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MEDICO-LEGAL MATTERS AND AUSTRALIAN DOCTORS:

An investigation of doctors' experience of medico-legal matters, their mental health and their practice of medicine.

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A thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy

Faculty of Medicine

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Definition of medico-legal terms

Adverse events	<p>An incident in which harm resulted to a person receiving health care (Runciman 2006).</p> <p>The World Alliance for patient safety of the World Health Organisation (2005) defines adverse event as “An injury related to medical management, in contrast to complications of disease (Hiatt et al 1989). Medical management includes all aspects of care, including diagnosis and treatment, failure to diagnose or treat, and the systems and equipment used to deliver care. Adverse events may be preventable or non-preventable”. While all adverse events result from medical management, not all are attributable to errors (Kohn et al 2000).</p>
Case	A case is a suit filed in the legal system (Taragin et al 1995).
Complaint	An expression of dissatisfaction with something (Runciman 2006).
Defensive medicine	Medical practice based on the fear of legal liability rather than on the best interests of the patients (Studdert et al 2005, Kessler et al 2006).
Disciplinary body	A person or body that has the power to discipline a health practitioner or to suspend or cancel the registration of a health practitioner (New South Wales Government, Health Care Complaints Act 1993).
Gross negligence	A reckless indifference to an obvious or understood risk of injury to a patient. If a patient dies as a result of gross negligence, criminal law can be applied in a charge of manslaughter (Runciman et al 2007).
Legal risk	This is defined in this thesis as the doctor’s understanding of the law as it relates to mistakes and adverse patient outcomes.
Medical malpractice	The term in the USA for medical negligence.
Medico-legal matter	A broad term used in this thesis to include the following specific matters: a claim for compensation, 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 direct to the doctor.
Negligence	A failure to exercise reasonable care and skill (Review of the law of negligence (Ipp et al 2002).
Tort	A tort is a civil wrong, or injury not covered by a contract. Negligence is a tort (i.e. a civil wrong) (Runciman et al 2007).

Thesis Abstract

This thesis investigates factors associated with Australian doctors experiencing a medico-legal matter and the mental health and changes to the practice of those doctors.

Psychiatric morbidity, alcohol use, personality style, perception of legal risk¹ and perception of changes of practice due to medico-legal concerns were measured. Doctors who experienced a medico-legal matter were compared with those who had not.

Prior to this thesis there was no Australian evidence on the response of doctors to complaints, claims for compensation and inquiries. I use the broad term medico-legal matters to cover these categories.

Thesis Structure

Chapters 1 and 2

These are introductory chapters. Chapter 1 provides the background to the medico-legal environment internationally and in Australia. Chapter 2 provides the background to psychiatric morbidity and alcohol use in doctors.

Chapter 3

This is a literature review of factors associated with being the subject of a medico-legal matter, the emotional response of doctors to a medico-legal matter, and defensive medicine with the perceived changes in practice due to medico-legal concerns.

The findings from my research are presented in the seven publications that make up Chapters 4-10. These were published during the time of my candidature. The first study was a small pilot which informed the method for the larger two studies.

The publications and their location in this thesis are set out below.

¹ Legal risk is used here to refer to the doctors' understanding of the law as it relates to mistakes and adverse patient outcomes.

Chapter 4: The New South Wales Health Care Complaints pilot study

Nash L, Curtis B, Walton M, Willcock S, Tennant C. The response of doctors to a formal complaint. *Australasian Psychiatry*. 2006; 14: 246-250.

Aim: To investigate doctors' emotional response to a complaint to the New South Wales Health Care Complaints Commission (HCCC) and doctors' understanding of legal risk.

Method: Sixty-nine doctors who were the subject of a complaint to the HCCC were sent a questionnaire two weeks after they were notified of the complaint. The questionnaire included demographic details, number of previous complaints, the General Health Questionnaire-28 (Goldberg 1998) to measure psychiatric morbidity using the case identification method², Sheehans disability scale (Leon et al 1997) to measure disability in work, social and family life, the Eysenck Personality Questionnaire (Eysenck et al 1991) to measure personality traits, and the Attitude to Helping Others scale (Webb et al 2000) as a measure of altruism. A set of questions were also designed to measure the doctors' perceptions of legal risk.

Key results: Sixty-nine surveys were sent and 40 doctors responded (response rate 60 percent). Thirty-eight per cent of respondents met case identification for psychiatric morbidity using the General Health Questionnaire (Goldberg 1998). There was minimal functional impairment of work, social or family life. All doctors scored highly on the attitude to helping others scale. There was a significant correlation between higher number of educational meetings attended and reduced number of complaints ($r=0.56$; $p<0.001$).

The questions assessing doctor's perception of legal risk appeared to have acceptable construct validity and showed that many doctors misunderstand legal risk.

² Case identification for risk of psychiatric morbidity is based on a combined score of more than 4 for the total questionnaire. The questionnaire has 28 items and uses binary scoring for each item with the two least symptomatic answers scoring 0 and the two most symptomatic answers scoring 1.

Method modification for the later studies: This pilot study informed the method of the subsequent studies. The Health Care Complaints Commission (HCCC) controlled the mailing of the questionnaires for confidentiality reasons, and it is likely that some doctors may not have been sent the questionnaire as the sample was considerably smaller than was anticipated. Receiving the questionnaire two weeks after notification of the complaint may also have been too early to assess the impact of the complaint on the doctor. The distribution method and timing of the survey needed to change. A cross sectional design was used for the later studies rather than relying on each subject requiring their own timeline. Therefore, once the sample was chosen, all doctors in that sample were sent the questionnaire at the same time. The Attitude to Helping Others measure (Webb et al 2000) was not found to be a discerning measure as all respondents scored very highly. It was not used subsequently. The Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al 1993), to measure potentially alcohol use, was added to the subsequent studies. The questions in relation to perceptions of legal risk were expanded for the larger studies to include changes in the practice of medicine due to medico-legal concerns. These items were chosen from the international literature investigating defensive medicine.

Chapters 5, 6 and 7: The Australian General Practitioner study

Three publications report the findings of this study. The aims and methods are described here, followed by a summary of the individual publications and their key findings.

Aims of the Australian General Practitioner Study (The GP Study):

- To investigate the difference in psychiatric morbidity and alcohol use between Australian general practitioners (GPs) who had experienced a medico-legal matter with those who had not (Chapter 5).

- To investigate Australian GPs' understanding of legal risk and their perceived practice changes due to medico-legal concerns. GPs who had experienced a medico-legal matter were compared with those who had not (Chapter 6).
- To investigate the the personality traits of Australian GPs and their gender, work practice arrangements, and history of medico-legal matters. GPs who had experienced a medico-legal matter were compared with those who had not (Chapter 7).

Method for the GP study: A cross sectional postal survey was sent to 1239 GPs who were insured with a major medical insurance company in Australia. There were two sources of data.

The main source was from the survey which included:

- Demographic information
- Experience of a medico-legal matter with any medical defence organization³
- Psychiatric morbidity measured by the General Health Questionnaire (Goldberg 1998).
- Potentially hazardous alcohol use measure by the Alcohol Use Disorders Identification Test (Saunders et al 1993).
- Personality traits measured by the Eysenck Personality Questionnaire (Eysenck et al 1991).
- The doctor's understanding of legal risk
- Changes to their practice of medicine due to medico-legal concerns

The second set of data was extracted by the collaborating medical insurance company from their database. This included age, sex, proceduralist or not, and number and type of medico-

³ This was defined as a claim for compensation for damages, complaint to a healthcare complaints body, medical board inquiry, disciplinary hearing, Health Insurance Commission (HIC) inquiry, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, anti-discrimination board inquiry, coronial inquiry and criminal charge.

legal matters experienced with that company. Respondents were compared with non-respondents on age, sex, proceduralist or not, and experience of medico-legal matters.

Response rate: there were 566 respondents out of 1239 GPs who were mailed the survey (46 percent response rate to survey).

Chapter 5: Psychological morbidity in the GP study

Nash L, Daly M, Johnson M, Walter G, Walton M, Willcock S, Coulston C, Van Ekert E, Tennant C. Psychological morbidity in Australian doctors who have and have not experienced a medico-legal matter: cross-sectional survey. *Australian and New Zealand Journal of Psychiatry.* 2007; 41:917-925.

Key results: Fifty-nine per cent of respondents to the survey reported experiencing a medico-legal matter, with 13 percent having a current matter. Those with a current matter reported increased levels of disability (in work, social or family life) and higher levels of psychiatric morbidity (45 percent vs 27 percent GHQ case identification rates) compared to those with no current matter. Male respondents drank significantly more alcohol than female respondents, and male respondents with current or past medico-legal matters had significantly higher levels of alcohol use than male respondents with no experience of medico-legal matters.

Chapter 6: Change in practice due to medico-legal concerns in the GP study

Nash L, Walton M, Daly M, Johnson M, Van Ekert E, Walter G, Willcock S, Tennant C. GPs' concerns about medico-legal issues – How it affects their practice. *Australian Family Physician.* 2009;38:66-70.

Key Results: GPs with experience of a medico-legal matter were more likely than their colleagues with no experience to report that the law required them to make perfect decisions and that medico-legal concerns made them consider early retirement from medicine. They

were also less likely to believe that inadequate communication is a factor in most complaints.

GPs' concerns about medico-legal matters caused them to practice defensive medicine for example ordering more tests than they believed clinically required (73 percent) and referring to specialists more than usual (66 percent) due to medico-legal concerns. However some potentially safer changes were also made for example implementing systems to track test results more than usual (70 percent); and communication of risk to patients more than usual (68 percent). Thus medico-legal concerns can cause potentially beneficial and potentially detrimental changes to the practice of medicine.

Chapter 7: Personality of doctors and association with medico-legal matters

Nash L, Daly M, Johnson M, Coulston C, Tennant C, van Ekert E, Walter G, Willcock S, Walton M. Personality, gender and medico-legal matters in medical Practice. *Australasian Psychiatry*. 2009;17:19-25.

Key Results: Male respondents had significantly higher psychoticism scores than females using the Eysenck Personality Questionnaire (psychoticism refers to being “tough minded” not psychotic) and females had significantly higher neuroticism scores than males, as in community samples.

Males who reported a medico-legal matter had higher neuroticism scores than males who did not report medico-legal matters. This was not the case for females. However, for males, this pattern was not replicated when considering data from the medical insurance company. Either the higher neuroticism males were over inclusive in reporting their experience, or they had other matters with other medical insurance organisations. Either way, there was no consistent pattern regarding personality traits and experience of medico-legal matters.

Would the findings reported in the GP study relating to changes in practice,

understanding of legal risk and morbidity associated with GPs experiencing a medico-legal matter be representative of a larger and broader sample of Australian doctors? This was investigated in the final study. The larger size of the final study and the representative sample of Australian doctors make the findings convincing particularly as they are similar in most areas, to the findings of the GP study.

Chapters 8, 9 and 10: The large Australian study of specialists, GPs and trainees

Three publications report the findings of this study. The aims and methods are described here followed by the key findings of the three publications.

Aims of the large study of specialists, GPs and trainees: There were three aims of the large study:

- To investigate the factors associated with Australian doctors' involvement in medico-legal matters (chapter 8).
- To investigate whether having a current medico-legal matter is associated with psychiatric morbidity and hazardous alcohol use in Australian doctors (chapter 9).
- To explore the perceived impact of medico-legal concerns on how Australian doctors practise medicine. Doctors who have experienced a medico-legal matter are compared with those who have not (chapter 10).

Method used in the large study of specialists, GPs and trainees: A cross-sectional postal survey was sent to 8,360 Australian doctors (specialists, general practitioners and trainees) insured with a major medical insurance company. The method of the GP study was used with three additions: a larger and broader sample of doctors were surveyed, respondents were asked for number and type of medico-legal matter they had experienced and the collaborating insurance company was able to measure response rate for each specialty group.

Response rate: There were 2,999 respondents out of 8,360 doctors who were mailed the survey (36 percent response rate to survey).

Chapter 8: Factors associated with Australian doctors experiencing a medico-legal matter

Nash L, Kelly P, Daly M, Walter G, van Ekert E, Walton M, Willcock S, Tennant C.
Australian doctors' involvement in medico-legal matters: a cross-sectional self-report study. *Medical Journal of Australia*. 2009;191:436-440.

Key results: Sixty-five per cent of respondents had been involved in a medico-legal matter at some time, and 14 percent were involved in a current matter. The two most common types of medico-legal matters were claims for compensation, experienced by 31 percent of respondents, and complaints to a health care complaints body, experienced by 30 percent of respondents. Rates of each type of medico-legal matter per specialty group are reported. A multivariate logistic regression analysis of factors found that doctors were more likely to be involved in medico-legal matters if they were male, worked in high-intervention areas of medicine (surgery and obstetrics/gynaecology), and worked long hours. These Australian findings concur with the international literature.

Chapter 9: Psychiatric morbidity and alcohol use in Australian doctors

Nash L, Daly M, Kelly P, van Ekert E, Walter G, Walton M, Willcock S and Tennant C. Factors associated with psychiatric morbidity and hazardous alcohol use in Australian doctors. *Medical Journal of Australia*. 2010; 193: 161-166.

Key results: Factors significantly associated with psychiatric morbidity in doctors were having a current medico-legal matter, not taking a holiday in the previous year, working long hours and having personality traits of neuroticism or introversion.

Factors significantly associated with potentially hazardous alcohol use in doctors were

being male, aged between 40 and 59 years, solo practitioners, having personality traits of neuroticism or extraversion and failing to meet Continuing Medical Education requirements.

Chapter 10: Change of practice due to medico-legal concerns in Australian doctors

Nash L, Walton M, Daly M, Kelly P, Walter G, Van Ekert E, Willcock S, Tennant C.
Perceived practice change in Australian doctors as a result of medico-legal concerns.
Medical Journal of Australia. 2010; 193: 579–583.

Key results: Respondents reported changes in practice due to medico-legal concerns, with 43 percent of clinicians stating that they refer patients to other health professionals more than usual, 55 percent stating that they order tests more than usual and 11 percent stating that they prescribe medications more than usual due to medico-legal concerns. Respondents also report improved communication of risk to patients (66 percent), increased disclosure of uncertainty (44 percent), better systems for tracking results (48 percent), and better methods for identifying non-attenders (39 percent) and for auditing clinical practice (35 percent) due to medico-legal concerns.

Thirty-three percent of respondents thought about giving up medicine, 32 percent considered reducing hours of work and 40 percent considered retiring early due to medico-legal concerns. These were all significantly greater for doctors who had experienced a medico-legal matter than those who had not.

This Australian study, like international studies, confirms that doctor's concerns about medico-legal issues impacts on the practice of medicine in a variety of ways, potentially beneficial and potentially detrimental. There is a greater perceived impact on those doctors who have experienced a medico-legal matter.

Chapters 11 and 12

This new Australian research, similar to the international literature, finds that doctors' involvement in medico-legal matters is a time of heightened stress and that Australian doctors perceive they change their practice due to medico-legal concerns. The findings from my three studies are compared with the international literature in chapter 11, and the conclusions and recommendations are made in chapter 12.

The findings from this research will inform doctors, universities, medical colleges and medical insurance companies in Australia about doctors who are the subject of a complaint/claim/inquiry. The doctors' experience of medico-legal matters, as documented in this thesis, may also inform future discussions about systems of health care complaint and compensation in Australia.

Additional publications and presentations in the field of study

Publications

Nash L, Tennant C, Walton M. The psychological impact of complaints and negligence suits on doctors. *Australasian Psychiatry*. 2004;12:278-281.

Nash L, Daly M, van Ekert E, Kelly P. How do medico-legal matters impact on the doctor: Research findings from an Australian study. In Figley C, Huggard P, Rees C, editors. *First Do No Self-Harm: Understanding and Promoting Physician Stress Resilience*. Oxford University Press, in press

Presentations at conferences

Nash L. How medico-legal matters impact on doctors. Annual Congress of the Royal Australian and New Zealand College of Psychiatrists, May 2010, Auckland.

Nash L. Invited panel member at hypothetical workshop: "Adverse incidents and how they affect psychiatrists working in the public sector." Annual Congress of the Royal Australian and New Zealand College of Psychiatrists, May 2009, Adelaide.

Nash L, Daly M, Walton M, Willcock S, Walter G, Tennant C, Coulston C, Johnson M, Van Ekert E. The psychological impact and practice changes associated with medico-legal matters in Australian doctors. Part of a workshop on "Better outcomes for patients and better health for doctors - a focus on medico-legal matters." International Doctors' Health Conference, Sydney 2007.

Nash L, Daly M, Walton M, Willcock S, Walter G, Tennant C, Coulston C, Johnson M, Van Ekert E. Psychological morbidity in Australian GPs who have experienced a medico-legal matter- a cross sectional survey. NSW Rural Psychiatrists Conference, 2007

Nash L, Tennant C, Willcock S, Walton M, Daly M, Walter G, Johnson M, Van Ekert E. The Psychological impact on doctors of complaints and law suits. Annual Congress of the Royal Australian and New Zealand College of Psychiatrists, May 2007, Gold Coast.

Nash L, Willcock S, Walton M, Curtis B, Tennant C. The Psychological impact on doctors of complaints to the HCCC, and Doctors' perception of legal risk: a pilot study. Annual Congress of the Royal Australian and New Zealand College of Psychiatrists, May 2005, Sydney.

Preface

I have had the benefit of working with a large research group that has evolved with time over the six years of this research. My collaborators have come from the University of Sydney and the medical insurance companies UNITED Medical Protection, Avant and MDA National.

They are listed in the Declaration of co-authors on the following page.

Ethics approval was granted by the Northern Sydney Central Coast Area Health and University of Sydney Medical Research Ethics Committees.

I was responsible for all phases of this research under the supervision of Professor Chris Tennant, Professor Merrilyn Walton and Professor Garry Walter. However, particular assistance was required for the statistical analysis. At various times through the life of the project, this assistance has been provided by Dr Brad Curtis, Michele Daly, Dr Carissa Coulston and Dr Patrick Kelly.

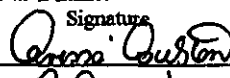

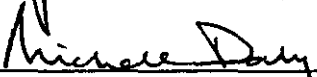
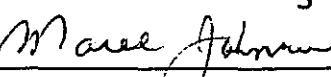

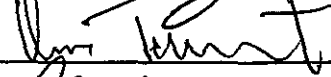
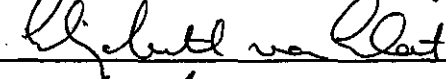
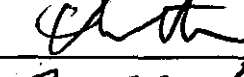
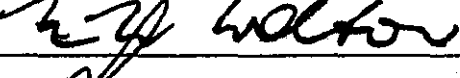
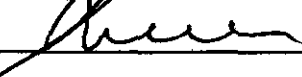
Funding was received from research grants from the University of Sydney, Northern Sydney Health and Avant. In addition, I received a half time research fellowship from the New South Wales Institute of Psychiatry for eight months in 2008.

Declaration of co-authors

We, the undersigned co-authors declare that the following eight articles, presented in the body of this thesis (articles 2 – 8) and in the appendix (article 1), are from work done primarily by the first author Dr Louise Nash who designed, organised, managed and reported the studies and was the primary author of these articles.

1. Nash L, Tennant C, Walton M. The psychological impact of complaints and negligence suits on doctors. *Australasian Psychiatry*, 2004;12:278-281
2. Nash L, Curtis B, Walton M, Willcock S, Tennant C. The response of doctors to a complaint to the HCCC. *Australasian Psychiatry*, 2006; 14: 246-250
3. Nash L, Daly M, Johnson M, Walter G, Walton M, Willcock S, Coulston C, Van Ekert E, Tennant C. Psychological morbidity in Australian doctors who have and have not experienced a medico-legal matter: cross-sectional survey. *Australian and New Zealand Journal of Psychiatry* 2007; 41:917-925.
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I hope that in the long term, this thesis will make the difficulties of being the subject of a medico-legal matter less traumatic for doctors.

CHAPTER 1: Background to the medico-legal environment

The literature overwhelmingly portrays that medico-legal matters are low frequency high stress events for doctors. “Medico-legal matters” in this thesis includes claims for compensation for negligence, complaints against the doctor, and inquiries for example coronial inquests. Most of the literature is about doctors’ experience of claims for compensation for negligence and complaints with little reporting of Australian doctors’ experience of medico-legal matters. This thesis is about doctors’ emotional responses to medico-legal matters and changes in their practice of medicine in response to medico-legal concerns; it is not about the law.

