceduralists. GP proceduralists were not included, as they had taken part in a GP pilot study the previous year, the findings of which have been reported elsewhere.^{1,12,13}

Avant posted out the surveys together with reply-paid return envelopes. Four weeks after the mail-out, a reminder letter and repeat questionnaire were sent to non-respondents. The questionnaire data were merged with Avant data on doctor specialty and de-identified. Avant was able to compare respondents and non-respondents with respect to age, sex, specialty and type of medicolegal matter.

Questionnaire items

"Medicolegal matter" was defined as a claim for compensation for damages, a complaint to a health care complaints body, a medical board inquiry, a disciplinary hearing, a Health Insurance Commission inquiry, a hospital dispute, a hospital investigation, a

pharmaceutical services inquiry, a complaint before an anti-discrimination board, a coronial inquiry, a criminal charge, or a patient complaint made directly to the doctor. Respondents were asked whether they had ever been involved in a medicolegal matter, and if so, how many, what type and whether these were current or past matters.

Demographic details were collected, including age, sex, country in which medical degree was obtained, marital status, type of practice, hours worked per week, weeks worked per year, time since taking a holiday, attendance at peer review meetings (defined as "formal meetings with peers to discuss patient care whereby collegial support and exploration of difficult issues would be anticipated"), attendance at formal education events (eg, conferences), and fulfilment of continuing medical education (CME) requirements.

Information on psychiatric morbidity and alcohol consumption was also collected. Psychiatric morbidity was assessed using the 28-item General Health Questionnaire

1 Response rate to survey, by medical speciality

Medical speciality	UNITED* population	Sample size	Number of surveys sent	Number (%) of surveys completed [†]
GP — non-proceduralist	8216 (7275) [‡]	1865	1833	596 (33%)
Obstetrician/gynaecologist	269	269	266	182 (68%)
Surgeon	1027	1027	1000	363 (36%)
Anaesthetist	813	813	802	354 (44%)
Psychiatrist	586	586	575	232 (40%)
Pathologist	292	292	290	89 (31%)
Radiologist	478	478	466	107 (23%)
Physician	1414	1414	1389	487 (35%)
Accident and emergency specialist	150	150	149	63 (42%)
Paediatrician	295	295	293	144 (49%)
Hospital registrar	524	524	520	146 (28%)
General practice registrar	232	232	229	58 (25%)
Specialist-in-training	148	148	146	50 (34%)
Other	407	407	402	126 (31%)
Total		8500	8360	2997[§] (36%)

GP = general practitioner. *UNITED Medical Protection (became Avant after merging with another company in July 2007). † Response rate: number of surveys completed divided by number of surveys sent, expressed as a percentage. ‡ A random sample of non-proceduralist GPs was drawn from 7275. Of 8216 GPs insured with UNITED Medical Protection, 941 had been surveyed in the previous GP study^{1,12,13} and thus were not included in our study. § Although the total number of respondents was 2999, two had deleted their identification number from the survey, and thus their specialties were unknown. ◆

(GHQ),¹⁴ a validated and sensitive screening tool used to detect common non-psychotic psychiatric morbidity over the 2 weeks preceding assessment. The 28-item version of the GHQ has four subscales: somatic symptoms, anxiety and insomnia, social dysfunction and depression. When this version of the GHQ is used as a screening instrument, the recommended case identification (cut-off) score for risk of psychiatric morbidity is a combined score >4 using the binary scoring system (with the two least symptomatic answers scoring 0 and the two most symptomatic answers scoring 1) for each of the 28 questions (eg, “Have you lost much sleep over worry?”: not at all [0], no more than usual [0], rather more than usual [1], or much more than usual [1]).

Alcohol use was assessed using the World Health Organization's Alcohol Use Disorders Identification Test (AUDIT)¹⁵ for detecting hazardous and harmful drinking. Each of the 10 AUDIT questions is scored from 0 to 4, with subjects who score a total of 8 or more being classified as potentially hazardous drinkers.