My research, for the first time, provides the Australian evidence on doctors’ responses to medico-legal matters. This can be used to develop appropriate education of the medical workforce on these important issues.

1. Background to the thesis

Adverse patient outcomes occur in health care, regardless of intent and quality of care provided (Wilson et al 1995; Brennan et al 1991; Leape 1994, Vincent et al 2001). Patients may be harmed, or experience inadequate treatment, or be dissatisfied with no adverse outcome, causing them to seek redress through medico-legal processes against a doctor. Since the late 1980s, formal complaint mechanisms for health care have operated in all Australian states and territories in addition to the right of patients to seek compensation as a result of claims of medical negligence. A minority of patients claim compensation when there has been no wrongful treatment (Localio et al 1991, Brennan et al 1996, Runciman et al 2003, Studdert et al 2000), or complain when there has been no cause for complaint (Health Care Complaints Commission 2008-09 annual report). Bad outcomes cause distress for all concerned, not only for the patient and their family, but also for the doctor, and their family (Wu 2000). The medico-legal processes of complaints, claims and inquiries are distressing for doctors

regardless of the cause or the outcome. There is international evidence of this distress, but no Australian evidence.

2. Aims of the thesis

This thesis explores the psychological response, change in practice and understanding of medico-legal matters in Australian doctors. Three major areas were investigated:

- The factors associated with Australian doctors' involvement in medico-legal matters.
- The association between a current medico-legal matter and psychiatric morbidity and hazardous alcohol use in doctors.
- The perceived impact of medico-legal concerns on how Australian doctors practise medicine. Doctors who have experienced a medico-legal matter are compared with doctors who have not.

The final aim of this project is to inform Australian doctors, medical insurance companies, Health Care Complaints bodies, medical schools and medical colleges of the study findings, so that Australian doctors can be better informed about medico-legal processes and the potential impact on their health and practice. This has been achieved in part through publications in peer reviewed Australian journals, presentations at national and international conferences, and interviews with and articles in the Australian media⁴.

Chapter 1 covers the background to the medico-legal environment, including the tension between tort law and the patient safety movement, the landmark adverse event studies, the lack of correlation between negligent adverse events and negligence claims, over-estimation by doctors of the likelihood of being sued, reasons for claims and complaints and

⁴ For example Australian Doctor 30.4.10; AAP 1.8.10; The Examiner 2.8.10; International Business Times 2.8.10; MJA insight, 2.8.10; The Sydney Morning Herald 15.11.10; ABC radio 15.11.10; Medical Observer 19.11.10; 2SER radio 20.11.10.

the frequency of these in Australia. Chapter 2 provides the background contextual information on psychiatric morbidity and alcohol use in doctors, and whether this impacts on patient care. Chapter 3 examines the literature pertaining to the factors associated with doctors who are more likely to experience a medico-legal matter, the association between a medico-legal matter and psychiatric morbidity and alcohol use in doctors, and changes to the medical practice of doctors due to medico-legal concerns.

3. The medico-legal environment internationally

Many patients who are injured by negligent care do not receive nor seek compensation. Conversely, some receiving compensation have not received negligent care (Localio et al 1991; Brennan et al 1996, Runciman et al 2003, Studdert et al 2000). Another issue with the current medico-legal environment is the high financial cost of litigation and the additional cost of defensive medicine⁵ that it encourages (Berstein 2008, Helland 2009). Furthermore, tort law promotes a climate of blame and discourages the reporting of errors. Acknowledging errors is a prerequisite to learning from them (Donaldson 2003). Finally, it can turn patients and doctors into adversaries (Rowe 2004).

Australia, other Commonwealth countries and the United States of America (USA) inherited tort law from the United Kingdom (UK), where compensation for medical harm is dealt with by the tort of negligence. A tort is a wrongful act or wrongful omission that causes harm. Negligence⁶ is the specific tort involved in medical litigation (Donaldson 2003). The common law of torts awards damages to a patient when his or her doctor is found to have acted negligently (Kessler 2006).

The doctor's medical indemnity insurance is a form of liability insurance that

⁵ Defensive medicine is medical practice based on the fear of legal liability rather than on the best interests of the patient (Kessler et al 2006, Studdert et al 2005).

⁶ Negligence refers to a failure to exercise reasonable care and skill, as defined in the Commonwealth of Australia Review of the law of negligence (Ipp et al 2002).

indemnifies doctors for financial loss from actions against them as a result of their professional duties.

There are other systems for resolving negligence which share little in common with tort law. For example, in Taiwan medical negligence is part of the criminal law (Lin 2009). In that country between 2000 and 2004 one doctor was found guilty every 3 months of the crimes of delayed or missed diagnoses, or surgical complications. This is the highest criminal rate of doctors in the world (Lin 2009). In Europe, Italy has the highest number of doctors subject to criminal proceedings for medical negligence. Traina, writing from Italy, believes that this has led to an increase in defensive medicine⁷ (Traina 2009).

No-fault compensation systems⁸ operate in Sweden, Denmark and New Zealand. The Chief Medical Officer of England, and Chair of the World Alliance for Patient Safety Sir Liam Donaldson notes that a no fault system provides more certainty for claimants, provides speedier resolution, lowers administration and legal costs, reduces tension between clinicians and claimants and there is a greater willingness by clinicians to report errors and adverse events (Donaldson 2003). The Nordic systems use an 'avoidability standard', principally defined as injury that would not occur in the hands of the best practitioner (Kachalia et al 2005). In New Zealand, compensation is payable for personal injury caused by medical error, negligence, or mishap, or where the consequence is a rare outcome of treatment (Donaldson 2003).

4. Conflict between tort law and patient safety

There is a natural tension between tort law which focuses on compensating individual patients for their bad outcomes usually against an individually named doctor, and safety in

⁷ Defensive medicine is discussed more extensively in chapter 3.

⁸ No fault compensation schemes are an alternative to tort law for providing financial compensation for injuries. Generally negligence does not need to be proven although most schemes retain a test of causation and many also have tests of avoidability (Donaldson 2003).

health care with its primary focus on quality improvement. Tort law requires harm to be directly attributed to the actions of a person. Runciman argues that blaming well intentioned people for errors in health care drives the problem of iatrogenic harm underground (Runciman et al 2003).

Professor Merrilyn Walton, the former Commissioner of the Health Care Complaints Commission of NSW stated that errors will always be made, but if the focus is always on the actions of individuals, the opportunity to improve the system is lost (Walton 1998).

Similarly, Studdert described a “clash” between tort law and the patient safety movement with this clash undermining efforts to improve quality (Studdert et al 2004). May argues that efforts to prevent error must address clinicians’ fear of malpractice litigation, as this is an obstacle to reporting and discussing medical mistakes (May et al 2001).

To inform Australian doctors of the reality of medico-legal matters is one of the purposes of this thesis. This may reduce some of the fear and misperception that currently exists.

5. Adverse events studies and their correlation with negligence claims

The Quality in Australian Health Care Study (Wilson et al 1995), together with the Harvard Medical Practice study (Brennan et al 1991), were groundbreaking studies that systematically revealed the nature and scale of iatrogenic harm in healthcare. Other countries have done similar studies (table 1). The Australian (Wilson et al 1995) and the US adverse events studies (Brennan et al 1991, Thomas et al 2000) will be further discussed as well as the US (Localio et al 1991, Studdert et al 2000), New Zealand (Bismark et al 2006) and Swedish studies (Pukk-Harenstam et al 2009) that analyse proportions of negligent care that have resulted or not resulted in a claim of negligence against doctors in the US, or compensation payments in New Zealand and Sweden.

Table 1: Data on Adverse Events in Health Care from Several Countries (World Health Organization Executive Board 109th session, provisional agenda item 3.4, 5 December 2001 EB 109/9 in Walton 2004).

Study	Study focus (date of admissions)	Number of hospital admissions	Number of adverse events	Adverse event rate (%)
1	United States (Harvard Medical Practice Study) (Brennan et al 1991)	30,195	1,133	3.8
2	United States (Utah-Colorado study) (UTCOS) (Thomas et al 2000)	14,565	475	3.2
3	United States (Utah-Colorado study) (UTCOS) ^a	14,565	787	5.4
4	Australia (Quality in Australian Health Care Study) (QAHCS) (Wilson et al 1995)	14,179	2,353	16.6
5	Australia (Quality in Australian Health Care Study) (QAHCS) ^b	14,179	1,499	10.6
6	United Kingdom (Vincent C et al 2001)	1,014	119	11.7
7	Denmark (Schjøler T, et al 2001)	1,097	176	9.0

^a Utah -Colorado study revised, used the same methodology as the Quality in Australian Health Care Study (harmonising the four methodological discrepancies between the two studies).

^b Quality in Australian Health Care Study revised, used the same methodology as Utah-Colorado study (harmonising the four methodological discrepancies between the two studies).

Studies 3 & 5 present the most directly comparable data for the Utah-Colorado study and the Quality in Australian Health Care Study

Wilson and colleagues' (1995) Quality in Australian Health Care Study retrospectively audited medical records of 14,179 admissions to 28 hospitals in the states of New South Wales and South Australia in 1992. They aimed to estimate the adverse event rate defined as patient injury resulting in disability or longer stay caused by health care management. Adverse events resulting in disability or longer stay were encountered in 17 percent of admissions. Fifty-one percent of the adverse events were considered preventable. Resolution of the disability within 12 months occurred in 77 percent, permanent disability occurred in 14 percent, and death was the outcome in five percent of the adverse events (Wilson et al 1995). This study used a broader definition of adverse events than other adverse events studies, and this may partly explain their higher rate of adverse events (Vincent 1999). Wilson et al also hypothesised that record keeping may have been different, also adding to their higher rate of adverse events

(Wilson et al 1995).

The earlier landmark Harvard Medical Practice Study (Brennan et al 1991) aimed to estimate the incidence of adverse events and negligence in hospitalised patients. They defined an adverse event as an injury that was caused by medical management that prolonged the hospitalisation and or produced a disability at the time of discharge, or death. Negligence was defined as care that fell below the standard expected of doctors in their community. A retrospective medical record audit of 31,121 randomly selected hospital records was undertaken from hospitals in New York State in 1984. Adverse events occurred in 3.7 percent of hospitalizations. Negligence was the cause of 27.6 percent of adverse events. Seventy- one percent of these adverse events gave rise to disability lasting less than 6 months, 2.6 percent caused permanent disability and 13.6 percent led to death. The percentage of adverse events attributable to negligence increased in the categories of more severe injuries ($P < 0.0001$) (Brennan et al 1991).

A further arm of the Harvard study by Localio and colleagues (1991) matched the medical record sample of the above study with state-wide data on medical malpractice claims. Patients who filed claims were identified and compared with the review of their medical records regarding the injuries to patient caused by adverse events. There were 280 patients who had adverse events caused by medical negligence. Only eight (three percent) of these filed a claim for medical malpractice. Therefore 97 percent of all adverse events due to negligence in this study did not result in malpractice claims. The authors concluded that the civil-justice system only infrequently compensates patients injured by medical negligence and rarely identifies and holds providers accountable for substandard care (Localio et al 1991).

There was poor correlation between the actual occurrence of negligent adverse events and negligence claims. A subsequent study by Brennan and colleagues (1996) explored this further by following 51 malpractice suits for 10 years to assess the ability of malpractice

litigation to make accurate determinations compared with their previous assessment of the case. Forty-six of the 51 malpractice cases after 10 years had been closed. Of these, 24 were originally identified as involving no adverse event yet 10 of these were settled for the plaintiff. Likewise six of 13 cases classified as involving adverse events but no negligence were settled for the plaintiff, yet only five of nine cases in which adverse events were due to negligence in their assessment were settled for the plaintiff. Seven of eight claims involving permanent disability were settled for the plaintiff. In a multivariate analysis, disability was the only significant predictor of payment ($P = 0.03$). There was no association between the occurrence of an adverse event due to negligence ($P = 0.32$) or an adverse event of any type and payment ($P = 0.79$). Thus the severity of the patient's disability, not the occurrence of an adverse event or an adverse event due to negligence, was predictive of payment to the plaintiff (Brennan et al 1996).

The Utah and Colorado study of 1992 used the Harvard Medical Practice study method to measure the incidence of adverse events and negligent adverse events (Thomas et al 2000). Fifteen thousand hospital discharges were reviewed. There was a total of 475 adverse events found which when weighted to the population of each state gave an estimate of adverse events occurring in 2.9 percent of hospitalizations (Thomas et al 2000).

In Utah, 33 percent of these adverse events, and in Colorado 27 percent, were due to negligence. Death occurred in 7 percent of adverse events and 9 percent of negligent adverse events. Forty-six percent of adverse events were attributed to surgeons and 22 percent of these were negligent, and 23 percent of adverse events were attributed to internists with 45 percent of these found to be negligent. Adverse drug events comprised 19 percent of all adverse events. The incidence and types of adverse events in Utah and Colorado in 1992 were similar to those in New York State in 1984 (Thomas et al 2000).

A revisiting of 14,700 of the Colorado and Utah files compared negligent care found in

the file audit with malpractice claims in the states of Utah and Colorado from 1992 to 1996 (Studdert et al 2004). There were 18 claimants who matched the file review study sample. Of these claims, 14 were made in the absence of discernable negligence and 10 were made in the absence of any adverse event. Ninety-seven percent of patients who suffered negligent injury did not sue. Non-claimants were more likely to be Medicare recipients, low income, older than 75 and to have suffered minor disability as a result of their injury. Thus again there was poor correlation between actual medical negligence and malpractice claims in Utah and Colorado, as in the New York study (Harvard Medical Practice Study). Paradoxically, in these studies, when a doctor was sued, there was often non-negligent care according to the file audit data (Studdert 2000). Factors other than substandard care play a role in determining who uses the malpractice system and who receives compensation from it (Studdert 2000).

The question of whether the law of medical negligence meets its key objectives of compensation and deterrence was the focus of a subsequent study by Studdert and colleagues (2006). They reviewed a random sample of 1,452 closed malpractice claims. They found no verifiable medical injuries for 3 percent of the claims with 84 percent of these (31 of 37) resulting in no compensation paid. Thirty-seven percent of the claims did not involve errors, and 72 percent of them (350 of 515), did not result in compensation. However, they found that payment of claims not involving errors occurred less frequently than did the converse— non-payment of claims associated with errors. Overall, claims not involving errors accounted for 13 to 16 percent of the system's total monetary costs. For every dollar spent on compensation, over half (54 cents) went on administrative expenses (including lawyers, experts and courts). They concluded that the overhead costs of malpractice litigation are exorbitant (Studdert et al 2006).

These studies highlight a mismatch between claimants' assertions of negligence and actual negligent care. The no fault New Zealand system was examined by Bismark and

colleagues (2006). They linked the national claims database (Accident Compensation Corporation) with medical records reviewed for adverse events in public hospitals in 1998 in the New Zealand Quality of Healthcare Study to estimate the percentage of eligible patients who claimed no-fault compensation. Only three percent (6/210) of eligible patients claimed. It appears that under-claiming occurs in both no-fault and negligence systems (Bismark 2006).

The Swedish system was reviewed by Pukk-Härenstam and colleagues in 2009 through national malpractice claims and hospital discharge data. Swedish malpractice claims are handled administratively and claimants are compensated if an independent physician review confirms that their injury resulted from medical error. A total of 23,364 inpatient malpractice claims filed between 1997 to 2004 from hospitals reporting 11,514,798 discharges were examined. The overall claims rate was 0.20 percent and 50 percent of these filed claims were eligible for compensation (Pukk-Härenstam et al 2009).

6. Doctors over-estimate the likelihood of being sued

Doctors fear the litigious environment as shown in Schnattner and colleagues' 1996 study in which the threat of litigation was perceived as the most severe work related stressor in a survey of 464 Australian GPs with 296 respondents (64 percent response rate) (Schattner et al 1996). There are a number of studies that find doctors overestimate the risk of being sued. Two of these studies will now be discussed.

In New York, Lawthers and colleagues (1989) surveyed 1,823 doctors about their perceptions of being sued with 739 respondents (41 percent response rate). Actual rates of being sued were based on 1986 claims data from the New York State Department of Health and 1986 data on number of doctors. Respondents compared with non respondents tended to be older, male, and were more likely to have had law suits against them. The respondents perceived that 60 percent of negligent adverse events lead to suits, which is 20-30 times higher than the actual risk of being sued for negligent adverse events found in the Harvard Medical

Practice Study (Localio et al 1991). The respondents estimated the risk of being sued in one year as 19.5 out of 100 doctors which was approximately 3 times the actual rate for the state of New York (Lawthers et al 1992).

More recently, Elmore and colleagues (2005) studied mammogram reporting by radiologists in three US states to assess the relationship between perceptions of medical malpractice and actual experience for screening mammography. Surveys were sent to 181 radiologists with 139 respondents (77 percent response rate). Responses were linked to 557,143 screening mammograms between 1996 and 2001. Sixty-four out of 122 (52 percent) reported they had experienced a malpractice claim, and 18 out of 122 (15 percent) reported mammography-related claims. There were no significant differences between the respondents and non-respondents for sex, number of years since graduation and no significant differences in interpreting screening mammograms such as recall rate of patients. Forty-eight percent of respondents estimated a probability of 30 percent or higher of being sued in the next five years if they were interpreting mammograms full time. However, in reality only nine percent of radiologists had a claim filed against them in the five years between 1997 and 2001. Respondents who had a claim filed against them, estimated the probability of being sued in the next five years as 50 percent or higher (Elmore 2005).

These two studies indicate that perception of risk is out of step with reality. One explanation by Carrier and colleagues (2010) is the human tendency to overestimate the risk of rare events and to be fearful of unfamiliar risks that are potentially catastrophic, or difficult to control. Doctors perceive lawsuits to be such events. In addition, doctors tend to view lawsuits as random events, not necessarily related to the quality of care provided (Carrier et al 2010). The correlation studies between negligent care and negligence claims (Brennan et al 1996, Studdert et al 2000, Localio et al 1991, Studdert et al 2006) would support that view.

7. Why do people complain or claim for compensation

This section briefly looks at the reasons for complaints and claims from various points of view. Although this is not directly related to the thesis aims, it is of interest to the topic more broadly.

From the patient/family's perspective:

Daniel and colleagues surveyed 500 complainants who had complained to the NSW Health Care Complaints Commission with complaints finalized in 1996-7. Response rate was 63 percent with 290 complaints about doctors. The complaints from the complainants perspective were about clinical care (64 percent), rudeness or poor communication (22 percent), and unethical or improper behaviour (14 percent) (Daniel et al 1999).

Vincent and colleagues (1994) surveyed patients and relatives who initiated legal action for medical negligence in the UK (n=227) and found the reasons were not solely monetary. The decision to take legal action was determined not only by the original injury, but also by insensitive handling and poor communication after the original incident. Fifty percent of the cohort said the reasons for making a claim included seeking an admission of fault, to prevent a recurrence or to have an investigation. Forty to 49 percent of the cohort nominated wanting an apology or to make health providers understand what happened. Thirty to 39 percent of the cohort wanted to be told what happened, to show that the other side cared, to hear the other side, to achieve change, to improve quality or to receive compensation (Vincent et al 1994).

Mulcahy's study of 117 UK claimants found similar reasons. The first priority was compensation for more than a third. Other reasons were a wish to prevent the same thing from happening (52 percent), the provision of an apology (44 percent), for the other side to understand their concerns (40 percent), a desire for someone to show that they cared about what happened (35 percent), to hear the other side (28 percent), to talk through the issues (27

percent), to enable arrangements for subsequent treatment (27 percent), and the opportunity to meet the other side (25 percent) (Mulcahy 2003).

As discussed above, Brennan and colleagues (1996) found the most significant predictor of a successful payment to the plaintiff was not negligent care, but the severity of the patient's disability. Thus degree of disability, regardless of negligence, is another reason for pursuing a claim for compensation.

From the doctor's perspective:

Cunningham and colleagues' New Zealand study of 201 doctors who had received a complaint, asked the doctor for their view of the reason for the complaint, giving them a list from which they could choose any number of reasons. The major reasons were errors in practice of medicine (33 percent), errors in communication (14 percent), actions of a third party (nine percent), fraudulent activity (eight percent), a personality clash (eight percent) and "own behaviour" eg inappropriate language, sexually inappropriate behaviour (seven percent) (Cunningham et al 2003).

From the medical expert's perspective:

An analysis of over 500 claims for compensation submitted from solicitors between 1984 and 1994 in the UK for medical expert opinion on potential medico-legal claims in obstetrics and gynaecology found 46 percent of the claims were "misguided allegations", 19 percent were incompetent care, 12 percent errors of judgment, nine percent lack of expertise, seven percent failure of communication, six percent poor supervision and one percent inadequate staffing (B-Lynch et al 1996).

From the insurers' perspective:

The Physician Insurers Association of America (PIAA) has been collecting standardized data from the majority of US medical insurance companies since 1985. Conklin

and colleagues (2008) examined the PIAA data with regard to gastroenterologists. From 1985-2005, 2384 (1 percent of total claims) were for gastroenterologists. The top four identified reasons for gastroenterologists having a claim for compensation against them were “error in diagnosis” in 28 percent, “improper performance” of a procedure in 25 percent, no designated “medical misadventure” in 19 percent, and “failure to supervise or monitor case” in nine percent. Of the 1764 gastroenterologists claims with identified medical misadventures that were closed, a resolution was reported among 1069 of them and these included settlement in 72 percent, involuntary dismissal in 15 percent, judgment for the defendant in nine percent and judgment for the plaintiff in two percent. The majority of claims within gastroenterology were settled out of court (Conklin et al 2008).

Conklin and colleagues make the point that malpractice litigation is not as widespread or ominous as doctors fear. Small numbers of cases within gastroenterology were actually paid to the plaintiff. However, this does not reflect the psychological impact on the doctor, or the impact on the practice of the doctor (Conklin et al 2008). These two items are discussed in the literature review, and are investigated with regard to Australian doctors in the three studies that make up chapters 4 – 10. The impact on the patient is acknowledged but is not the focus of this thesis.

Communication inadequacies:

The literature repeatedly finds poor communication a reason for claims and complaints. If this is the case, then the best strategy is prevention – enhance the communication skills of practitioners (Anderson et al 2001, Bark et al 1997, Clinton and Obama 2006, Hickson et al 2002, Ramirez et al 1996).

Medicine deals with individual people with individual responses to illness, disease and treatment. In addition, doctors can make mistakes, misjudge a decision, or practice systems may not adequately support them. Some incidents may injure a patient, and of these, some

may result in a claim or complaint. But not all claims or complaints arise from an injury: they may arise from dissatisfaction with treatment when expectations have not been met. Advice from the Australian Medical Council includes that doctors can minimise the potential risk to their patients and to themselves by providing competent care, maintaining effective communication with their patients, carers and with health professionals and keeping accurate records (Australian Medical Council, 2009).

8. The frequency of medico-legal matters in Australia

8.1 Complaints and disciplinary processes

There are multiple similar mechanisms for registering a complaint about a doctor in Australian states and territories. New South Wales (NSW) is the most populous state, and where the majority of respondents to my studies practice. NSW mechanisms include patients, carers and others making a complaint direct to the doctor, the health service (eg hospital, group practice), the Medical Board of Australia (commenced in July 2010), the Medical Council of New South Wales (previously the New South Wales Medical Board), or to the NSW Health Care Complaints Commission (HCCC). The HCCC was the site of my pilot study (Chapter 4), and is an established path for complaints.

Complaints to the NSW Health Care Complaints Commission (HCCC)

The Health Care Complaints Commission (HCCC) and the Medical Council of New South Wales (the Medical Board of New South Wales prior to July 2010) consult on complaints received by either body. The 2008-9 Annual report of the HCCC to the Medical Board of NSW reports that 1,270 complaints were received about doctors out of 30,694 registered medical practitioners in NSW (four percent). Of these complaints, 47 percent were not considered serious and were discontinued, 21 percent were referred for direct resolution between the parties and 19 percent were referred to the NSW Medical Board for further action for treatment, communication or professional conduct. Eleven percent were referred for

investigation because they raised a significant issue of public health or safety, or appropriate care or treatment, or that they would be likely to justify disciplinary proceedings, or were considered to be gross negligence (Health Care Complaints Commission Annual report to Medical Board, 2009). Fifty-six percent of these “further investigated complaints” were referred to the NSW Medical Board for disciplinary action (Medical Council of NSW, NSW Medical Board Annual Report 2009).

Disciplinary matters with the New South Wales Medical Board in the year 2008-9

The following Medical Board processes are relevant to this thesis: urgent suspensions in the public interest, Medical Tribunal hearings, and review by a Professional Standards Committee. These are reported in the 2008-09 Annual Report of the New South Wales Medical Board which is around the time of my large study. In NSW the complaint mechanisms for doctors remains substantially the same since the commencement of the Medical Board of Australia in July 2010.

Urgent suspensions in the public interest

The New South Wales Medical Board had the power to either suspend a practitioner for up to eight weeks, or to impose conditions upon their registration in the public interest under section 66 of the Medical Practice Amendment Act 2008 (NSW).

The Board conducted 40 section 66 proceedings and 15 reviews during the year 2008-2009. Proceedings related to issues of prescribing, drug use, boundary crossing, criminal charges, impairment, capacity to practice, treatment, and breaching of registration conditions. Eleven doctors were suspended, 21 had conditions imposed on their registration and six matters were resolved or no further action required (Medical Council of NSW, NSW Medical Board Annual Report 2009).

Medical Tribunal hearings

Twelve complaints were determined by the Medical Tribunal in 2008/09 for complaints relating to prescribing, breach of conditions, sexual misconduct, boundary crossing, criminal conviction and impairment. Eight doctors were de-registered, two practitioners were reprimanded and had conditions imposed on their registration, one practitioner had conditions imposed and one practitioner was reprimanded (Medical Council of NSW, NSW Medical Board Annual Report 2009).

Professional Standards Committee hearings

Nineteen doctors were referred to a Professional Standards Committee during 2008/09 and 14 hearings were held concerning patient management, prescribing, financial inducement, diagnosis and treatment, clinical error, competence, record keeping, impairment, medical certificates and boundary crossing. Twelve doctors had unsatisfactory professional conduct findings, all of whom were either reprimanded or had registration conditions imposed. Two matters were referred to the Medical Tribunal and in three matters the complaint was dismissed or no orders made (Medical Council of NSW, NSW Medical Board Annual Report 2009).

Considering there were over 30,000 registered doctors in the state of New South Wales during the 2008-09 reporting period, these are low numbers of disciplinary matters, but significant due to their level of seriousness for the public and the doctor. Medical Board inquiries and disciplinary hearings were included in the definition of medico-legal matters in my GP study and my large study of 2,999 Australian doctors.

Hospital complaints in Australia

All states and territories in Australia have hospital complaints mechanisms. Taylor and colleagues (2004) retrospectively analysed all the complaints to 25 metropolitan and 42 rural hospitals (67 hospitals in total) in the state of Victoria between 1997 and 2001. Over

13 million patients presented to the hospitals during this period, and 26,785 complaints were lodged resulting in an overall complaint rate of 1.42 complaints/1000 patients. Twenty-nine percent of complaints related to communication (poor attention, discourtesy, rudeness), 29 percent related to access to healthcare (inadequate service, treatment delays) and 23 percent related to inadequate treatment. Eighty-five percent of complaints were resolved. Apologies to the complainants resolved 28 percent and explanations a further 28 percent (Taylor et al 2004).

8.2 Claims for compensation

These figures are not easily available as they are regarded as 'commercial in confidence' by the medical insurance companies. United Medical Protection, which was previously the largest medical insurer in Australia prior to its merger with Avant reported that two percent of general practitioners faced a medical negligence claim each year (Bird 2000).

Avant, the current largest insurer in Australia, insures over 30,000 doctors from all Australian states and territories (Avant 2008-09 Annual report). Their term claim includes civil claims for damages (ie claim for compensation), and non-civil claims such as professional conduct matters, coronial inquests, criminal proceedings, employment disputes, Medicare investigations and other non-compensable matters. In June 2009 Avant had 4,607 claims under management, and 1,790 claims were finalised during that year. Thus five percent of doctor members had a claim closed that year. Thirty percent of these were claims for compensation in 2007-08 and 27 percent in 2008-09.

In my large study of 2,999 doctors (Chapters 8, 9 and 10), claims for compensation and complaints were the most frequent medico-legal matters, followed by inquests.

8.3 Inquests

Inquests are conducted by coroners and investigate the manner and cause of death. Under Section 12B of the NSW Coroner's Act 1980, deaths are reported to the coroner for

deaths in hospitals, deaths within 24 hours of administration of an anaesthetic or as a result of an anaesthetic, death of a patient on leave under the Mental Health Act and any sudden or unnatural death. The Coroner decides if an inquest will occur (New South Wales Government lawlink website, 2010).

In 1997, the National Coroners Information System was established to collect information from all state and territory coroners. The NSW Coroner's office does not keep statistics on the number of inquests that specifically relate to medical care⁹ and nor does the National Coroners Information System¹⁰. I was therefore unable to ascertain the frequency for inquests involving medical care in Australia or NSW.

Thus the frequency of medico-legal matters for Australian doctors is not easy to determine. However, in Chapter 5, I report the frequency of medico-legal matters from my GP study and in Chapter 8 the frequency of each type of matter is reported by specialty from the self report data of the large study of 2,999 doctors.

9. Lack of Australian empirical evidence

In 2002 Ipp et al reviewed the Australian Law of Negligence for the Australian Government. They noted that their findings were guided by submissions of anecdotes and personal experience due to a dearth of empirical evidence.

Similarly, Kessler et al (2006) reviewed empirical studies of the effects of tort law on medical care in the USA, UK and Australia. They found systematic evidence of defensive medicine in the USA and UK, but there was a lack of actual evidence in Australia. My studies now provide the Australian empirical evidence regarding doctors' experience of and response to medico-legal concerns that can now be used in such reviews.

⁹ Personal communication with the NSW Coroners Court 16 Sep 2010.

¹⁰ Personal communication with the National Coroners Information System, 10 Nov 2010.

CHAPTER 2: Psychiatric morbidity and alcohol use in doctors

Doctors are notoriously neglectful of their health despite their comparatively good income, security of employment, high status and satisfying work (Holmes, 1997). The physical health of doctors is far better than many occupational groups but their mental health is not; they are more prone to anxiety and depression, suicide and alcohol and substance misuse than to comparable occupational groups (Johnson 1991, Holmes 1997, Wall et al 1997, Graham 1997, Tyssen et al 2002, Bruce et al 2003, Firth-Cozens 2007, Schernhammer et al 2004). The aphorism “Physician heal thyself” (King James Version, Luke 4:23, 1975) alludes to the ability of doctors to heal others while sometimes not being able to acknowledge their own ill health or to seek treatment. Some doctors respond to their own ill health by denial, alcohol, drugs or overwork (Holmes, 1997).

This chapter has four sections. In the first section, the epidemiology of psychiatric morbidity, alcohol misuse and personality traits in community samples are discussed. The second section addresses psychiatric morbidity in doctors. The third section discusses hazardous alcohol use in doctors. The final section addresses how psychiatric morbidity in doctors may impact on patient care.

1. Psychiatric morbidity and alcohol misuse in community samples

The 2007 Australian National Survey of Mental Health and Wellbeing surveyed 8,800 Australians aged 16-85 years and found 22 percent of females and 18 percent of males experienced mental disorders in the 12-month period. Females experienced higher rates of anxiety than males (18 percent compared with 11 percent) and affective disorders (7 percent compared with 5 percent). Males had over twice the rate of substance use disorders than females (7 percent compared with 3 percent) (Australian Bureau of Statistics 2007).

Kessler and colleagues’ (1993) national co-morbidity study in the USA likewise found females had higher rates of affective and anxiety disorders compared with males and that

males had higher rates of substance use disorders than females. Specifically, females had a 1.7 times higher rate of depression than males. Epidemiological studies consistently find that females have higher rates of depression than males (Kessler et al 1993).

However, depressogenic stressors appear to be different for males and females as found by Kendler and colleagues (2001) in their study of same and mixed sex twins. Females reported more interpersonal stressful life events whereas males reported more legal and work-related stressful life events (Kendler et al 2001).

Tennant's review of depression in community samples found that stressors explained as much, if not more of the variance in depression as genetic factors, with personality having an additional moderating effect (Tennant 2002).

Personality profiles of community samples consistently find gender differences. Typically females have higher neuroticism (or sensitivity) scores and males have higher psychoticism (or tough mindedness) scores. Lynn and colleagues (1997) compared 37 nations measuring extraversion, psychoticism and neuroticism using the Eysenck Personality Questionnaire (Eysenck et al 1991). Females had higher neuroticism mean scores than males in all countries, and males had higher psychoticism mean scores in 34 countries and higher extraversion mean scores in 30 countries (Lynn et al 1997).

Like community samples, factors associated with psychiatric morbidity in doctors are stressors (at work and outside of work), personality factors, and family history (Willcock et al 2004; Johnson 1991; Tyssen et al 2002; Newbury-Birch et al 2001).

Multiple measures have been used to measure psychiatric morbidity, personality and alcohol use in doctors. Goldberg's General Health Questionnaire (GHQ) is commonly used to research psychiatric morbidity in doctors. It is a sensitive and well validated screening tool to detect common non-psychotic psychiatric morbidity by considering symptoms over the previous 2 weeks. It has four subscales: somatic symptoms; anxiety and insomnia; social

dysfunction; and depression. Case identification for risk of psychiatric morbidity is based on a combined score of more than 4, using binary scoring for each question (with the two least symptomatic answers scoring 0 and the two most symptomatic answers scoring 1) (Goldberg 1998).

The Eysenck Personality Questionnaire (EPQ) has been used to study the personalities of doctors. It is a valid and reliable self-report questionnaire measuring three major dimensions of personality: extraversion, with a low score representing introversion; neuroticism measuring emotional instability or sensitivity; and “psychoticism” measuring tough mindedness and, at the extreme, lack of empathy (Eysenck et al 1991). Despite the name, psychoticism is not a measure of psychotic symptoms. These two measures (GHQ and EPQ) were used in the three studies of this thesis.

The World Health Organisation’s Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al 1993) has been used to assess potentially hazardous alcohol use in doctors. The AUDIT was developed from a WHO collaborative project across 6 countries to develop a screening instrument for hazardous and harmful alcohol consumption. It is a reliable and valid 10 item questionnaire of alcohol consumption, drinking behaviour and alcohol related problems. Responses to each question are scored from zero to four with a total of eight or more meeting case identification for potentially hazardous drinking (Saunders et al 1993). The AUDIT was used in the second and third studies of this thesis.

Particular studies of psychiatric morbidity and alcohol use in doctors will now be discussed as a background to chapter 3 where the literature of the emotional response of doctors to a medico-legal matter is reviewed.

2. Psychiatric morbidity in doctors

2.1 Gender

The findings for gender differences in psychiatric morbidity in doctors are not consistent. In addition, stressors are experienced differently by male and female doctors as is also the case in community samples (Kendler et al 2001).

Firth-Cozens' early work on doctors' health in 1986 surveyed 92 female junior doctors. High levels of depression were reported. Stressors included overwork, conflicts between career and personal life, relationships with consultants, making decisions, sexual harassment at work, lack of female role models, prejudice from patients, and discrimination by senior doctors (Firth-Cozens et al 1990). This may be different now, with shorter hours for junior doctors in Europe under the European Working Time Directive (Firth-Cozens 2007), and with the increase in proportion of female doctors over the last thirty years the lack of female role models, discrimination and sexual harassment may have reduced.

Three prospective studies compared psychiatric morbidity in males and females from medical students to doctors: Firth-Cozen's prospective study from England (1998), Tyssen and colleagues Norwegian study (2001), and Willcock and colleagues Australian study (2004). They all found no significant gender difference in rates of psychiatric morbidity.

Firth-Cozen's (1998) longitudinal prospective study over 10 years of 302 doctors in England with 224 respondents (72 percent response rate), 131 of whom were GPs. These male and female GPs had different predictors for depression from time 1 as medical students, to time 2 as GPs 10 years later. For men at time 1, depression and self criticism were significant predictors of depression at time 2. For time 2, hours of sleep was a significant predictor, but not work hours or alcohol use. For women, the time 1 measure of sibling envy was a significant predictor of depression at time 2, but depression was not, nor self criticism. At time 2, alcohol use was a significant predictor for women, but not hours of work or sleep

(Firth-Cozens 1998).

There are several cross sectional studies that examine gender differences using case identification for psychiatric morbidity using the GHQ. Ramirez and colleagues (1996) survey of 1133 UK hospital consultants with 882 respondents (78 percent response rate) found that females had significantly higher rates of case identification than males (females 37 percent and males 23 percent). Wall and colleagues (1997) study of 25,352 British National Health system workers with 11,637 respondents (estimated response rate for the estimated received questionnaires was 61-65 percent) similarly found that female doctors had significantly higher case identification rates for psychiatric morbidity than male doctors (females 36 percent and males 24 percent) (Wall 1997). Likewise the study of 109 pre-registration house officers in England again found higher rates of case identification for psychiatric morbidity in females than males using the GHQ (38 percent females and 24 percent males) (Newbury-Birch et al 2001).

The above UK figures from several studies are remarkably similar. In Australia, Bruce and colleagues' (2003) small survey of 94 senior medical staff in a major Australian hospital with 54 respondents (57% response rate) reported that females worked fewer professional hours (33.4 compared to 54.7 hours for males), but they did more hours in domestic work than males. There was little difference in case identification for psychiatric morbidity using GHQ-28 with 44 percent for females and 39 percent for males (Bruce et al 2003).

Rey and colleagues (2004) surveyed a much larger sample of all 2059 Australian psychiatrists with 1039 respondents (50 percent response rate) to examine levels of work satisfaction and stress. GHQ was not used in this survey. Dissatisfied psychiatrists were 11 times more likely to report feeling stressed than satisfied doctors, and females were more likely than males to be dissatisfied (17 percent v 10 percent) (Rey et al 2004).

Suicide rates in female doctors have consistently been found to be higher than female

non-doctors, with findings less clear for males. Schernhammer and colleagues' (2004) meta-analysis show modest increase for male doctors compared to the general population (1.41 OR 95%CI 1.21-1.65) and higher increase for women compared to the general population (2.27 OR 95% CI 1.90-2.73). However, they note that it is possible the female data is elevated by publication bias (Schernhammer et al 2004).

Are there confounding variables beyond these conflicting gender results, such as hours of work, age, marital status, specialty, taking a holiday or having a current medico-legal matter that impact on psychiatric morbidity? This is investigated by a multivariate logistic regression in my large study of 2,999 Australian doctors (Chapter 9).

2.2 Age and marital status

Older doctors and those co-habiting appear to be at less risk of psychiatric morbidity in the medical workforce. Several studies from different countries report variations on this theme. Younger doctors, particularly women, often have the double load of busy family and professional life. Guthrie highlights that married male doctors are often supported in the home by their wives, but married female doctors often shoulder the stressors at home and at work (Guthrie 1997). However, partnering for both sexes seems to confer advantages.

Being single was a predictor of mental health problems in the Norwegian junior doctor study (Tyssen et al 2001). Divorce in a Japanese study of 587 female doctors with 367 respondents (63 percent response rate) was associated with higher levels of psychiatric morbidity measured by the GHQ, as was younger age (Hayasaka et al 2007).

Ramirez and colleagues (1996) study of 882 UK specialists found that being 55 years or younger and being single were independent risk factors for burnout. Similarly, a study of 853 vascular and colorectal surgeons in the UK with 501 respondents (59 percent response rate), with 92 percent males, found that partnered surgeons had lower psychiatric morbidity, and younger surgeons were more likely to have higher levels of depersonalization (Sharma et

al 2008).

In Australia, Willcock and colleagues' cohort of interns found that single interns were significantly more emotionally exhausted than partnered interns (Willcock et al 2004).

Peisah and colleagues' Australian study found that doctors over 50 years of age reported lower levels of psychological distress compared with those younger than 50 years using the Kessler-10 psychological distress scale (Peisah et al 2009).

Younger doctors are usually in the early and stressful stages of their careers and, particularly for women, this is often the most demanding stage of family life. Again, multiple factors need to be considered for psychiatric morbidity in doctors.

2.3 Personality traits

Gabbard in 1985 described a common compulsive triad in the personality of many doctors, with doubt, guilt feelings, and an exaggerated sense of responsibility. This can lead to difficulty relaxing, reluctance to take vacations from work, problems allocating time to family, difficulty setting limits and guilt feelings that interfere with the healthy pursuit of pleasures (Gabbard 1985).