Statistical analysis

Data were analysed using SAS software, version 9.1 (SAS Institute, Cary, NC, USA). Pearson's χ^2 test was used to test for associ-

2 Proportion of doctors ever involved in a medicolegal matter, by medical speciality and type of medicolegal matter*

Type of medicolegal matter	General practitioner	Obstetrician/gynaecologist	Surgeon	Anaesthetist	Psychiatrist	Pathologist	Radiologist	Physician	Accident and emergency specialist	Paediatrician	Hospital registrar	General practice registrar	Specialist-in-training	Other	Overall
N (denominator)	582	181	360	347	227	86	105	472	62	140	146	58	49	127	2942
Any medicolegal matter (n = 1902)	58	91	86	66	64	52	61	65	68	58	40	26	45	58	65
Claim for compensation (n = 924)	21	75	61	34	8	25	34	28	21	20	10	2	14	21	31
Complaint to health care complaints body (n = 895)	28	52	51	22	36	10	22	33	17	21	10	2	10	28	30
Patient complaint direct to doctor (n = 538)	18	23	22	19	16	13	14	17	30	19	9	14	20	18	18
Coronial inquiry (n = 280)	5	9	7	12	19	8	7	9	14	15	9	7	10	5	10
Hospital investigation (n = 195)	3	10	7	6	9	2	9	5	14	6	11	7	16	3	7
Medical board inquiry (n = 169)	8	8	8	5	7	4	3	3	5	8	3	3	4	8	6
Hospital dispute (n = 146)	1	7	7	4	4	6	5	7	13	8	3	0	6	1	5
Health Insurance Commission inquiry (n = 113)	7	2	4	1	7	1	12	3	0	1	1	0	0	7	4
Disciplinary hearing (n = 51)	3	2	1	1	5	2	1	1	0	0	1	0	4	3	2
Complaint to anti-discrimination board (n = 21)	0	1	1	0	1	4	0	1	6	0	0	0	0	0	1
Pharmaceutical services inquiry (n = 18)	1	0	1	0	2	0	0	0	0	0	0	2	0	1	1
Criminal charge (n = 7)	0	1	1	0	0	1	0	0	0	0	0	0	2	0	<1

* All figures except those in the N (denominator) row are percentages. ◆

ation between involvement in a current medicolegal matter and individual categorical variables. Multivariate logistic regression analysis was also conducted on the outcome of being involved in a current medicolegal matter. Variables included were age, sex, specialty, and any other variable with a *P* value <0.25 in the univariate analysis. The fit of the model was checked using the Hosmer–Lemeshow goodness-of-fit test.¹⁶

Ethical considerations

Our study was approved by the human research ethics committees of Northern Sydney Central Coast Health and the University of Sydney, and the board of UNITED Medical Protection. Processes were established to ensure informed consent and to maintain anonymity and confidentiality at all times.

RESULTS

Of 8500 doctors invited to participate, 140 declined. Of the 8360 doctors to whom surveys were sent, 40 returned them unopened, 18 asked not to be included, seven indicated that they had retired, and four had died. The number of doctors in each specialty group and the response rate for each group are shown in Box 1. Completed surveys were returned by 2999 doctors (36% response rate).

Seventy-one per cent of respondents were male, and 85% were married or in a de facto relationship. Eighty-four per cent had obtained their medical degree in Australia, 6% in the United Kingdom or Ireland, and 3% in India or Sri Lanka. The respondents came from all states and territories of Australia, with the majority being from New South Wales (58%) and Queensland (27%). The mean number of hours worked per week was 44.8 (SD, 15.1), with male doctors working longer hours on average than female doctors (males, 48.0 hours [SD, 14.2 hours]; females, 37.1 hours [SD, 14.3 hours]; mean difference, 10.9 hours [95% CI, 9.7–12.0 hours]; *P*<0.001). The mean number of weeks worked per year was 46.0 (SD, 6.0). Thirteen per cent of the cohort had not taken a holiday in the previous year. The mean number of hours of attendance at formal education programs (such as conferences) in the previous year for the total cohort was 53.3 (SD, 40.0). Peer review was attended by 70% of respondents (range, 36% [GPs] to 97% [psychiatrists]), with a mean of 12.3 sessions per year (SD, 13.9). Ninety-six per cent of the cohort were meeting their CME requirements.