To assess personality in my three studies, neuroticism, extraversion and psychoticism were measured. Studies that investigate those personality traits in doctors with their satisfaction at work and psychiatric morbidity are addressed below.

McManus and colleagues' (2004) 12 year longitudinal study of 1,668 UK medical graduates from five medical schools found higher stress levels were associated with neuroticism, introversion, and low conscientiousness. Extraversion, with being more open to experience, and agreeableness were found to confer advantages to work. Satisfaction with medicine related directly to the personality traits of greater extraversion and lower neuroticism (McManus et al 2004). Low satisfaction with work has been associated with distress (Rey 2004, Coomber et al 2002) and depression (Coomber et al 2002).

Neuroticism and introversion are consistently found to be risk factors for psychiatric morbidity. In Newbury-Birch's study (2001) of pre-registration house officers in the UK, stress, anxiety and depression for both males and females were significantly correlated with neuroticism scores on the Eysenck Personality Questionnaire. Mean neuroticism scores for women were nearly twice that of men. Stress, anxiety and depression scores were also significantly correlated with introversion in women but not men (Newbury-Birch et al 2001a).

The personality trait of neuroticism was a predictor of mental health problems in junior doctors from measures taken four years prior as medical students in Norway (Tyssen et al 2001). Similarly, the personality trait of neuroticism was predictive of high disability using Sheehan's disability scale (Leon et al 1997), in the Australian longitudinal study¹¹.

Thus the personality traits of neuroticism and introversion are associated with higher risk of psychiatric morbidity. This was also the case in my study of 2,999 doctors (Chapter 9).

2.4 Work related stressors

There are multiple work-related stressors in medical practice. In addition to those mentioned above, recurrent and overlapping themes are: overwork (Ramirez et al 1996, Firth-cozens et al 1990, Firth-cozens et al 1998, Bruce et al 2003), overload between work and home (Ramirez et al 1996, Firth-Cozens et al 1990, Firth-Cozens et al 1998, Coomber et al 2002, Bruce et al 2003) feeling poorly resourced eg lack of beds (Ramirez et al 1996, Coomber et al 2002, Rey 2004), long hours of work (Coomber et al 2002; Richardson et al 2003), night duty (Hayasaka et al 2007), time pressure to see patients (Schattner et al 1998), poor team work (Kivimaki 2001), poor relationships with seniors (Firth-Cozens 1998), job responsibility (Firth-Cozens 1998), and mistakes and litigation worries (Firth-Cozens 1998; Richardson et al 1993, Rey et al 2004, Schattner et al 1998). Several of these studies will be discussed further to highlight particular issues for example, contrary findings in Tyssen and

¹¹ Personal communication (Nov 2010) with Prof Simon Willcock of Willcock et al 2004.

colleagues' Norwegian study (2001), witnessing suffering compared to other work stressors (Ramirez 1996), the correlation between dissatisfaction with career, and distress and depression (Coomber et al 2002), and stressors in two Australian studies (Kalucy 2002, and Schattner et al 1998).

Interestingly, Tyssen and colleagues' (2001) prospective longitudinal study of 360 Norwegian medical students to fourth year junior doctors, did not find that lack of sleep, hours of work or gender were linked to an increase in psychiatric morbidity in junior doctors. However, they did find that 17 percent of the sample of junior doctors reported mental health problems, but only less than half (42 percent) of the junior doctors who reported mental health problems sought professional help (Tyssen et al 2001).

The suffering of patients which doctors witness and try to alleviate, contributed less to the stress of 882 UK hospital consultants than other work related stressors such as overwork, overload between work and home, or lack of resources (Ramirez 1996). Of particular note was that doctors with high levels of psychiatric morbidity were more likely to respond to stress by increasing their alcohol, working longer hours and eating less healthily and were less likely to pursue hobbies/exercise (Ramirez 1996). This is just as Holmes described the response of some doctors to ill health earlier in this chapter (Holmes 1997).

Coomber and colleague's (2002) UK survey of 896 Intensive Care Unit doctors with 627 responses (70 percent response rate) found that dissatisfaction with career correlated highly with distress and depression ($P < 0.01$). This finding is similar to Rey and colleagues' (2004) Australian psychiatrists study. The Coomber study also reported that twenty doctors (3 percent) had suicidal thoughts. Psychiatric morbidity measured by the GHQ-12 found 29 percent of respondents reached case identification, compared with 18 percent of employed British adults (Coomber et al 2002). The authors note that the mean age of respondents was 42 years, leaving around 20 years of professional life to continue. Care to reduce stressors on

doctors is appropriate for their sake and their patients (Coomber et al 2002).

Kalucy (2002) reviewed doctors with drug misuse and or mental health problems referred to the Health Committee of the South Australian Medical Board over an 18 year period (number of cases not given). Common characteristics of these doctors were long hours of work, non-attendance at continuing medical education sessions and few opportunities to talk about medicine with colleagues or friends (Kalucy 2002).

A survey of 464 Australian GPs with 296 respondents (64 percent response rate) investigated work related stress in metropolitan GPs and found that GPs working 6 or more sessions per week were more likely to be moderately or severely stressed than those working fewer sessions. The threat of litigation was perceived as the most severe work related stressor (Schattner et al 1998). The threat of or actually being the subject of medico-legal matter is a work related stressor. The literature on the emotional impact of this is reviewed in chapter 3.

3. Alcohol use in doctors

Vaillant et al in 1972 reported 36 percent of doctors compared with 22 percent of matched non-doctor controls were high drug users (defined as heavy drinking, frequent use of sleeping pills, amphetamines or tranquillisers) (Vaillant et al 1972).

More specifically, Hughes and colleagues (1992) surveyed a random sample of 9,600 doctors, stratified by specialty and career stage, from the American Medical Association rate to estimate the prevalence of use of 13 substances among US doctors (59 percent response rate). Results were compared with the USA National Household Survey on Drug Abuse. Doctors were less likely to have used cigarettes and illicit substances, such as marijuana, cocaine, and heroin, in the past year than their age and gender counterparts, but they were more likely to have used alcohol, minor opiates and benzodiazepines (Hughes et al 1992). Similarly, Fowlie in 1999 considered the UK report by the Working group on the misuse of alcohol and other drugs by doctors (1998) and noted that doctors had a higher than predicted

mortality rate for cirrhosis of the liver, cancer of the liver, alcohol-related diseases, suicide and that the misuse of drugs and alcohol was often a major feature of concerns regarding conduct, performance, or health of a medical practitioner (Fowlie 1999).

Factors associated with hazardous alcohol use in doctors include having high psychiatric morbidity (Newbury-Birch 2001(b), Taylor 2007), being a surgeon (Rosta 2008, Rosta 2005) and like the rest of the community, being male (Rosta 2008, Rosta et al 2005, Taylor 2007) and having a family history of alcohol problems (Flaherty et al 1993).

Newbury-Birch's longitudinal study of medical students in year 2, year 5 and first postgraduate year reported the proportion of respondents drinking above recommended safe limits of alcohol (<21 units per week for males, and <14 units per week for females). Mean alcohol consumption increased over time with a significantly higher proportion of men than women drinking above respective safe limits. The main reason for drinking was recorded as pleasure in 92 percent at all three time points and anxiety /stress in 21 percent at time 1, 15 percent at time 2 and 28 percent at time 3. There was a significant association between higher alcohol consumption and higher stress scores. The authors proposed that alcohol and illicit drug education should be part of medical education curriculum, and intervention in the workplace for students and doctors with alcohol and/or drug problems (Newbury-Birch 2001). Similar recommendations were made earlier by Hughes et al (1992) and the UK report (Fowlie 1999).

Several studies have used the AUDIT to investigate the rates of potentially hazardous alcohol use in doctors. These are discussed considering gender, specialty, and psychiatric morbidity. The AUDIT was used in both my GP study, and large study.

A study of 3139 Finnish primary care doctors with 1909 respondents (60 percent response rate) reported 15% of the total cohort reached AUDIT case identification for hazardous alcohol use (a score of 8 or more) with seven percent for female and 27 percent for

male doctors (Aalto 2006).

A study of 1,120 Norwegian doctors described the alcohol use of female surgeons compared to female non-surgical doctors, and to male surgeons using the AUDIT. Unusually, they used a cut off of nine or more rather than eight or more, to indicate hazardous drinking. Female surgeons had a significantly higher rate of hazardous drinking compared with female non-surgeons (18 percent v eight percent). Being a surgeon (for males and for females), being male and being aged 45 years or more were significant predictors of hazardous drinking (Rosta et al 2005).

Rosta's later study of German hospital doctors used a cut down 3 item version of the AUDIT (score of 5 or more taken as hazardous alcohol drinking). Twenty percent were hazardous drinkers. Being male or in a surgical specialty were significantly correlated with hazardous drinking (Rosta 2008).

A study of 1794 hospital consultants in England in 2002 with 1308 respondents (73 percent response rate) reported 32 percent reached case identification for psychiatric morbidity using the GHQ. These doctors were twice as likely to also reach case identification for hazardous alcohol use by AUDIT scores. Male consultants were again more likely to reach case identification for hazardous alcohol use (Taylor et al 2007).

In summary the evidence shows a higher level of psychiatric morbidity in doctors than in community samples. At times of increased stress, some doctors increase their alcohol intake (Newbury-Birch 2001(b), Taylor et al 2007). Factors associated with hazardous alcohol use in my large sample of 2,999 Australian doctors are examined in Chapter 9. Mental health of doctors is of concern not only for themselves but for their patients (Tyssen et al 2002, Fowlie 1999). Doctors with high levels of psychiatric morbidity or alcohol problems may provide a lesser standard of care than doctors without these problems (Firth-Cozens et al 2003).

4. The relationship between psychiatric morbidity in the doctor and patient care

This is a difficult area to investigate as most studies use the doctor's subjective opinion of patient care. Three recent prospective studies from the US and two retrospective studies are discussed. Fahrenkopf's study is the only one to use an objective error measure.

Fahrenkopf and colleagues (2008) prospectively studied 123 paediatric residents (from total of 246, response rate 50%) over a six week period to investigate if a relationship existed between depression measured by the Harvard national depression screening day scale (Baer et al, 2000), burnout measured by the Maslach burnout inventory (Maslach 1996) and medication errors measured by an objective chart review. Twenty percent of these junior doctors met criterion for depression and 74 percent for burnout. Participants wrote a total of 6078 medication orders, with 45 errors (error rate 0.7%). Depressed doctors accounted for 6.2 times as many medication errors per resident month as non-depressed residents ($p < 0.001$). There were no significant differences for burnout (Fahrenkopf et al 2008). This study is small, and short in duration, but the findings are striking. However, as McLay et al (2008) state, medication errors may well be linked to depression, but Fahrenkopf's study is too small to draw this conclusion (McLay et al 2008). A larger, longer prospective study is required. The following two studies are larger and longer, but use a subjective error measure.

West and colleagues' (2006) prospective longitudinal cohort study of 219 internal medicine resident doctors at the Mayo Clinic, USA, with 184 respondents (84% response rate), used quarterly surveys for up to three years to assess the relationship between the doctors' mental health and self reported perceived errors in patient care. Surveys included self-assessment of medical errors, quality of life, depression measured by the PRIME-MD (Spitzer et al 1994) and burnout measured by the Maslach Burnout Inventory (Maslach et al 1996). Making a medical error in the previous 3 months was reported by a mean of 15 percent of participants at each quarter. Self-perceived medical errors were associated with a

subsequent decrease in quality of life and worsened measures in burnout. Self-perceived errors were associated with an odds ratio of screening positive for depression at the subsequent time point of 3.29 (95% confidence interval, 1.90-5.64). In addition, increased burnout was associated with increased odds of self-perceived error in the following three months. The authors conclude that self-perceived medical errors are common among residents and are associated with subsequent personal distress which is then associated with increased odds of future self-perceived errors, suggesting that perceived errors and distress may be related in a reciprocal cycle (West et al 2006).

Further work by West and colleagues (2009) over a longer period with 430 eligible internal medicine residents and 380 respondents (88 percent response rate) also measured fatigue (self report scale) and sleepiness using the Epworth Sleepiness Scale (Johns 1991) to assess the relationship with perceived medical error. Thirty-nine percent reported making at least one major medical error during the study period. When factors were modelled together, higher levels of distress and fatigue (but not sleepiness) were independently associated with self-perceived medical errors (West et al 2009).

Firth-Cozen's (1997) UK study of 225 hospital doctors and general practitioners, found that 82 percent reported recent incidents where they considered stress had negatively affected their patient care. Half of these concerned lowered standards of care; 40 percent were the expression of irritability or anger; seven percent were serious mistakes not causing death; and two resulted in patient death. The attributions given were tiredness (57 percent), the pressure of overwork (28 percent), depression or anxiety (eight percent), and the effects of alcohol (five percent) (Firth-Cozens, 1997).

The relationship between burnout, depression and perceived major medical errors was evaluated with all 24,922 members of the American College of Surgeons with 7905 respondents (32 percent response rate). Concern that they had made a major medical error in

the previous three months was reported by nine percent. Over 70 percent of these surgeons attributed the error to individual rather than system factors. Burnout and depression were independent predictors of reporting a recent major medical error on multivariate analysis. The frequency of overnight call, practice setting, method of compensation, and number of hours worked were not associated with errors on multivariate analysis (Shanafelt et al 2010).

Thus we have empirical evidence from prospective and retrospective studies with similar findings from two different parts of the world that doctors with higher levels of psychiatric morbidity are more likely to report that they have made an error at work (Shanafelt et al 2010, Firth-Cozens 1997, West et al 2009, West et al 2006) or are more likely to make an error at work (Fahrenkopf et al 2008).

This thesis is not directly about adverse events or errors, but medico-legal matters. The literature on the impact of complaints and claims for compensation against the doctor confirm the profoundly negative effect on the psychological well being of doctors. It appears from the literature on psychiatric morbidity in doctors that distress in doctors is a concern not just for the doctor, but for their patients. In addition, some doctors respond to stress by an increase in alcohol use. Alcohol is often a major feature of concerns regarding conduct, performance or health of a medical practitioner (Fowlie 1999). If medico-legal matters are a cause of distress for doctors, then doctors need to be better informed about how best to deal with this stress. The next chapter reviews the literature on the factors in the doctor associated with having a claim for compensation or complaint made against them; the association of psychiatric morbidity and hazardous alcohol use with doctors experiencing a medico-legal matter, and the concept of “Defensive medicine” and changes, or perceived changes, in the practice of medicine due to doctors’ medico-legal concerns.

CHAPTER 3: Literature review

Outline of the chapter

This chapter begins with a description of the literature review method followed by a review of the literature related to the study aims listed in chapter 1: factors associated with doctors having a claim or complaint made against them; the emotional response of doctors to a claim or complaint and finally the concept of defensive medicine and perceived changes in the practice due to medico-legal concerns.

Although other types of medico-legal matters are considered in my studies, the literature focuses on the two main areas of claims for compensation and complaints. The literature is dominated by studies from the USA, with a smaller number of British studies, then some New Zealand, Scandinavian, European, Canadian, Japanese, Iranian and Australian studies.

1. Literature review method

Searches of the literature were conducted in English using Medline, Embase, PsycINFO and Web of Knowledge. The following key words and phrases were used as search terms, as were synonyms of those words, and combinations of those words:- medical negligence, doctors, physicians, malpractice, negligence, complaints, medico-legal, Eysenck Personality Questionnaire, EPQ, personality, psychiatric symptoms, depression, alcohol, Alcohol Use Disorders Identification Test, AUDIT, General Health Questionnaire, GHQ, practice of medicine, and defensive medicine. Reference and citation lists were checked and additional sources came from these. In addition, librarians of the University of Sydney, Royal North Shore Hospital and the New South Wales Institute of Psychiatry assisted in refining search terms and or finding sources. Further articles, reports, and books were forwarded to the author from experts in the field. Annual reports of the New South Wales Health Care

Complaints Commission (1999, 2001, 2003, 2009), and annual reports of the Australian medical indemnity companies Avant (2008, 2009) and MDA (2009) were sourced.

There were no Australian empirical studies on the emotional impact of complaints and claims against doctors prior to my studies and there was one small Australian GP study (Salem et al 2009) on changes in the practice of medicine due to medico-legal concerns undertaken after my studies. However, there were studies and commentaries from other countries. These studies used two sampling methods: an assessment of doctors in general which included a sub-set of doctors who had experienced a claim or complaint; or only doctors who had experienced a claim or complaint. Both retrospective and cross sectional methods have been used with the literature in the main constituting Levels III and IV¹² with evidence comprising cohort studies, retrospective control studies, cross-sectional studies, and opinions of respected authorities.

This literature review focuses on claims for compensation for medical negligence, and complaints about doctors in the following three domains:

1. Factors associated with doctors having a claim for compensation or complaint made against them.
2. Psychological response of doctors to a claim for compensation or complaint.
3. The concept of “Defensive medicine” and changes in the practice of medicine due to medico-legal concerns.

¹² The NHMRC Evidence Hierarchy lists Level I as a systematic review of level II studies, Level II is a randomized controlled trial for an intervention, or a prospective cohort study for prognosis or aetiology; Level III-1 is a pseudo-randomised controlled trial eg alternate allocations, Level III-2 is a comparative study with concurrent controls, eg non-randomised experimental trial, cohort study or case-control study, or interrupted time series with a control group, or retrospective cohort study for aetiology; Level III-3 is a comparative study without concurrent controls eg historical control study, single arm studies or interrupted time series without a parallel control group; or a retrospective cohort study for prognosis, or a case control study for aetiology; Level IV is a case series, or cohort study or cross sectional study (NHMRC, 2009).

2. Factors associated with claims for compensation or complaints

The literature overwhelmingly reports that interventional specialties and male doctors are associated with higher rates of medico-legal matters with some evidence of an association with longer hours of work. There is conflicting evidence regarding overseas trained doctors. The literature on these four items will now be reviewed.

2.1 Specialty

Claims for compensation and specialty

Doctors practicing in high intervention areas are more likely to experience claims for compensation, complaints and have adverse events (Thomas et al 2000, Taragin et al 1994, Bark et al 1997, Hickson et al 2002, Hickson et al 2007, Chervenak et al 2007, Conklin et al 2008, Traina 2009, Klagholz et al 2010). Risks in radiology have also increased, with mammography claims increasing over the past two decades (Conklin et al 2008, Fileni 2010, Elmore et al 2005, Berlin 2005). The majority of the literature is from the USA, with some studies from the UK, Italy and New Zealand.

The Physician Insurance Association of America commenced in 1985 and holds data from the majority of insurers in the USA. The frequency of claims per specialty derives from the data, with comparative risk per doctor per specialty estimated from the number of doctors per specialty from the American Medical Association Physician master file. The surgical intervention specialties had the highest claim rate with radiology and radiation therapy the highest in the non-surgical groups (Conklin et al 2008) (Table 2).

Self report surveys are less reliable than insurance database studies due to the potential for responder bias and subjectivity of responses. Despite these limitations, the findings of self report studies are consistent with the large database studies.

Table 2: Calculated Claim Rate for the Top 20 Subspecialties in Total Claims made in 2005 in the USA (Conklin et al 2008).

Specialty	Number of drs per specialty	Total claims per specialty	Adjusted claim rate per specialty
Anaesthesiology	40,494	480	1.00
Cardiovascular and thoracic surgery	4,897	434	7.51
Cardiovascular, nonsurgical	22,349	368	1.40
Dermatology	10,593	125	1.00
Emergency medicine	29,144	348	1.01
Gastroenterology	12,017	233	1.64
General/family practice	92,750	1,338	1.22
General surgery	37,857	1,136	2.54
Internal medicine	154,002	1,530	0.84
Neurology	14,331	207	1.22
Neurosurgery	5,440	304	4.74
Obstetrics/gynaecology	42,600	1,750	3.48
Ophthalmology	18,870	341	1.53
Orthopaedic surgery	24,140	1,039	3.65
Otorhinolaryngology	9,917	238	2.03
Paediatrics	72,288	346	0.41
Plastic surgery	7,021	329	3.97
Radiation therapy	4,378	168	3.25
Radiology	33,024	816	2.09
Urologic surgery	10,676	261	2.07

Fellows of the American College of Obstetricians and Gynaecologists, known to be a high risk group for claims for compensation, were sent a Professional Liability Survey in 2009. Response rate was only 18 percent with 5644 respondents out of 31,665 (Klagholz et al 2010). Ninety-one percent of respondents reported experiencing one or more professional liability claims during their career, with an average 2.7 claims per doctor (Klagholz et al 2010). These results are almost identical to the same survey in 2006 to Fellows with 89 percent reporting they had been sued during their careers with an average of 2.6 claims per doctor (Chervenak 2007).

Radiology is described in the literature as an area with increased frequency of claims over the last 20 years. Extracting from the Physician Insurers Association of America data, Berlin et al (2005) found that failure to diagnose breast cancer had become the most prevalent cause of malpractice in the USA. Elmore and colleagues' 2005 survey aimed to assess the

relationship between radiologists' perception of and experience with medical malpractice in Washington, Colorado, and New Hampshire. Radiologists who routinely interpret mammograms were surveyed with questions for demographic data, practice environment and medical malpractice. The authors linked survey responses to screening mammography examinations performed between 1996 and 2001. The sample population of 181 community based radiologists with 139 respondents (77 percent response rate) had interpreted a total of 557,143 screening mammograms. Sixty-four out of 122 (52 percent) reported they had experienced a malpractice claim, and 18 out of 122 (15 percent) a mammography-related claim (Elmore et al 2005).

Fileni (2010) used insurance data in Italy to examine 1,424 claims against radiologists from 1993 to 2006. Likewise, an increase in claims was found. Fileni estimated that 44 percent of Italian radiologists would be the subject of a work related claim over a 10 year period. Similar to the US findings, the wrong reading of a mammogram had the highest increase in number of claims in Italy during the time period examined (Fileni 2010).

In the UK, an earlier study by Bark et al (1997) also found specialty differences. They investigated the experience of litigation in 1011 consultants and senior registrars working in acute hospitals in North Thames in England with 747 respondents (76% response rate). Two hundred and eighty-eight of the 747 doctors (37 percent) had been involved in litigation at some point during their career, with 213 of 440 (49 percent) clinicians in the surgical specialties having experienced litigation compared with 76 of 331 (23 percent) of doctors in the medical specialties ($P < 0.001$). Orthopaedics had the highest rate of litigation of all the specialty groups with 50 out of 63 (79 percent) having been sued, and obstetrics closely followed with 48 out of 63 (76 percent) (Bark et al 1997).

Complaints and specialty

Hickson and colleagues' (2002) retrospective longitudinal cohort study of 645 general and specialist doctors in a large US medical group between 1992 and 1998 analysed complaints to the practice. Similar to the above negligence claims studies, they found that patient complaints were higher for surgeons than non-surgeons. Interestingly, they correlated complaints with law suits, and found that surgeons named in a single lawsuit generated significantly more complaints to the practice than surgeons with no lawsuits ($P < 0.001$) and a similar pattern existed for non-surgeons ($p < 0.004$).

In New Zealand the rate of formal complaint against doctors increased considerably from 1980 to 2000, with the annual rate of complaint in 2000 being 5.7 percent (Cunningham et al 2003)¹³. Cunningham and colleagues' survey to 1200 New Zealand doctors selected using a stratified, systematic sampling technique of vocationally registered general practitioners, vocationally registered hospital-based specialists, and general registrants had 598 respondents (50 percent) with 196 (34 percent) having been the subject of a complaint. In contrast to other such studies, they did not find that procedural doctors experienced more complaints than non-procedural doctors (Cunningham et al 2003).

Thus from the vast majority of these studies from different countries using different methods, the interventional areas of medicine have the highest rate of claim for compensation and complaint, with the exception being the New Zealand complaints study which found no difference between interventional and non-interventional areas of medicine.

¹³ The rate of complaint to the New South Wales Health care Complaints unit in Australia in 2008-09 was four percent. It was five percent around the time of the New Zealand study (New South Wales Health Care Complaints Commission Annual Reports 1999, 2001, 2003, 2009).

2.2 Gender

Claims for compensation and gender

Overwhelmingly the literature shows that male doctors are more likely to be the subject of a claim for compensation, a complaint or be referred to an agency for “performance concerns” (Taragin et al 1992, Hickson et al 2002, Cunningham et al 2003, Firth-Cozens 2008, Yates 2010). Studies from the USA, New Zealand and the UK are reviewed. Despite their varying methods over the last two decades, their conclusions are the same.

Taragin and colleagues (1992) explored malpractice claims from 1977-1987 in a large insurance database of 9250 New Jersey doctors considering specialty, age, gender, title, site of training, and board certification. Logistic regression found male doctors were three times as likely to be in the high-claims group as female doctors (relative risk, 3.1; 99% confidence interval, 2.2 to 4.4) (Taragin et al 1992). These are reliable findings as all variables were recorded on all members, and the logistic regression was able to take into account all the variables.

Complaints and gender

Hickson and colleagues’ (2002) retrospective longitudinal cohort study of 645 general and specialist doctors from a large US medical group between 1992 and 1998 also found that complaints were higher for males compared with females (8.8 mean complaints for males compared with 5.0 mean complaints for females ($p=0.01$)). This study also did not depend on self-report but on trained staff responsible for recording the complaints data.

Likewise complaints in New Zealand investigated by Cunningham and colleagues by cross sectional survey of 1200 doctors with 598 respondents (50 percent response rate) found that male doctors were significantly more likely to receive a complaint than females (Cunningham et al 2003).

Performance concerns and gender

Concerns about a doctor's performance may not be a medico-legal matter, but it may be related. In 2001 the UK National Clinical Assessment Service was established by the National Health Service to assess doctors and dentists with performance concerns. Data from 1772 cases entered in the first four years (2001 to 2005) were analysed and compared to the profile of the NHS medical workforce. Women were less likely to be referred to the National Clinical Assessment Service than men, and age and specialty differences between men and women doctors did not explain the lower referral rate for women. In 2004 women accounted for 42 percent of the general practitioner medical workforce but only 13 percent of GP referrals to the National Clinical Assessment Service, and women accounted for 37 percent of the medical hospital and community workforce but only 20 percent of hospital and community workforce referrals. Women were under-represented proportionally in all specialties (NCAS 2006).

Firth-Cozens (2008) reviewed the National Clinical Assessment Service report and compared the data to published reports of disciplinary, difficulty or medical negligence claims over five countries (Norway, UK, USA, Spain, Australia). Women doctors were consistently less likely to be disciplined or referred for difficulties (such as alcohol and other drug problems, or sexual misconduct) or have claims for compensation made against them, than male doctors (Firth-Cozens 2008).

A more recent report investigated 59 UK doctors who came before the General Medical Council for serious professional misconduct. The multivariable analysis showed that male sex (odds ratio 9.80, 95% confidence interval 2.43 to 39.44, $P=0.001$), and having had academic difficulties during their medical school course especially in early years (odds ratio 5.47, 95% confidence interval 2.17 to 13.79 $P<0.001$) were independently associated with coming before the General Medical Council for serious professional misconduct (Yates

2010).

Thus data from an insurance company in the USA, complaints units in the USA and New Zealand, and performance or conduct issues in the UK all find that males are over-represented compared with females. The reasons for this is not explored in this thesis, but Firth-Cozens' article on "Doctors with difficulties: why so few women?" discusses the possible reasons including whether referring agencies treat males and females differently, or whether females as a group have higher communication skills than males as a group (Firth-Cozens 2008).

2.3 Hours of work

Long hours of work, poor sleep and overload between work life and home life have been linked with an increase in psychiatric morbidity in doctors, and there is some evidence that this is linked to errors in medical care (see chapter 2). However, there is little evidence about hours of work and medico-legal frequency.

Hickson and colleagues' (2002) retrospective longitudinal cohort study of 645 general and specialist doctors in a large US medical group between 1992 and 1998 measuring all patient complaints found that complaint number was positively correlated with volume of clinical activity. In South Australia, health impaired doctors with drug misuse or mental health problems were found to often work long hours (Kalucy 2002).

2.4 Overseas trained doctors

There is conflicting data about the relationship of place of training to medico-legal matters and to performance concerns. Taragin and colleagues' (1992) analysis of 9,250 New Jersey doctors demographic characteristics and medical malpractice claims from the medical insurance company database, found no association between claims rate and doctor's site of training (Taragin et al 1992). Similarly, Hickson's USA complaint study also found no association between country of medical school training and increased rate of complaint

(Hickson et al 2002). Cunningham and colleagues' (2003) New Zealand cross-sectional self report survey of 1200 doctors (598 respondents, 50% response rate) likewise found no difference in risk of complaint for those doctors who trained overseas compared to those doctors who trained in New Zealand (Cunningham et al 2003).

Contrary to this, the UK National Clinical Assessment service found that overseas trained doctors did have a proportionally higher rate of referral for concerns about their performance but the report is cautious about conclusions due to incomplete data on this issue (NCAS 2006).

Kalucy (2002) reviewed doctors referred to the health committee of the South Australian Medical Board for a potential health problem (eg drug and alcohol misuse, mental illness, general medical problems) over an 18 year period. Like with the National Clinical Assessment Service report, health referrals are not medico-legal matters but they may be related. Kalucy reported that over half the doctors referred for drug misuse to the South Australian Medical Board did not train in Australia (Kalucy 2002).

Notwithstanding the different methods used in international studies, nearly all report high intervention specialties have higher rates of medico-legal matters and male doctors have higher rates than female doctors. There is less evidence regarding hours of work and association with medico legal claims, and conflicting results regarding the whereabouts of training.

With regard to the factors associated with a medico-legal matter in Australia, the results of my large study are reported in Chapter 8. The independent variables of gender, specialty, age, hours of work, holiday in the past year, and site of training are included in the multivariable logistic regression to ascertain the association of these factors with doctors experiencing a current medico legal matter. Similar to other studies, doctors were more likely to be involved in a current medico-legal matter if they were male, worked in high-intervention

areas of medicine (surgery and obstetrics/gynaecology), and worked longer hours. There was no association between experiencing a medico-legal matter and being Australian trained or not Australian trained.

3. The emotional response of doctors to a claim or complaint

Lavery in 1988 drew an analogy between a doctor's reaction to a claim of medical negligence and the stages of grief described by Kubler-Ross: denial, anger, bargaining, depression and acceptance (Kubler- Ross, 1969). This analogy continues today.

There are retrospective and current accounts of the emotional response of doctors to a claim for compensation or complaint. The studies include surveys and in depth interviews. Emotional response is measured differently in each study. Responder bias is a potential feature of these studies as the response rates are often moderate to low. Yet despite the different methods, the results are surprisingly similar across different continents. The literature on doctors' emotional responses to claims for compensation for negligence and for complaints is considered here. Studies from the USA, UK, Canada, New Zealand and Iran are reviewed.

3.1 A claim for compensation

Research led by Sara Charles and colleagues in the USA in the 1980's was a cornerstone for ongoing research in this field. First they surveyed a sample of doctors who had been sued for malpractice between 1977 and 1981 to understand the impact of litigation on doctors (Charles et al 1984). The second study involved a survey of a sample of doctors (both sued and not sued) to ascertain if the concerns generated in the first study were due to actually being sued (Charles et al 1985). The third study concerned doctors who were sued in 1985 and went to trial to investigate the emotional response of doctors to the trial in comparison to other phases of the legal process (Charles et al 1998a). Finally, for greater

depth of information, they interviewed a subset of doctors who had been sued (Charles et al 1988).

Their first study (Charles et al 1984) was a random sample of 450 doctors from 5135 Chicago doctors named in a malpractice law suit in the period 1978–1981 in *The Cook County Jury Verdict Reporter*. There were 154 respondents (34 percent response rate) and some respondents had more than one suit in the 5 year period. There were approximately 17,000 doctors who practiced in Chicago at the time. The questionnaire focussed on the perception of the impact of litigation on their professional practice and personal lives. It sought demographic and professional data, agreement or disagreement with 20 statements reporting common psychological reactions of doctors being sued, 33 physical and psychological symptoms from the current Diagnostic and Statistical Manual of Mental Disorders (DSM-III) and legal process and outcome questions. Respondents reported the current stage of litigation as: period of discovery in 88; suit dropped in 39; settled in 30; trial verdict in favour of the doctor in 6; and there were no cases where there was a trial verdict in favour of the plaintiff. ‘Major depression’ type symptoms were reported by 39 percent (56 of 143) and ‘adjustment disorder’ type symptoms were reported by 20 percent (29 of 143). Nineteen (15 percent) reported a general loss of confidence as a doctor. Fifty-seven percent (77 of 135) believed that they and their families had suffered as a result of litigation. Eight percent (11 of 135) reported a new physical illness during the legal process including 2 percent (three of 135) having a myocardial infarct during the time of litigation and seven percent (10 of 136) had an exacerbation of a previously diagnosed illness. The authors conclude that a malpractice suit was a serious and often devastating event in the personal and professional life of the respondent doctors causing psychological distress, undermining confidence and career satisfaction and the quality of the traditional doctor-patient relationship (Charles et al 1984).

Their second survey of 1000 randomly selected Chicago doctors sought to compare the responses of both sued and not sued doctors. There were 346 respondents (37 percent response rate to survey) and 194 doctors had been sued (56 percent). Both the concern about and actual litigation were found to cause emotional distress. However, sued doctors reported significantly more symptoms of depressed mood, inner tension, anger and frustration than non-sued doctors (Charles et al 1985).

Charles and colleagues then surveyed doctors who had been sued for medical malpractice in 1985 who went to trial (Charles et al 1988a). They were able to contact 107 of the 122 doctors who went to trial that year with 64 respondents (60 percent response rate). Favourable verdicts were received by 72 percent. Ninety-seven percent reported emotional and or physical reactions to the legal process. Sixteen percent found the trial the single most stressful stage of litigation whereas 52 percent indicated the entire period or a combination of stages was most stressful. Inner tension was reported by 86 percent, depressed mood by 80 percent, frustration by 78 percent and anger by 70 percent. In addition, guilt feelings were common in those who lost the case. Almost two-thirds reported decreased satisfaction with their careers (Charles et al 1988a).

Charles and colleagues further delved into the doctors' responses by interviewing a subset of 51 sued doctors about their emotional reaction to being sued. Twenty-three percent identified litigation as their most stressful life experience and of these, 45 percent reported symptoms suggestive of major depression (Charles 1988b). The majority of suits filed against the doctors resulted in no payment to the plaintiff thus an adverse outcome itself was not the most significant issue (Charles et al 1988b).

This series of studies paved the way for other researches to consider the impact of the medico-legal process on the doctor in the USA and other countries. Their methods of in-depth interview or self-report surveys are the methods used in subsequent studies.

Martin and colleagues (1991) surveyed 620 doctors (sued and not sued) insured with a major malpractice insurer in the USA, with 273 respondents (44 percent response rate). Like Charles' series of studies, they aimed to investigate psychological sequelae of malpractice litigation but in addition they wanted to know whether there was variation in symptoms over time, differences in specialty responses, differences in solo or group practitioners' responses, and differences in gender responses. A higher proportion of respondents than non-respondents had been sued (59 percent of respondents, 34 percent of insurees) and high risk groups were also over-represented (eg obstetrics 14 percent of respondents v 9 percent of all insurees).

Similar to the Charles studies, they found that malpractice litigation was a major life trauma. They also found that stress symptoms were highest during the first two years after the lawsuit, and even after two years their stress symptoms remained greater than non-sued doctors. Stress increased in those with cases pending or multiple suits. There were no statistically significant differences in distress according to specialty or solo v group practice. Females were less affected than males and used more active coping strategies. It was hypothesized that females may be better able to mobilize active coping or may validate themselves by other aspects of their lives while sense of self in males is more powerfully tied to occupation. Those who saw litigation as a job hazard and not an attack on their ability as doctors were better able to use adaptive coping mechanisms such as improved office practices. This group also minimized negative coping, such as self-blame, and were more active participants in their defence. The authors conclude that malpractice is a major life trauma that should be dealt with as any other trauma by using coping strategies such as knowledge of the psychological consequences, cognitive reframing and collegial and personal supports (Martin et al 1991).

Similarly, Wenokur and colleagues (1991) investigated the emotional impact of malpractice suits in 2,210 randomly selected Michigan State Medical Society members with

746 respondents (34 percent response rate). This study probed further into coping styles. Sixty-five percent of respondents had experienced at least one lawsuit. Eleven percent of doctors who had been sued admitted to increased alcohol use or self medication with narcotics, anxiolytics, or antidepressants. Thirty-one percent felt a sense of relief talking about their malpractice experience, and seven percent saw a mental health professional as a result of malpractice-related emotional trauma. The author concluded that the emotional impact of litigation must be acknowledged by doctors as part of self care to be able to provide optimal care to their patients (Wenokur et al 1991).

The themes of distress and negative coping are similar to the English study by Bark and colleagues (1997). A postal survey of 1011 consultants and registrars in acute hospitals in the North Thames explored the impact of litigation on these doctors. Of the 747 respondents (76 percent response rate) 288 (37 percent) had experienced litigation. Anger, distress, and feeling personally attacked were common responses as well as feeling isolated from colleagues and unsupported by management (Bark et al 1997).

The perception of damage to reputation was a focus in Cook and colleagues' (1992) postal survey in Canada exploring the experience and attitude to malpractice litigation in 287 Canadian doctors. There were 171 respondents (60 percent response rate). This was made up of 99 out of 139 specialists (71% response rate) and 72 out of 148 primary care doctors (49 percent response rate). Damage to reputation by a finding of negligence was thought to have a major long term effect by 69 percent of primary physicians and 72 percent of specialists. Even if there was no liability found, 45 percent of primary care doctors and 46 percent of specialists rated the damage as substantial in the short term and 41 percent of primary care doctors and 38 percent of specialists rated the damage as substantial in the long-term (Cook et al 1992).

A recent study in Iran (Saber et al 2009) used the method and questionnaire of my NSW Health Care Complaints Commission study (Chapter 4) to investigate the psychiatric

morbidity of Iranian doctors with a current law suit. The study population was 497 doctors who had a claim of negligence that commenced between March and August 2007. There were 385 respondents to the questionnaire (response rate 78 percent). Seventy-six per cent of participants (293 out of 385) reached case identification for psychiatric morbidity using the GHQ-28. This rate is much higher than the Iranian general population (19 percent case identification) and Iranian non-sued general practitioners (36 percent case identification) (Saber et al 2009). This result is also considerably higher than all other GHQ results reported in this thesis. They report their method of calculating to be the usual method for case identification.

3.2 A complaint

The emotional response of doctors to complaints and to claims for compensation is comparable. Two English complaints studies from the 1990's, one a qualitative interview study, and the other a postal questionnaire had similar findings. Jain's (1999) interview study of the emotional response of 30 British general practitioners to complaints found three stages of response: 'initial impact', 'conflict' and 'resolution'. The impact stage was a sense of 'being out of control', a feeling of shock, panic and indignation towards patients generally. The conflict stage included conflicts around professional identity, conflicts with family and colleagues, and conflicts arising from the management of the complaint. This was accompanied by feelings of anger, depression and suicidal ideation. The resolution stage involved defensive practice or, for some, plans to leave general practice. There was no resolution for a minority. Complaints were rarely perceived as learning experiences (Jain 1999).

Mulcahy's postal survey of 848 English consultants in Oxford with 443 respondents (52 percent response rate), 246 of whom received at least one complaint, reported responses to complaints as irritation in 52 percent, worry in 42 percent, concern in 38 percent, surprise

in 38 percent, annoyance in 37 percent, anger in 33 percent, distress in 32 percent, disappointment in 31 percent, and anxiety in 28 percent and vulnerability in 28 percent of respondents. The emotional response was particularly striking when the complaint was considered to be unjustified. Respondents sometimes saw the complainants as psychologically ill or having problem personalities. Some doctors considered the complaint an unwelcome intrusion into their life that caused them extra work that stopped them seeing other patients (Mulcahy et al 1995, Mulcahy 2003).

In New Zealand, Cunningham and colleagues have studied many aspects of doctors' experience of complaints. Cunningham's first study in 2000 was a qualitative thematic analysis of telephone interviews with 10 doctors who had experienced a complaint. There were immediate negative effects on the psychological state of the doctor, their practice of medicine and the doctor patient relationship. These included an intense negative emotional response, reduced ability to consult with speed and confidence and to tolerate uncertainty; hostility towards the complainant and loss of trust in patients.