3 Univariate and multivariate* analyses of factors associated with being involved in a current medicolegal matter

Variable†	Involved in current medicolegal matter		<i>P</i> ‡	AOR (95% CI)§	<i>P</i> §
	No (%)	Yes (%)			
Medical specialty			<0.001		<0.001
General practitioner (<i>n</i> = 582)	536 (92)	46 (9)		1.00	
Obstetrician/gynaecologist (<i>n</i> = 181)	120 (66)	61 (34)		6.66 (3.98–11.15)	
Surgeon (<i>n</i> = 360)	274 (76)	86 (24)		3.11 (1.95–4.97)	
Anaesthetist (<i>n</i> = 347)	315 (91)	32 (9)		1.06 (0.64–1.76)	
Psychiatrist (<i>n</i> = 227)	198 (87)	29 (13)		1.71 (0.99–2.96)	
Pathologist (<i>n</i> = 86)	72 (84)	14 (16)		1.94 (0.95–3.98)	
Radiologist (<i>n</i> = 105)	93 (89)	12 (11)		1.22 (0.59–2.52)	
Physician (<i>n</i> = 472)	406 (86)	66 (14)		1.52 (0.97–2.39)	
Accident and emergency specialist (<i>n</i> = 62)	57 (92)	5 (8)		0.66 (0.21–1.89)	
Paediatrician (<i>n</i> = 140)	119 (85)	21 (15)		1.92 (1.06–3.47)	
Hospital registrar (<i>n</i> = 146)	128 (88)	18 (12)		1.34 (0.69–2.60)	
General practice registrar (<i>n</i> = 58)	52 (90)	6 (10)		1.39 (0.54–3.58)	
Specialist-in-training (<i>n</i> = 49)	41 (84)	8 (16)		1.77 (0.70–4.47)	
Other (<i>n</i> = 127)	105 (82)	22 (17)		2.25 (1.24–4.10)	
Sex			<0.001		0.005
Female (<i>n</i> = 855)	771 (90)	84 (10)		1.00	
Male (<i>n</i> = 2087)	1745 (84)	342 (16)		1.56 (1.14–2.14)	
Age group (years)			0.44		0.72
< 40 (<i>n</i> = 481)	419 (87)	62 (13)		1.00	
40–49 (<i>n</i> = 868)	747 (86)	121 (14)		0.84 (0.57–1.24)	
50–59 (<i>n</i> = 911)	766 (84)	145 (16)		0.97 (0.66–1.44)	
≥ 60 (<i>n</i> = 682)	584 (86)	98 (14)		0.90 (0.58–1.38)	
Marital status			0.004		0.005
Single (<i>n</i> = 230)	210 (91)	20 (9)		1.00	
Partnered (<i>n</i> = 2506)	2136 (85)	370 (15)		1.83 (1.10–3.05)	
Divorced/separated (<i>n</i> = 150)	119 (80)	31 (20)		3.15 (1.62–6.11)	
Widowed (<i>n</i> = 38)	36 (95)	2 (5)		0.75 (0.60–3.53)	

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AOR = adjusted odds ratio. * Hosmer–Lemeshow goodness-of-fit test, *P* = 0.77. † Data were missing in some categories. ‡ Univariate analysis. § Multivariate analysis.

Respondents versus non-respondents

There were minor differences between respondents and non-respondents in age (51.7 v 50.3 years) and sex (71% v 74% male) (*P*<0.05). Based on data from the Avant database, respondents were slightly more likely than non-respondents to have been involved in claims for compensation (28.0% v 23.0%), complaints to a health care complaints body (20.6% v 17.1%) and coronial inquiries (4.7% v 3.3%) (*P*<0.05 for all three comparisons). There was no difference between respondents and non-respondents with respect to involvement in

the other nine categories of medicolegal matter (*P*>0.05).

Medicolegal matters

Sixty-five per cent of respondents had been involved in medicolegal matters and 14% were involved in a current matter. The frequency of occurrence of the different types of medicolegal matters are summarised in Box 2. The most common were claims for compensation and complaints to a health care complaints body, and the least common were criminal charges, pharmaceutical services inquiries, anti-discrimination board

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Variable [†]	Involved in current medicolegal matter		P [‡]	AOR (95% CI) [§]	P [§]
	No (%)	Yes (%)			
Country in which medical degree obtained			0.027		0.08
Australia (n = 2463)	2090 (85)	373 (15)		1.00	
Overseas (n = 472)	419 (89)	53 (11)		0.74 (0.53–1.03)	
Solo practice			0.026		0.07
No (n = 2034)	1758 (86)	276 (14)		1.00	
Yes (n = 898)	748 (83)	150 (17)		0.78 (0.59–1.02)	
Hours worked per week			< 0.001		0.04
< 40 (n = 811)	742 (91)	69 (9)		1.00	
40–49 (n = 753)	646 (86)	107 (14)		1.45 (1.01–2.06)	
50–59 (n = 746)	608 (82)	138 (19)		1.69 (1.18–2.42)	
≥ 60 (n = 597)	490 (82)	107 (18)		1.37 (0.93–2.01)	
Peer review in past 12 months			< 0.001		0.86
No (n = 874)	777 (89)	97 (11)		1.00	
Yes (n = 2045)	1720 (84)	325 (16)		0.98 (0.73–1.30)	
CME requirements[¶]			0.89		
Not met (n = 113)	96 (85)	17 (15)			
Met (n = 2620)	2238 (85)	382 (15)			
Teaching role			< 0.001		0.07
No (n = 1001)	901 (89)	100 (11)		1.00	
Yes (n = 1925)	1609 (84)	316 (16)		1.29 (0.98–1.69)	
AUDIT score ≥ 8			< 0.001		0.05
No (n = 2491)	2156 (87)	335 (13)		1.00	
Yes (n = 430)	344 (80)	86 (20)		1.33 (1.00–1.77)	
GHQ score > 4			< 0.001		< 0.001
No (n = 2098)	1840 (88)	258 (12)		1.00	
Yes (n = 801)	638 (80)	163 (20)		1.98 (1.56–2.50)	
Total (n = 2942)	2516 (86)	426 (14)			

AOR = adjusted odds ratio. AUDIT = Alcohol Use Disorders Identification Test. CME = continuing medical education. GHQ = General Health Questionnaire. * Hosmer–Lemeshow goodness-of-fit test, $P = 0.77$. † Data were missing in some categories. ‡ Univariate analysis. § Multivariate analysis. ¶ This variable was not included in the multivariate logistic regression analysis. ◆

complaints and disciplinary hearings. The proportions of respondents who had been involved in one or more matters were as follows: one matter (22%), two matters (16%), three matters (9%), four matters (6%), five matters (4%), and six or more matters (7%).

Results of univariate and multivariate analyses of factors associated with involvement in a current medicolegal matter are shown in Box 3. Obstetricians/gynaecologists and surgeons had the highest risk of being involved in a current medicolegal matter. Other factors associated with higher

risk of involvement in medicolegal matters were being male, being partnered or divorced/separated (rather than single), working longer hours, and having a GHQ score >4. Factors that were significant in the univariate analysis but not in the multivariate model were the country in which the doctor's medical degree was obtained, attendance at peer review meetings, having a teaching role, type of practice (solo or non-solo) and AUDIT score. Age group and meeting CME requirements were not associated with involvement in a current medicolegal matter.

DISCUSSION

Our investigation is the largest study of its kind to examine factors associated with doctors' involvement in medicolegal matters.^{1,3,4,6} Our findings were similar to those of the GP pilot study,^{1,12,13} and concur with other studies showing that doctors who are male, work in high-intervention areas of medicine, and work longer hours are more likely to be involved in a medicolegal matter.^{1-4,6}

Our large sample size and questionnaire design enabled us to investigate factors associated with both current and past medicolegal matters. Like other studies that have investigated factors associated with ever being involved in a medicolegal matter, we found that age is a factor (analyses not shown here). Clearly, the longer someone practises medicine, the more likely it is that he or she will eventually be involved in a medicolegal matter. However, unlike other studies, our survey showed that there was no association between a doctor's age and being involved in a *current* medicolegal matter.