In the long-term, some respondents continued to feel depressed or angry, and some felt a loss of goodwill towards patients. Receiving a medical complaint had a negative impact on doctors, and on important components of the doctor-patient relationship. The concerning implication of this small study was that complaints might reduce rather than improve the delivery of patient care (Cunningham et al 2000). Cunningham (2004) further investigated the doctor's emotional state, their attitude towards their work and patients, and their ability to cope with the stresses of practice. He used the themes from the telephone interview study to develop a questionnaire to explore further the impact of receiving a medical complaint. One thousand two hundred New Zealand doctors were surveyed with 598 completed surveys (50% response rate) and of these 201 (34%) had experienced a complaint. These doctors were asked to recall the short and long term impact of the complaint on themselves and their practice of

medicine by agreement or disagreement with a series of statements. Respondents from different vocational groups were compared as were doctors who had and had not experienced a complaint.

Immediate responses (up to six weeks) included anger in 143 out of 197 respondents (73 percent), depression in 129 out of 198 respondents (65 percent), shame in 72 out of 198 respondents (36 percent), and guilt in 65 out of 200 respondents (33 percent). Reduction in trust of patients was reported by 76 out of 199 respondents (38 percent) and reduced goodwill to patients was reported by 57 out of 199 respondents (29 percent). Eighty-three out of 196 respondents (42 percent) reported a reduced ability to tolerate uncertainty in their practice, and 59 out of 198 respondents (30 percent) reported reduced confidence in their clinical judgment. Only 112 out of 198 respondents (57 percent) felt that they were able to consult well, although most respondents felt that they continued to perform technical tasks well and continued to provide the same range of services.

As expected, the impact of a complaint softened in the long-term for most of the items. Anger was still felt by 72 out of 197 (37 percent) of respondents, but feelings of depression, guilt and shame fell to around 10 percent. All emotion items showed a significant difference between the immediate and long-term responses. However, more doctors who had experienced a complaint reported feeling depressed compared with those who had never had a complaint ($p=0.009$). No differences were found between doctors practicing in different vocational groups.

The authors concluded that receiving a medical complaint has a significant negative impact on the doctor particularly in the short term, and on important components of the doctor-patient relationship lasting into the long-term (Cunningham 2004).

This study compared doctors who had experienced a complaint with those who had not. However, asking respondents to retrospectively recall their emotional and practice

changes in response to a complaint is not as accurate as investigating at the time of the complaint, nor as accurate as using a reliable and valid measure such as the General Health Questionnaire as used in my studies. However, the ideal study is a longitudinal study, which I had planned to do, but was unable to due to changes within the collaborating medical insurance company.

The 1980's and 1990's was a period of change for complaints processes and the understanding of adverse events (Mulcahy 2003, Walton 2009). During the 1990s, many countries published studies exposing the extent of harm in healthcare (Brennan et al 1991, Thomas et al 2000, Wilson et al 1995, Vincent et al 2001, Schioler et al 2001). A shift was required from individual blame to safer health systems (Walton 2009), and an appreciation that complaints, offer an opportunity for improvement for the patient, the doctor and the health care system in general.

All the studies regarding the doctor's emotional response to claim for compensation or complaint have similar themes irrespective of the location -the USA, UK, Canada, New Zealand and Iran. The emotional responses include feelings of tension, frustration, anger, guilt, distress, shame, depression, thoughts of suicide, vulnerability, feeling out of control and that this was a major life trauma.

As a profession, doctors are required to know the relevant laws pertaining to their practice; they also need to understand the potential medico-legal processes and the possible psychological consequences of a medico-legal matter. One of the goals of this thesis was to provide the data on doctors in Australia who have experienced a medico-legal matter. The association between psychiatric morbidity and hazardous alcohol use with a current medico-legal matter in Australia doctors is reported in Chapters 4, 5 and 9.

4. Changes in the practice of medicine due to medico-legal concerns

In this section the concept of defensive medicine is discussed followed by a review of the international literature on perceived changes to doctors' practice of medicine due to medico-legal concerns. There was little evidence on perceived changes in the practice of Australian doctors due to medico-legal concerns prior to this thesis.

4.1 Defensive medicine

Defensive medicine is commonly defined as the ordering of treatments, tests and procedures primarily to protect the doctor from liability rather than to substantially further the patient's diagnosis or treatment (Hermer 2010, Bishop 2010). The terms positive defensive medicine and negative defensive medicine have also been used in definitions, but the terms are used in different contexts in the literature. Summerton in 1995 published an important study using the terms "positive" to refer to potentially good changes, and "negative" to refer to potentially bad changes in practice (Summerton 1995). A less clear definition was provided by Klingman and colleagues in 1996:- "When physician perform tests or procedures primarily to reduce exposure to liability, they are practicing positive defensive medicine. When they avoid certain patients or procedures, they are practicing negative defensive medicine" (Klingman et al 1996 pp188-9). The terminology used in the Klingman definition is confusing. A further definition using the same concepts, but a different name for them, is that defensive medicine takes place when unnecessary treatments or investigations or referrals are made and this is referred to as assurance behaviours (equivalent to Klingman's positive defensive medicine), and avoidance of high-risk procedures or patients referred to as avoidance behaviours (equivalent to Klingman's negative defensive medicine), with the principle aim of reducing the doctors exposure to damages claims (Studdert et al 2005, Catino 2009).

Due to the potential for confusion, I avoid using the terms positive and negative, and

instead use the term assurance for additional behaviours, and avoidance for behaviours that are avoided. There may be good outcomes for some patients from defensive practices such as:-referral of difficult cases to more specialised doctors, or to better equipped hospitals which may be quality-enhancing (Studdert et al 2005). Additional testing may allow earlier detection of illness in some patients. However, this will then increase the likelihood that a missed diagnosis will be ruled negligent. Defensive use of technology is self-reinforcing (Studdert et al 2005).

In addition there are behaviours that are “potentially safer” practice changes. These are driven by both medico-legal concerns and the intention to improve practice, for example better record keeping (Mulcahy et al 1995, Summerton 1995), development of audit procedures and providing better explanations to patients (Summerton 1995, Cunningham 2006).

In summary, defensive medicine is medical practice based on the fear of legal liability rather than on the best interests of the patient (Studdert et al 2005, Kessler 2006), even though in some instances it may prove to be in the patient’s interest (Studdert et al 2005). The literature on assurance behaviours, avoidance behaviours and finally potentially safer practice changes are reviewed in this chapter after a discussion on the cost and impact of law reform on defensive medicine.

The impact of law reform on defensive medicine and on health care costs

No attempt to measure the costs of defensive medicine is made in this thesis. However, I mention it because of the conjecture about the extent and the cost of defensive medicine. Measuring defensive medicine itself is difficult as it is usually the subjective belief of the doctor that is measured (Hermer et al 2010, Studdert et al 2010), and therefore measuring the cost of defensive medicine is also difficult (Studdert et al 2010).

The following two major economic studies from the USA have attempted to measure

the impact of tort law reform and health care costs on medical practice. The 1996 landmark Kessler study measured treatment costs for one group of patients, and compared costs across the states considering the different state laws for medical liability. The second study by Hellenger et al (2006) compared costs in states with differing malpractice laws, but did not focus on a particular patient group as in the Kessler study. Two further studies are discussed that investigate whether changes in law impact on perceived changes in practice (Carrier et al 2010, Salem et al 2009).

In order to obtain direct empirical evidence Kessler and colleagues analyzed the effects of malpractice liability reforms on all elderly Medicare beneficiaries in the USA treated for serious heart disease in 1984, 1987, and 1990, and measured the malpractice liability laws in the states. There was a five to nine percent reduction in medical expenditure in states with law reforms that provided lower liability pressure (for example cap on non-economic damage payments), with no substantial effects on mortality or medical complications. They concluded that liability reforms can reduce defensive medical practices and costs (Kessler et al 1996).

Hellinger and colleagues (2006) investigated the impact of state tort law reform on health care costs a decade later. They measured health care expenditure per capita in 15 states before and after the enactment of tort reform that capped noneconomic damage payments in malpractice cases. Their findings were similar to Kessler et al (1996) in that laws capping non-economic damage payment reduced health care costs in the order of three to four percent (Hellenger et al 2006).

More recently, Carrier and colleagues (2010) explored whether differing malpractice laws of the states of the USA impacted on the practice of medicine, but they did not measure costs. They surveyed a representative sample of doctors drawn from the American Medical Association Physician Master file with 4,720 respondents (62 percent response rate) using a

subjective measure of defensive medicine drawn from a malpractice concern scale developed and validated by Williams (Fiscella et al 2000). It asked participants if they agreed or disagreed (using a five point likert scale) with the following statements set out in Box 1:

Box 1: Statements to assess malpractice concern (Carrier et al 2010)

- I am concerned that I will be involved in a malpractice case sometime in the next ten years;
- I order some tests or consultations simply to avoid the appearance of malpractice;
- I feel pressured in my day-to-day practice by the threat of malpractice litigation;
- sometimes I ask for consultant opinions primarily to reduce my risk of getting sued;
- relying on clinical judgment rather than on technology to make a diagnosis is becoming risky because of the threat of malpractice suits.

Concern about malpractice liability was pervasive among doctors with 60–78 percent either agreeing or strongly agreeing with each of the five statements. Malpractice law reforms were not associated with a significant difference in physicians' malpractice concerns comparing results across the states with and without law reform. In particular, the most strongly advocated reform, capping noneconomic damages, was not associated with a significant difference in malpractice concerns (Carrier et al 2010). However, these are concerns, not reality. There was no objective measure of actual practice as there was in Kessler's study.

A small and recent study from New South Wales, Australia (Salem et al 2009) attempted to measure the impact on defensive medicine in GPs in the eastern suburbs of Sydney after the introduction of the Civil Liability Act 2002 (NSW). Although the enactment of the Act reduced litigation in NSW, the GPs in the main were ignorant of the legal reforms and consequent reduction in their legal liability. Their perception of assurance defensive medicine in their own practice was high. This study was limited by small numbers and low response rate (515 surveyed and 90 respondents, 17 percent response rate) (Salem et al 2009).

These research findings span over 20 years which may account for the variation.

Medico-legal concerns are probably now more entrenched particularly in the USA thus reducing the impact of law reform, or doctors may not be aware of the changes in the law, or it may be that doctors' subjective measures of defensive medicine measure their concern not their practice.

This thesis provides Australian evidence on perceived practice changes caused by medico-legal concerns. Like the Carrier study and the majority of studies reviewed below, surveys generally measure the doctor's perceptions of practice. Whether or not this perception matches actual practice is measured in Elmore and colleagues' (2005) study, but not the others.

4.2 Particular changes in practice

Studies from around the world have found that doctors' medico-legal concerns have prompted them to alter their practice with both assurance and avoidance behaviours. Table 3 summarises the relevant studies and practice behaviours. Studies about practice changes come from many countries with the majority of studies being undertaken in the USA. I begin with Summerton's English study as it was a key study in the field, and then relevant studies from the USA, Italy, Japan, Puerto-Rico, Canada, New Zealand and Australia.

Table 3: Assurance and avoidance behaviours due to medico-legal concerns*

Country; sample type; study type, author and year	Respondent sample size and Response rate of study	Percent who refer patients to specialists more than usual	Percent who order tests or procedures more than usual	Percent who prescribe medication more than usual	Percent who are more selective regarding patients seen	Percent who avoid or stop certain procedures
USA; sued doctors; self report survey, Charles et al 1984	n=154 rr 34%		62		42	28
USA; doctors who practice obstetrics; 1982-88 insurance file review, Rosenblatt 1990	n=690 100% file review					25% stopped obstetrics in 6 year period
Canada; GPs and Specialists; self report survey, Cook 1994	n=171 rr49% GPs rr71% spec.					50% GPs 45% Specialist

Country; sample type; study type, author and year	Respondent sample size and Response rate of study	Percent who refer patients to specialists more than usual	Percent who order tests or procedures more than usual	Percent who prescribe medication more than usual	Percent who are more selective regarding patients seen	Percent who avoid or stop certain procedures
England; GPs; self report survey, Summerton 1995	n=300 rr 60%	64	60	29	25	42
Australia; obstetric rural GPs; self report survey, Watts 1997	n=167 rr 82%				14% stopped obstetrics previous 12 months	14% stopped obstetrics previous 12 months
England; Consultants and registrars in acute hospitals; self report survey, Bark 1997	n=769 rr 76%					30% of Surgical doctors 20% of Non-surgical
US; on-line survey of doctors; self report, Common Good 2002	N=300 rr not given	74	79	41		
US; on-line witnessed in others doctors, Common Good 2002	N=300 rr not given	85	91	73		
US; radiologists; self report survey, Elmore, 2005	n=139 rr 77%		72% more mammography or ultrasound, 59% more breast biopsy			35% consider stopping mammography
US; high risk of litigation doctors; self report survey, Studdert 2005	n=824; rr 65%	52	59	33	39	32
Japan; gastro-enterologists; self report survey, Hiyama 2006	n=131 rr 77%	68	36	16	75	75
Italy; GPs; self report survey, Catino 2009	n=300 rr 30%		78% in past month		26% in past month	
US; primary care and specialists; self report survey, Bishop 2010	n=1231; rr 51%		91			
US; doctors; self report survey, Carrier 2010	n=4720 rr 62%	60	64			
Puerto Rico; all doctors in San Juan district; self report survey, Cruz 2010	n=951 rr 30%				50% do not accept high risk patients	48% do not accept emergency cases

*Studies are listed in chronological order.

Studies with a response rate of less than 30% are not included.

4.2.1 Assurance behaviours

Summerton's 1995 mail survey to 500 GPs from a medical defence organisation with 300 respondents (60 percent response rate) investigated defensive medical practice in GPs in England. It is a landmark study often quoted in the literature. A high 98 percent of Summerton's respondents claimed to have made some practice changes as a result of the possibility of a patient complaining. Increased rate of referrals was reported by 64 percent (190 out of 298), increased diagnostic testing by 60 percent (177 out of 297) and unnecessary prescription of drugs by 29 percent (87 out of 297) (Summerton 1995).

Sara Charles' early study in the USA in 1984 was a small study of 450 doctors with 154 respondents (34 percent response rate). The main focus was the emotional response of doctors to being sued (discussed above) but they also investigated some perceived practice changes. Ordering diagnostic tests when thought clinically unnecessary due to medico-legal concerns was reported by 62 percent (Charles et al 1984).

Moving forward nearly 20 years, the Common Good "fear of litigation" study in the USA investigated a much larger set of behaviours and beliefs about medical negligence. The Common Good study surveyed 300 doctors online to explore how the fear of litigation affects the practice of medicine and the delivery of medical care. No response rate was given. In addition 100 hospital nurses and 100 hospital administrators were interviewed by telephone. The survey not only asked the doctor about their own behaviour, but also what they had observed in their colleagues.

Ordering more tests due to the fear of litigation was reported by 79 percent of doctors for their own behaviour, and 91 percent of doctors report other doctors do this.

Referring to specialists for fear of litigation was reported by 74 percent of doctors for their own behaviour, and 85 percent of doctors report other doctors do this.

Prescribing more medications for fear of litigation was reported by 41 percent of

doctors for their own behaviour, and 73 percent of doctors report other doctors do this.

Thirty-eight percent of doctors reported the fear of malpractice made their relationship with patients less personal.

The fear of liability was cited by doctors and hospital administrators as the leading factor that discouraged doctors from openly discussing and thinking of ways to reduce medical errors. In addition there was near unanimous agreement between doctors, nurses and administrators that the fear of litigation increased health care costs (Common Good 2002).

However, these are all subjective opinions and lack objective data. Beliefs about behaviour may represent concern, but do not necessarily represent the actual behaviour. In the Common Good study, doctors reported on every measure that their colleagues had a higher rate than they did when reporting on their own behaviour. The following study compared the subjective opinion of doctors about their practice, with an objective measure of actual practice.

Elmore and colleagues (2005) measured perceived impact of medico-legal concerns on the practice of radiologists, their experience of medical malpractice, and their actual patient-recall rates for breast biopsy. One hundred and eighty-one eligible radiologists from Washington, Colorado, and New Hampshire in the USA who routinely interpreted mammograms were surveyed with 139 respondents (77 percent response rate), with 124 responses eligible for analysis. Survey questions included demographic data, practice environment, and experience of medical malpractice. Survey responses were linked to 557,143 screening mammograms performed between 1996 and 2001. Sixty-four out of 122 radiologists (52 percent) reported a prior malpractice claim and 18 out of 122 (15 percent) reported mammography-related claims. Seventy-two out of 123 (59 percent) believed their concern about malpractice claims moderately or greatly increased their recommendations for breast biopsies. However, there was no significant association between recall rates for breast

biopsy and radiologist's experience or their perception of the impact of medical malpractice. The authors pose two opposite hypotheses for this: the fear of malpractice does not actually influence practice and that physicians have overestimated the effect malpractice concerns have on their own clinical practice, or that the concerns about malpractice may have affected the practice patterns of all physicians regardless of their level of malpractice claim exposure. Even the radiologists who had not experienced a claim or who responded that they were not practicing defensively might unconsciously be practicing defensively. The authors thought the latter hypothesis more likely due to the recall rate for mammography increasing over time in the United States (Elmore et al 2005). Interestingly, radiologists believed that their peers' recommendations were more influenced by malpractice concern than their own (Elmore et al 2005). This was the same as the Common Good study result of colleague assessment (Common Good 2002).

Studdert and colleagues surveyed 1,333 doctors in Pennsylvania from six high risk of litigation specialties (emergency medicine, general surgery, orthopedic surgery, neurosurgery, obstetrics/gynecology, and radiology) drawn from the American Medical Association Physician Master file. There were 824 respondents (65 percent response rate). Behaviours such as referring patients for consultation, ordering tests or performing diagnostic procedures more than they thought clinically appropriate due to concern over malpractice liability was reported by 93 percent of respondents. Radiologists were removed from some of the analysis due to some aspects not being applicable. Increased test ordering was performed by 405 out of 669 (59 percent weighted result), increased referrals due to medico-legal concerns was reported by 349 out of 669 (52 percent weighted result), and increased medication prescribing due to medico-legal concerns was reported by 223 out of 669 (33 percent weighted result). In particular, 43 percent of respondents said they used imaging technology in clinically unnecessary circumstances due to malpractice concerns (Studdert et al 2005).

Is there a difference between the specialties and their perception of the influence of medico-legal concerns on their practice? Bishop and colleagues (2010) surveyed 3000 doctors from the American Medical Association Physician Master file from four groups: primary care, nonsurgical (medical) specialists, surgical specialists, and other specialists, from all locations. There were 1231 respondents (response rate reported as 51 percent of 2416 who were eligible and thought to have received the survey). Respondents and non respondents only differed statistically by age (52.0 vs. 50.2 years; $P < .001$). Ninety-one percent of respondents believed that doctors in general order more tests and procedures than needed to protect themselves from malpractice suits. These views were consistent across specialty groups with doctors in typically lower liability-risk specialties, such as primary care, expressing as much concern about malpractice as physicians in high-risk surgical specialties. No significant differences were seen by geographic location or type of practice (Bishop et al 2010).

Carrier's large study with 4720 respondents (response rate 62 percent), found similar results. There were high levels of malpractice concern among both general and specialist doctors even in states with law reform changes to reduce the doctor's liability (specific findings reported in table 3) (Carrier et al 2010).

Thus there is widespread medico-legal concern that covers specialties of high and low risk and locations in the USA even when there are differing laws across the states. How this relates to practice is not certain as revealed by Elmore and colleagues (2005).

One might hypothesize that the high level of medico-legal concerns in the USA is because of that particular legal system. However, the literature in other countries shows that medico-legal concerns are global and not particularly related to the laws in any one place. In Italy, Catino and colleagues (2009) surveyed perceived defensive medical practice in a sample of 1000 general practitioners with 300 respondents (30 percent response rate). Seventy-eight percent of respondents reported that they practiced at least one form of assurance defensive

medicine (eg ordering tests or treatments that they regarded as clinically unnecessary) during the previous working month. The authors hypothesized that this was caused by the increase in medical litigation, the punitive approach to error in hospitals and the culture of blaming which acts as an obstacle to detection and reporting of error (Catino et al 2009). These ideas were discussed in Chapter 1 of this thesis whereby there is a clash between the focus on the individual in tort law and the focus on system improvement in the patient safety movement.