Additionally, we were able to further explore the difference between the sexes. Are males inherently more likely to be involved in a medicolegal matter, or is it simply that males tend to work in high-risk specialties and work longer hours (along with other possible confounding factors)? Our logistic regression analysis showed that there does appear to be a difference between male and female doctors, even after adjusting for other factors, with males being 1.56 (95% CI, 1.14–2.14) times more likely to be involved in a current medicolegal matter.

Strengths of our study were the size and representativeness of the sample. Respondents reflected a broad cross-section of the Australian medical workforce — in particular, medical specialist groups. Comparing our figures with data reported in the 2005 Australian medical workforce survey,¹⁷ we estimate that our sample of 2999 doctors represents 5% of the Australian medical workforce and about 10% of specialty groups (range, 9% [physicians] to 12% [anaesthetists]). The mean number of hours worked per week by doctors in our sample (44.8 overall; 48.0 for males and 37.1 for females) was similar to the mean number reported in the 2005 workforce survey (43.7 overall; 46.7 for males and 37.6 for females). However, the mean age of doctors in our sample (51.7 years overall; 53.6 years for males and 46.9 years for females) was higher than the mean age in the 2005 survey (45.1 years overall; 47.3 years for males and 40.6

years for females), owing to the exclusion of most junior doctors from our sample.

A limitation of our study was the low response rate. However, survey research challenges the idea that a high response rate (>60%) is necessary.^{18,19} We were able to compare respondents and non-respondents with respect to age, sex and type of medicolegal matter. Although there were statistically significant differences in age and sex, the differences were very small. Respondents were more likely than non-respondents to have been the subject of claims for compensation, health care complaints and coronial inquiries, but again, these differences were small. Our results may have slightly overestimated the occurrence of medicolegal matters.

To further examine the non-response issue, we conducted a sensitivity analysis by weighting the results according to the response rate of each specialty.²⁰ This changed the estimated proportion of doctors who had ever been involved in a medicolegal matter from 65% to 63%. Similarly, all other weighted percentages differed by less than 2% from the unweighted percentages. When weighting was applied to the logistic regression analysis, the estimated odd ratios differed by less than 10% from those for the unweighted analysis. The most notable changes were that having a teaching role and having an AUDIT score ≥ 8 became significantly associated with involvement in a current medicolegal matter (*P* values, 0.03 and 0.02, respectively).

To our knowledge, no other studies (apart from the GP pilot study^{1,12,13}) have tested for an association between GHQ and AUDIT scores and doctors' involvement in medicolegal matters. Our results using these instruments raise questions about causation: do doctors involved in a current medicolegal matter have higher scores due to the stress of the medicolegal process, or do their higher levels of psychiatric morbidity make them more likely to be the subject of a complaint or inquiry? This issue will be explored in a later article.

CONCLUSION

About two-thirds of doctors in our study had been involved in medicolegal matters, and about 14% were involved in a current matter. The two most common types of medicolegal matter were claims for compensation and complaints to a health care complaints body, both of which had been experienced by about 30% of doctors. Our study concurs with international findings that male doctors

and those working long hours and in high-intervention areas of medicine are more likely to be the subject of medicolegal matters. However, unlike other studies, we found no association between age and being involved in a current matter. In addition, our findings pose the question of whether the higher psychiatric morbidity in doctors experiencing a medicolegal matter is a cause or effect of the medicolegal process.

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COMPETING INTERESTS

Avant provided inhouse assistance with the sample selection, as well as funding for printing and mailing of the questionnaire, independent data analysis, and payment of a research officer (Michele Daly). Simon Willcock is an elected board member of Avant. Elizabeth van Ekert was employed by UNITED Medical Protection and then Avant until October 2008.

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