In Cunningham and colleagues' (2006) New Zealand series, 1200 doctors were surveyed with 714 respondents (60 percent response rate) in addition to 12 in-depth doctor interviews to investigate defensive practice changes. Narrative text from the surveys and the interviews were analysed. Increased investigation and referral rates were common themes as well as potentially safer changes. Cunningham makes the point, often overlooked in similar studies, that the complaints process has the potential to improve healthcare delivery and appropriate education needs to be allied to the complaints process, so that defensive medicine is constrained, and potential improvements in healthcare delivery enhanced (Cunningham et al 2006).

Salem and Forster's small recent study of 515 Australian metropolitan GPs surveyed in 2008-9 was limited by its low response rate with only 90 respondents (response rate 17 percent). Notwithstanding the low response rate, this study is reviewed as there is little Australian literature, and this study was conducted not long after my GP and large studies. They found a very high perception of assurance behaviours – considerably higher than in my GP and large studies. They report that 83 percent of their sample perceived that they sometimes or often referred patients to specialists unnecessarily due to a potential threat of malpractice litigation, 83 percent sometimes or often ordered more tests than medically indicated due to a potential threat of malpractice litigation, 49 percent sometimes or often suggested procedures unnecessarily due to a potential threat of malpractice litigation and 70

percent sometimes or often prescribed more medications than medically indicated due to a potential threat of malpractice litigation. Comparing the Salem GP study to my GP study, they surveyed 515 GPs from one area of Sydney whereas I surveyed 1239 GPs from all over Australia. They had 90 respondents with a 17 percent response rate whereas I had 566 respondents with a 46 percent response rate. Responder bias is likely to be the cause of the differences, with the subsample of doctors with heightened medico-legal concerns responding to the survey. Indeed this is likely in all these surveys, but the smaller the response rate, the less representative the sample.

The above studies, from many countries, overwhelmingly demonstrate that doctors perceive they perform additional tests, referrals and prescribe additional medication due to medico-legal concerns. Whether this perception equals reality is not tested.

4.2.2 Avoidance behaviour

This section describes avoidance behaviours – when doctors avoid certain patients or procedures due to medico-legal concerns. Some doctors also stop practicing medicine due to medico-legal concerns, and many consider this.

Not all avoidance behaviours put patients at risk- some are potentially beneficial to patients, for example it is wise for a doctor to refer elsewhere and avoid a particular procedure in certain circumstances. However, other avoidance behaviours such as reduction in emergency or obstetric services in rural areas may be detrimental to patient care. Relevant studies are reviewed here starting again with the Summerton study in the UK, then studies from the USA, Japan, Switzerland, New Zealand and Australia. Additional studies are reported in table 3.

Summerton's (1995) cohort of 300 GPs reported that 42 percent (124 out of 298) avoided treating certain conditions and 25 percent (74 out of 298) removed patients from their list due to medico-legal concerns (Summerton 1995). Bark et al's 1997 study of the concerns

about litigation of 1011 UK acute hospital consultants and registrars with 769 respondents (76 percent response rate) reported that thirty percent of surgical specialty staff avoided certain procedures as did 20 percent of non-surgical specialties, and 56 of the 288 who had been involved in litigation (19 percent) considered giving up medicine altogether.

This was not unique. Charles and colleagues USA study of 154 doctors out of 450 (response rate 34 percent) sued between 1987-81 reported that 42 percent stopped seeing certain types of patients due to medico-legal concerns, 28 percent stopped performing high risk procedures, and thoughts of retiring early were entertained by 34 percent (45 of 143)(Charles 1984).

A US study of 220 obstetricians and 470 family doctors with obstetric practice (total 690 doctors practicing obstetrics), using medical insurance company records from the most popular medical insurance company in Washington State between 1982 and 1988, explored why doctors stopped practicing obstetrics (Rosenblatt et al 1990). The study compared doctors who discontinued obstetrics with those who continued. The two variables of interest, withdrawal from obstetric practice, and involvement in malpractice claim for obstetrics, were always recorded. Twenty-five percent discontinued obstetrics during the study period (149 out of 470 (32 percent) of family doctors and 22 out of 220 (10 percent) of obstetricians). Being named in an obstetric malpractice suit may have played a role in discontinuing obstetric practice, but the strongest predictor was older age (Rosenblatt 1990). The authors noted that 25 percent was a high rate of attrition over the 6 years of the study, and was higher than the rate new doctors entered obstetric practice (Rosenblatt et al 1990). The strength of this study was that it was from reliable records of all doctors insured for obstetric practice in that insurance company, but it is now over 20 years old.

In Australia, Watts (1997) surveyed 210 South Australian rural GP obstetricians with 167 respondents (82 percent response rate) and found that 26 percent stopped obstetrics in the

previous 12 months and 57 percent reported indemnity insurance as the main reason for stopping. This is different to the findings of the US insurance data from the 1980s which found that age was the variable most related to stopping obstetric practice at that time (Rosenblatt et al 1990). Interestingly, family/lifestyle was the most important reason for ceasing obstetric practice in Australian rural GPs in previous surveys. It was also the second most popular reason in Watts' study (1997). There appears to have been an increase in concern about medico-legal matters over the last two decades.

A more current study for obstetricians was the on-line survey in 2009 of Fellows of the American College of Obstetrician and Gynaecologists which explored the impact of liability insurance on the practice of the doctor in the previous three years. Response rate was poor with 31,665 fellows surveyed and only 5,644 surveys completed (18 percent response rate). The respondent fellows perceived that due to medical insurance concerns in the past three years, 20 percent increased their number of caesarean deliveries and 20 percent reported that they stopped offering vaginal births after caesareans. Additionally, 21 percent decreased the number of high-risk obstetric patients they saw, 10 percent decreased the number of total deliveries, and seven percent stopped practicing obstetrics altogether (Klagholz et al 2009).

Further evidence of doctors stopping obstetric practice came from longitudinal workforce data of practicing obstetricians from 1998 to 2004 in Pennsylvania, Florida, and New York. Rising malpractice premiums were associated with an increased exit and reduced rate of entry into the obstetric workforce by five percent (Polsky 2010).

Studdert and colleagues (2005) Pennsylvanian study of 824 doctors from six high risk litigation specialties similarly found that 216 out of 669 (32 percent) believed they had restricted their practice by eliminating procedures prone to complications, such as trauma surgery, and 268 out of 669 (39 percent) avoided patients who had complex medical problems or were perceived as litigious (Studdert 2005).

Elmore and colleagues (2005) study of 181 radiologists with 139 respondents (77 percent response rate) report that 43 of 112 respondents (35 percent) considered withdrawing from mammogram interpretation because of malpractice concerns.

Thus studies also show that doctors may stop a part of their practice, eg obstetric practice (Watt 1997, Klagholz et al 2009, Chervenak et al 2007, Polsky 2010) or consider stopping medicine (Charles et al 1984, Bark et al 1997, Cunningham et al 2004) due to medico-legal concerns. Do doctors also reduce their hours of work due to medico-legal concerns? Helland et al's (2009) USA economics study found that they do. There was a stronger association for doctors over 55 years, and solo practitioners (Helland 2009). These issues for Australian doctors are examined in my large study of 2,999 doctors reported in Chapter 10.

Hiyama and colleagues (2006) Japanese study of 171 randomly selected gastroenterologists with 131 respondents (77 percent response rate) found that avoidance of high risk patients due to medico-legal concerns was perceived to occur sometimes or often by 99 out of 131 (75 percent) of gastroenterologists, and avoidance of certain procedures due to medico-legal concerns was perceived to occur sometimes or often also in 99 out of 131 (75 percent). Interestingly, gastroenterologists in practice for more than 20 years believed they adopted avoidance behaviours significantly less often than those in practice for less than 10 years (Hiyama 2006).

In Switzerland, physician and general practitioner use of prostate-specific antigen (PSA) screening was surveyed examining the extent to which liability fears influence recommendations for testing. Five hundred and fifty-two doctors were surveyed with 255 respondents (45 percent response rate) made up of 168 GPs (68 percent) and 73 internal medicine specialists (32 percent). Seventy-five per cent of both groups (physicians and GPs) recommended regular PSA screening to men older than 50 years of age. Yet only 56 percent

of the general practitioners and 53 percent of the physicians believe that PSA is an effective screening method, and 41 percent of general practitioners and 43 percent of physicians reported that they sometimes or often recommend this test for legal reasons (Steurer, 2009).

Cunningham and colleagues' New Zealand survey (2004) of 1200 doctors with 598 respondents (50% response rate) of whom 201 doctors had received a medical complaint (34 percent), investigated the short (less than six weeks) and long term impact of the complaint on their practice of medicine and the way they related to patients. Respondents who had received a complaint reported a reduction in trust of patients for 76 out of 199 (38 percent) respondents in the short term, and 63 out of 199 (32 percent) respondents in the long term. They also reported a reduction in sense of goodwill to patients in 57 out of 199 (29 percent) in the short term, and 36 out of 199 (18 percent) in the long term. The long term impact of a complaint for nine percent was that they did not wish to keep on practicing medicine. No differences were found between doctors practicing in different vocational groups. The study concluded that receiving a medical complaint has a significant negative impact on the doctor-patient relationship (Cunningham et al 2004). Similarly 38 percent of doctors from the US Commongood study reported that the fear of malpractice has made their relationship with patients less personal. These are self report findings, and difficult to measure.

Likewise, my large Australian study of 2999 specialists, GPs and trainees found that medico-legal concerns impacted on the doctor-patient relationship, but in a variety of ways. This is reported in Chapter 10.

4.2.3 Potentially safer practice changes

One of the purposes of a complaints system is to maintain or improve standards of professional practice. To do this, complaints systems should effect change in the behaviour of individual doctors and the profession in a way that is of benefit to society. Put simply, complaints should lead to improved medical practice (Cunningham 2004).

There is less emphasis on potentially safer practice changes in these studies. This reflects bias in the construction of the studies. Of note is that this barely features in the studies from the USA.

Summerton reported potentially safer practice changes due to medico-legal concerns in his GP study (n=300). More detailed note taking was perceived as likely or very likely to occur for 269 out of 298 (90 percent), more detailed patient explanations were likely or very likely to be given for 258 out of 298 (87 percent), and development of audit systems within practice were likely or very likely to occur for 120 out of 298 respondents (34 percent) (Summerton 1995).

Also in England around the same time, Mulcahy surveyed 848 consultant doctors in Oxford with 443 replies (52 response rate). Two hundred and forty-six respondents (56 percent) had received at least one complaint and of these 17 percent kept better records, 15 percent provided fuller consultations, and 13 percent increased clinical vigilance in response to the complaint (Mulcahy et al 1995).

Bark and colleagues (1997) study of 1011 UK acute hospital consultants and registrars with 769 respondents (76 percent response rate) of 37% overall had been involved in litigation.

The majority of respondents (both with and without litigation experience) considered that litigation, or the threat of litigation, led to attempts to improve communication with patients and staff and to keep better records. These were reported more frequently than avoidance of procedures or over-investigation (Bark et al 1997).

Likewise, in the USA Charles and colleagues first study in 1984 of 154 sued doctors (34 percent response rate), reported that as a result of being sued, 69 percent of respondents (n=94) kept more meticulous records. However, for 25 percent of respondents (n=33), they reported that they recorded less pertinent information.

In Canada, more information was given to patients by 80 percent of the 171 specialist and primary care doctors due to concerns about medico-legal issues (Cook 1992).

Again the situation in Australia regarding these practice changes was not known prior to my research. Practice change in response to a medico-legal matter is reported in Chapter 7 (GP study) and Chapter 10 (large study of 2,999 specialists, GPs and trainees). The findings of my studies can now inform education in Australia about medico-legal processes, considering the frequency, the emotional responses, and the potentially safer and potentially problematic practice changes that can occur. This education can occur in medical schools, hospitals, medical Colleges, insurance organisations and complaints bodies.

The next seven chapters present the publications of my research.

CHAPTER 4: The New South Wales Health Care Complaints pilot study

Nash L, Curtis B, Walton M, Willcock S, Tennant C. **The response of doctors to a formal complaint.** *Australasian Psychiatry*, 2006; 14: 246-250

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The response of doctors to a formal complaint

Louise Nash, Bradley Curtis, Merrilyn Walton, Simon Willcock and Christopher Tennant

Objectives: This pilot study investigates the psychological impact on doctors of a complaint to the New South Wales Health Care Complaints Commission and the doctor's perception of legal risk.

Method: Doctors who received a complaint were sent a set of questionnaires embracing psychological variables and their perceptions of legal risk.

Results: The response rate was 60%. Thirty-eight per cent of respondents met screening criteria for psychiatric disorder. There was, however, minimal functional impairment of work, social or family life. Respondents scored highly on altruism, but at the same time were 'tough minded'. The questionnaire to assess the doctor's perception of legal risk appeared to have acceptable construct validity but showed that doctors still misunderstand medico-legal risk.

Conclusions: Psychiatric morbidity rates of our sample were comparable with other Australian medical samples. This small sample appeared to cope with the stress of a complaint better than those reported in other studies.

Key words: complaints, doctors, NSW Health Care Complaints Commission, perception of legal risk, psychological impact.

In the state of New South Wales (NSW) in Australia, 5% of doctors are the subject of a written complaint to the NSW Health Care Complaints Commission (HCCC) each year. The HCCC is part of the professional regulatory system for holding medical practitioners accountable. Less than 10% of these complaints result in some form of 'disciplinary' action of counselling, limiting conditions of practice, supervision of practice or deregistration.¹⁻³

The aim of this paper is to explore the psychological impact of the HCCC complaints process on doctors and their perception of legal risk. The latter refers to the understanding of the law as it relates to mistakes and adverse patient outcomes. The law does not require doctors to practice perfectly; rather, it requires doctors to have the knowledge and skill comparable to other clinicians and to act reasonably in accordance with the established standards. The stress on patients (as plaintiffs or complainants) is recognized and has been explored elsewhere.⁴

Not surprisingly, a review of the literature⁵ indicates that the threat or actual occurrence of a complaint or lawsuit causes emotional and physical stress.⁶⁻¹² In addition, there are potentially positive changes to medical practice such as increased screening, development of audit or consumer satisfaction activities, more detailed record keeping and more extensive explanations to patients, as well as potentially negative changes such as prescription of unnecessary drugs, unnecessary increase in frequency of follow up, referral rates and diagnostic testing, as well as avoidance of certain treatments and even not seeing certain types of patients.^{6,7,9,13,14} Other factors influencing the doctors' response are the availability or lack of professional or personal support systems (and the doctors' willingness to use them) and the medical culture of 'infallibility',

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whereby errors in patient care were viewed as a manifestation of character flaws.^{12,13,15-17} In Australia, the 'threat of litigation' was perceived as the most severe work-related stressor in a survey of 464 randomly selected metropolitan general practitioners.¹⁸

METHOD

Doctors who were the subject of a written complaint to the HCCC in the period February to May 2004 were invited to participate in the study. Two weeks after the doctor received written notification of the complaint, the HCCC sent the questionnaire package with reply paid envelope to the study team. Four weeks later, in order to improve the response rate, a repeat set of questionnaires was sent to all doctors in the original mail-out. Confidentiality and anonymity was maintained as the study team had no access to the HCCC files and the HCCC had no access to the returned questionnaires.

Demographic data

Demographic data sought included year of birth, year of graduation, country of graduation, gender, marital status, postcode of practice, type of clinical practice (GP, Specialist, other) and practice arrangement (solo, group, hospital, medical centre, community health).

Current and past complaints

Respondents provided a written narrative outlining the current complaint and the proposed action by the HCCC as described in the initial HCCC correspondence to them, and any previous complaints. Respondents rated the seriousness of the current complaint. They were also asked if they had discussed the complaint with others and how helpful this had been.

Perception of legal risk

A questionnaire was developed by one of the authors (MW) on doctors' general perception of legal risk.

Psychiatric morbidity

This was assessed by The General Health Questionnaire-28 (GHQ-28),¹⁹ a sensitive and well-validated screening tool to detect common non-psychotic psychiatric morbidity, considering symptoms over the last 2 weeks.²⁰ It has four subscales: somatic symptoms, anxiety and insomnia, social dysfunction and depression. The recommended cut-off score to identify cases is above four using binary scoring. This has been shown to have high sensitivity for identification of potential cases of psychiatric morbidity.^{21,22} Comparison data were derived from the National Survey of Health and Wellbeing,²³ Australian interns,²¹ and consultants in a Sydney teaching hospital.²⁴

Attitude to Helping Others (altruism)

Internalized values are generally accepted as the source of altruistic intent, while market research indicates 'donation behaviour' as positively associated with altruism.^{25,26} The Attitude to Helping Others Scale has four items which reflect the respondent's behaviour in helping others. It was designed to assist charitable organizations and has been validated in that context.²⁷

Sheehan Disability Scale

The Sheehan Disability Scale is considered a sensitive tool for self-report of functional impairment in the three domains of work, social life/leisure activities and family life.²⁸

The Eysenck Personality Questionnaire

This self-report questionnaire attempts to measure three major dimensions of personality – extraversion (E), neuroticism or emotionality (N) and psychoticism (P). The latter assess a lack of 'tender-minded' attitudes and is equivalent to 'tough mindedness'. The Eysenck Personality Questionnaire-Revised Short Scale questionnaire was used.²⁹

Statistical analysis

All statistical analysis was undertaken using SPSS Version 12.0 (SPSS, Chicago, IL, USA). Any significance value below $\alpha = 0.05$ was considered to be statistically significant. Validity was established by testing construct validity in the subjective instruments. Construct validity of the Perception of Legal Risk questionnaire was assessed by the direction and strength to which factors with expectation of both good and poor correlation fulfilled our prediction. Cohen gives the following effect size guidelines for the Spearman (used with skewed data) correlation coefficient: Small = 0.10; Medium = 0.30; Large = 0.50.³⁰

RESULTS

The initial mail-out ($n = 69$) achieved a modest 31% response rate, but this rose to 60% after the second set of questionnaires was sent. Four doctors wrote supporting comments and one phoned thanking the study team for conducting the research. One wrote an angry response.

Demographic data

The mean year of birth was 1951, with a range of 1930–1973. Mean year of graduation was 1977 with a range 1954–2000. The country of primary medical degree was Australia (88%), with one each (3%), from India, Sri Lanka, Pakistan and UK. Eighty-one per

cent of the respondents were male. Eighty-four per cent were married/defacto, 8% separated/divorced, and 8% single.

Thirty-two per cent of respondents were in General Practice or Primary Care; 62% other specialists; 3% non-specialist in hospital; and 3% specialist in training. Forty-six per cent worked in solo practice, 26% group practice, 20% mainly hospital work and 8% other.

Attendance at peer review and educational meetings

The mean number of peer review sessions per year attended by the respondents was 6.6. However, there was a skewed distribution with a minimum of 0 (range 0–25) and as such caution is required when interpreting these results for a small sample. The mean number of education meetings per year was 16.7 with a median of 10.

Previous complaints

Five per cent of respondents had five or more previous complaints to the HCCC, 9% had four previous complaints, 9% had two previous complaints, 32% had one previous complaint and 45% of respondents had no previous complaints.

The current complaint

The HCCC was reported by the doctor as taking the following action: HCCC investigating further in 32%, referral to the Medical Board in 3%, referral to another authority (e.g. Area Health Service) in 10%, assisted resolution in 11%, direct resolution with complainant in 3%, referral for conciliation in 9% and, no further action in 32%. The doctor's perceived seriousness of the current complaint was: serious or quite serious in 18%, minor or very minor in 36% and trivial in 46%.

Discussing the complaint with another

Eighty-seven per cent of the sample did discuss the complaint. The vast majority found this to be helpful. Sixty-seven per cent discussed the complaint with their spouse, 58% with a medical colleague, 31% with a non-medical colleague, 28% with a friend outside work, and 20% with another family member.

The doctor's perception of legal risk

Ninety-four per cent of respondents believed that all doctors make mistakes. Seventy-eight per cent believed that inadequate communication was a factor in most complaints and the same percentage stated they were comfortable discussing mistakes with their colleagues. Sixty-six per cent believed that an apology

does not imply an admission of liability. Sixty-three per cent believed that patients were not more likely to sue if told of mistakes. Thirty-nine per cent believed that the law requires them to make perfect decisions. Ten per cent of respondents believed that only unprofessional and incompetent doctors are sued for professional negligence.

A number of correlations (Spearman) were of interest in this study. There was a significant relationship between number of educational meetings and reduced number of complaints ($r = 0.56$; $p < 0.001$). There was a significant correlation between how the HCCC intended to handle the complaint and the doctors perceived seriousness of the complaint ($r = 0.36$; $p < 0.05$) and doctors who felt 'more responsible' were more likely to view the complaint as more serious ($r = 0.50$; $p < 0.01$). Respondents believed that an apology was unlikely to increase the risk of legal action ($r = 0.43$; $p < 0.01$), and inadequate communication was seen as a major factor in most 'mistakes' ($r = 0.44$; $p < 0.01$). Doctors who believed medical mistakes are rare were more likely to indicate that they felt professional standards should be set solely by the medical profession ($r = 0.60$; $p < 0.001$).

General Health Questionnaire

Thirty-eight per cent of the sample met criteria for psychiatric morbidity (GHQ-28 > 4). Using a higher cut-off to increase specificity (GHQ-28 > 7), 33% of doctors met the criteria for psychiatric morbidity. There was a non-significant trend that those who perceived the complaint as serious were more likely to meet criteria for caseness with the GHQ ($p = 0.09$).

Attitude to Helping Others

Altruistic responses to this scale ranged from 89 to 97%.

Sheehan Disability Scale

The results indicate little in the way of functional impairment of work, social life/leisure or family life.

The Eysenck Personality Scale (Eysenck Personality Questionnaire-Revised Short Scale)

Respondents scored significantly higher than the general population on the psychoticism or tough mindedness scale ($p < 0.001$).

DISCUSSION

Response rate

The response rate of 60% is at the top end of the range in similar studies.^{6,7,12,13} The study was conducted through a period of unprecedented upheaval

in the HCCC and the proposed timing of the mail-out was not always adhered to.

Potential personal risk factors for a complaint

Our demographic results are similar to the New Zealand survey of doctors who had complaints against them, of whom 68% were in the 40–60 year age group and male doctors were more likely to receive a complaint than female doctors. The New Zealand cohort had a higher rate of postgraduate qualifications than their peers. The authors of this New Zealand study postulate that more senior doctors carry the burden of responsibility for patient care and are therefore more likely to receive complaints.³¹ Our high proportion of male doctors may be due to this, or it may be that as a group women work less hours, or are better communicators, or work in less complex environments. Equally, why was the rate of complaint lower for overseas-trained doctors when taking into account their proportion of the population? Non-responder bias is a concern here. Issues such as these will be investigated in a larger cohort study to which this pilot is a prelude.

The role of education appears to be important in that those doctors who attended more educational sessions in our study were less likely to have more than one complaint. Education sessions are not only important from a 'learning' point of view, but also offer a time of collegial support. The possible link may also be due to the professionally engaged practitioner being more likely to attend education sessions.

Doctors' perception of legal risk, this complaint and the HCCC handling of the complaint

There is a tension in the responses concerning communication, with 78% of respondents believing that inadequate communication was a factor in most complaints yet 37% believing that patients were more likely to sue if told of mistakes.

Another tension was that many of the complaints were deemed by the doctor to be trivial or minor. However, of the 32% of complaints in this study that were considered serious enough to warrant further investigation by the HCCC, in only 27% did the doctor believe the matter was serious. This may be based on the facts as perceived by the doctor and indeed may not be serious, or this may be due to the doctor's early response to the complaint.

Morbidity

Psychological morbidity is high at 38% which compares poorly with the Australian general population in the National Mental Health survey, which identified 12% for adult cases.²³ However, it is similar to other Australian medical samples with 37% of interns

meeting case definition²¹ and 41% of senior medical staff from a metropolitan teaching hospital doing similarly.²⁴ There was a trend in our study that those who regard the complaint as more serious were more likely to have an increased level of psychiatric morbidity. There was minimal social, work or family dysfunction noted in the respondents as a group.

Personality

This sample of doctors rate as 'tough minded', yet are altruistic in responses to the Attitude to Helping Others Scale.

Limitations of the study

Although the response rate was relatively good, there may have been non-responder bias.

The research team had no control over the mail-out. Some respondents received the questionnaire outside the specified time frames, and there may have been more complaints lodged with the HCCC than were included in the study. Additionally, the mail-out (occurring 2 weeks after notification of the complaint) was too short a time span to capture longer-term morbidity associated with the complaints process. A follow up reassessment would give a better picture, particularly for the more lengthy complaint process.

CONCLUSION

As a pilot study, the questionnaires appear to have acceptable face and construct validity, and the method is able to achieve a reasonable response rate. Psychological morbidity and disability measurements indicate that the respondents were no more distressed than interns or metropolitan teaching hospital specialists, although there was a trend that those who regard the complaint as more serious had greater psychiatric morbidity. There remains some tension in responses about the medico-legal environment. Finally, these results suggest that those who attend education sessions may have a reduced risk of multiple complaints.

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CHAPTER 5: Psychological morbidity in the GP study

Nash L, Daly M, Johnson M, Walter G, Walton M, Willcock S, Coulston C, Van Ekert E, Tennant C. **Psychological morbidity in Australian doctors who have and have not experienced a medico-legal matter: cross-sectional survey.** Australian and New Zealand Journal of Psychiatry 2007;4:917-925.

Psychological morbidity in Australian doctors who have and have not experienced a medico-legal matter: cross-sectional survey

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Objective: To describe the differences in psychological morbidity between Australian general practitioners (GPs) who have experienced a medico-legal matter and those who have not.

Methods: A total of 1499 GPs were initially invited to participate in the study. Two hundred and sixty requested not to participate, with 1239 subsequently being sent a survey. There were 566 respondents (45.7% response rate to survey). There were two sources of data. First, a cross-sectional survey sought demographic information, personality traits via the Eysenck Personality Questionnaire (EPQ), history of a medico-legal matter with any medical defence organization, and measures of psychological morbidity, including the General Health Questionnaire (GHQ), Sheehan Disability Scale (SDS), and Alcohol Use Disorders Identification Test. Second, information was extracted from the United Medical Protection database on medico-legal matters.

Results: Fifty-nine per cent of respondents to the survey reported ever having a medico-legal matter, with 13% having a current medico-legal matter. Those with a current matter reported increased levels of disability (in work, social or family life) and higher prevalence of psychiatric morbidity (45% vs 27% GHQ 'case identification' rates), compared to those with no current matter. Those respondents with a history of past medico-legal matters reported increased levels of disability (SDS) and depression subscores (GHQ). Male respondents drank significantly more alcohol than female respondents, and male respondents with current or past medico-legal matters had significantly higher levels of alcohol use than male respondents with no experience of medico-legal matters.

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Conclusions: Doctors who have current and past medico-legal matters have a higher level of psychological morbidity. The study design was unable to distinguish cause or effect. A longitudinal study is planned to investigate this. The findings have significant implications for medical training, doctor support systems and medical insurance groups.

Key words: complaints, general practitioners, hazardous alcohol use, lawsuits, medico-legal matters, psychiatric morbidity.

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In a study of Australian general practitioners (GPs), threat of litigation was perceived as the most severe work-related stress [1]. As a group, doctors overestimate the likelihood of being sued [2,3], while the majority of patients entitled to make a formal complaint or claim compensation do not [4,5].

A complaint or lawsuit against a doctor causes emotional and physical stress [6,7]. This has been observed ≥ 2 years after being sued, regardless of outcome [8]. Issues influencing the doctor's response include personality, professional or personal supports, and the medical culture of infallibility [9–15]. More generally, the fear of litigation impacts on the practice of medicine in both a negative and a positive way. Although it may increase awareness of risk, it may also discourage open discussion and introduction of measures to reduce error, and even increase health-care costs, such as through unnecessary tests or referrals.

The frequency of medico-legal matters varies by gender, age, specialty, hours worked and country of practice, such that men aged 40–60 years working in high-intervention specialties are more likely to be the subject of a medico-legal matter [16–19]. In Australia, during the year 2005–2006, 4% of members of the largest Australian medical defence organization, United Medical Protection (United), incurred a claim for compensation [20]. In the state of New South Wales (NSW), 5% of doctors have a complaint made about them to the NSW Health Care Complaints Commission (HCCC) per year [21–23]. In the USA, 86% of high-risk specialist doctors had been named in a malpractice suit at least once [17].

Predictors of psychiatric illness in doctors include family history of mental illness, personality type (particularly neuroticism), and contextual factors such as perceived work conditions and stress outside of work [24–26].

The relevance of this research to psychiatrists is threefold: first, in the treatment of a colleague who is

involved in a medico-legal matter, second, as doctors who have (or may have) a complaint or suit against them, and third, as teachers of students and trainees about this aspect of professional life.

The aim of the present study was to explore the differences in psychological morbidity between GPs who have and have not had experience of medico-legal matters using several psychological health measures, with consideration to demographic and personality variables. Stress experienced by patients has been addressed elsewhere [27].

Methods

A descriptive comparative design was used. In May 2006 a cross-sectional self-report survey was administered to GPs.

Sample

A total of 1499 GPs was selected from a listing of all GPs who were currently insured with United. The sample included all 530 GPs classified by United as proceduralists (those who perform procedures of a more invasive or high-risk nature, such as obstetrics, general or regional anaesthesia, i.v. sedation, minor orthopaedic surgery, tonsillectomy), and a random selection of 970 non-procedural GPs from a total of 6479. One subject survey pack was sent back with the code removed, and 10 were returned unopened due to change of address.

Because we were seeking to use existing data within United's database (to reduce data burden) and to collect additional information via survey, a two-stage approach was used to ensure protection of United members' confidential data. All selected GPs were informed about the study, including the use of historical data relating to medico-legal matters held by United, and were asked to complete a form noting if they wished not to participate in the study. Two hundred and sixty GPs (17%) requested not to participate and were therefore not included. The remaining 1239 GPs were sent the survey, with ultimately 566 respondents (45.7% survey response rate).

Data and procedure

Psychological morbidity was the outcome of interest (measured by psychiatric symptoms, disability and potentially hazardous alcohol use).

Data for analysis was obtained from two sources. First, survey data (the major data source) included demographic information (birth, gender, year and country of graduation, type of general practice, marital status, hours worked per week, weeks worked per year, attendance at peer review and hours at formal education), current and past medico-legal matters, personality assessment, and psychological morbidity measures.

Second, data were extracted from the United Oracle database on medico-legal matters for those GPs who agreed to participate. This included all medico-legal matters, or matters arising from members' medical practice that had given rise to legal action such as a claim for compensation, a complaint before a medical registration board or complaints body, coronial inquiry, or allegation of Medicare fraud and other billing irregularities (Table 1). A unique study code was used to combine the extracted United data with the survey data received. A listing of the study codes was obtained from the survey data returned and only United data relating to members representing these study codes were issued to the team.

The self-administered survey was posted to GPs and included a reply paid envelope. Four weeks later, a reminder letter was issued, again requesting participation and return of the survey.

Measures of psychological morbidity

Psychiatric morbidity was assessed using the General Health Questionnaire-28 (GHQ) [28], a sensitive and well-validated screening tool to detect common non-psychotic psychiatric morbidity that considers symptoms over the past 2 weeks. It has four subscales: somatic symptoms; anxiety and insomnia; social dysfunction; and depression. There are two scoring systems used: a summation of scores (scores from 0 to 3 per item, with higher number for increasing symptom severity) giving a total score, and a 'case identification' for psychiatric morbidity using binary scoring (0/1) per item, with a score >4 meeting case definition.

Impairment in work, social and family life was measured using the Sheehan Disability Scale (SDS) [29], a self-report questionnaire that assesses functional impairment in work, social/leisure activities and family life. It is a sensitive tool for identifying (primary care) patients with mental health-related impairment. In the present study it was used to identify individuals with impaired role functioning in the three domains using a modified 4-point Likert scale for each domain (1 = not impaired to 4 = severely impaired), with summation of scores for a global SDS score.

Alcohol use was assessed using the World Health Organization Alcohol Use Disorders Identification Test (AUDIT) [30], which is sensitive to detecting hazardous and harmful drinking. The AUDIT questions are scored from 0 to 4, with subjects who score

a total of ≥ 8 classified as potentially hazardous drinkers (AUDIT case identification).

Personality measure

The Eysenck Personality Questionnaire (EPQ)– Revised Short Scale version [31] was used. The EPQ is a valid and reliable self-report questionnaire that measures three major dimensions of personality: extraversion (E), neuroticism (N) and psychoticism (P), representing personality traits not diagnoses. Neuroticism is sometimes referred to as 'emotionality' and measures emotional stability or sensitivity; psychoticism measures 'tough-mindedness' and at the extreme a lack of empathy. The extroversion (E) scale determines if the subject is outgoing and talkative, and a low score represents introversion.

Definition of medico-legal matter

Respondents were asked, 'Have you ever received assistance from any medical defence organization in a medico-legal matter?'. These matters included a claim for compensation for damages, complaint to an HCC body, medical board inquiry, disciplinary hearing, health insurance commission inquiry, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, anti-discrimination board inquiry, coronial inquiry and criminal charge. These matters were identified as either 'current' or 'past' (the latter referring to medico-legal matters that were closed or finalized). Respondents were also asked the type of their most recent medico-legal matter.

Statistical analysis

Statistical analysis was undertaken using SPSS Version 12.0 (SPSS Version 15, Chicago, IL, USA). Differences between groups were assessed using independent samples t-tests for continuous variables, and χ^2 tests for categorical variables. Bivariate relationships between continuous variables were performed using Pearson product-moment or Spearman's rank order correlation coefficients. Binary logistic regression analyses were performed to determine if medico-legal matters were associated with psychiatric morbidity and potentially hazardous drinking after controlling for relevant confounding variables.

Ethical considerations

Approval for the study was granted through Northern Sydney Central Coast Area Health Service and the University of Sydney Ethics Committees, and United Board. Anonymity and confidentiality of survey responses, and United membership and data, were protected at all times. The survey contained a covering letter indicating that de-identified data relating to medico-legal matters held by United would be issued to the study team if the survey data were returned. The study was funded by a research grant from Northern Sydney Health.

Results

Characteristics of respondents

Demographic and medico-legal history of the sample is reported in Table 1.

Characteristics of those who had experienced a medico-legal matter (self-report data)

Respondents who had ever experienced medico-legal matters were significantly older (mean = 53.96 years, SD = 9.25) than those who had never experienced a medico-legal matter (mean = 51.26 years, SD = 9.84; $t_{(549)} = 3.28$, $p < 0.001$).

Respondents who had ever experienced medico-legal matters worked significantly longer hours per week (mean = 43.08 hours, SD = 14.91) than those who had never experienced a medico-legal matter (mean = 37.64 hours, SD = 14.29; $t_{(535)} = 4.16$, $p < 0.001$), and respondents who had a current medico-legal matter worked significantly longer hours per week (mean = 46.03 hours, SD = 14.84) than those without a current matter (mean = 39.96 hours, SD = 14.99; $t_{(529)} = 3.14$, $p < 0.01$).

A significantly higher proportion of proceduralists had ever experienced a medico-legal matter (69.3%) than non-proceduralists (53.9%; $\chi^2 = 11.78$, $df = 1$, $p < 0.001$), and a significantly higher proportion of male (65.7%) than female respondents (46.5%) reported experiencing a medico-legal matter ($\chi^2 = 19.44$, $df = 1$, $p < 0.001$). However, there was no difference in the proportion of male and female respondents who worked more than 48 h per week in terms of number of medico-legal matters ($p > 0.05$).

Hours of work was significantly and positively correlated with number of medico-legal matters according to self-report data for both female ($r = 0.25$, $p < 0.001$) and male respondents ($r = 0.15$, $p < 0.01$), and according to data provided by United for both female ($r = 0.25$, $p < 0.001$) and male respondents ($r = 0.16$, $p < 0.01$).

Australian doctors versus those trained in other countries did not differ in number of medico-legal matters, nor did doctors who attended peer review or formal education differ from those who did not attend ($p > 0.05$).

Type of medico-legal matter

Considering respondents' most recent medico-legal matter, according to self-report data 44.5% were claims for compensation, 22.9% were a complaint to an HCC body, 6.1% was general advice, 6.1% was classified as 'other', 4.6% were coronial inquiries, 4.3% medical board inquiries and 4.3% were complaints to the doctor.

Differences between study respondents and non-respondents (United Data)

United staff examined differences in demographic factors and medico-legal matters between survey respondents ($n = 566$) and non-respondents ($n = 673$). Respondents were older (mean =

Table 1. Subject characteristics

Characteristic	n (%)	Mean (SD)
Age (years)	558	53.0 (9.7)
Gender		
Male	365/564 (65)	
Marital status		
Married	466/562 (83)	
Medical degree obtained		
In Australia	454/565 (80)	
In UK/Ireland	40/565 (7)	
In India/Sri Lanka	28/565 (5)	
Other	45/565 (8)	
Hours worked week ⁻¹		40.9 (15.1)
Weeks worked year ⁻¹		46.4 (6.0)
No. doctors in solo practice	110/560 (20)	
Proceduralist	178/565 (32)	
Attendance at peer review (mean sessions per year)	239/559 (42)	8.0 (9.6)
Attendance at formal education (mean hours per year)	531/559 (95)	38.0 (32.3)
Medico-legal experiences of the doctor		
Medico-legal assistance received [†] (self-report data)	329/559 (59)	
Respondents with a current medico-legal matter (self-report data)	71/559 (13)	
Respondents with a past medico-legal matter (self-report data)	295/559 (53)	
GPs who have experienced a major medico-legal matter [‡] (United data)	250/565 (44)	
GPs who have experienced one or more major medico-legal matter (United data)		
Civil claims	145/565 (25.7)	
Unlitigated claims	36/565 (6.4)	
Complaints	87/565 (15.4)	
Medical Board inquiry	32/565 (5.7)	
HIC claims	16/565 (2.8)	
Coroners inquiry	15/565 (2.7)	

HIC, health insurance commission.; [†]A total of 59% of respondents had sought medico-legal assistance, which included specific matters defined here, general advice and matters with other insurance groups.

[‡]A medico-legal matter defined by United as any of the following: civil claim, unlitigated claim, complaint, medical board inquiry, HIC inquiry, disciplinary hearing, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, antidiscrimination inquiry, coroners inquiry, criminal charge.

52.80 years, SD = 9.46) than non-respondents (mean = 51.68 years, SD = 9.87; $t_{(1191)} = 1.99$, $p < 0.05$).

The proportion of females to males who responded (35.8%) was higher than the proportion of females to males who did not respond (28.3%; $\chi^2 = 7.85$, $df = 1$, $p < 0.01$).

Of the doctors who were sent the survey, there was a smaller proportion of proceduralist respondents (31.5%) compared to non-proceduralist non-respondents (38.6%; $\chi^2 = 7.72$, $df = 1$, $p < 0.01$).

There were no significant differences in the proportion of survey respondents experiencing the key medico-legal events (claims, complaints or inquiries) compared to non-respondents ($p > 0.05$).

Level of agreement between self-report data and United data on medico-legal matters

Ninety per cent of GPs who had a current or past medico-legal matter recorded by United recorded a current or past matter in self-report data. Pearson's product-moment correlations showed that there was a significant relationship between total number of current and past medico-legal matters recorded by United, and total number of current and past matters reported by the GPs ($r = 0.36$, $p < 0.001$). However, 34% of GPs who did not have a medico-legal matter recorded by United, did record a matter in self-report data. This was likely due to the fact that respondents were asked to include all matters, either with United or other organizations, and possible over-inclusion referring to a process as a medico-legal matter that United did not regard as such.

Psychological measures

Psychiatric morbidity (General Health Questionnaire)

Those doctors who had ever experienced a medico-legal matter had significantly higher psychiatric morbidity case identification rates than doctors who had never experienced medico-legal matters ($\chi^2 = 5.90$, $df = 1$, $p < 0.005$). Further GHQ results are given in Table 2.

Compared to doctors who had never experienced a medico-legal matter, those who had ever experienced a medico-legal matter reported higher anxiety ($t_{(542)} = 3.24$, $p < 0.005$), greater social dysfunction ($t_{(551)} = 3.17$, $p < 0.005$), and a higher level of depression ($t_{(349)} = 3.21$, $p < 0.001$), and doctors with finalized past matters maintained a higher level of depression than those who had never experienced a medico-legal matter ($t_{(472)} = 2.86$, $p < 0.005$). Table 2 shows further comparisons for past matter only and current matters versus the group who had never sought assistance for a medico-legal matter.

Impairment (Sheehan Disability Scale)

Those doctors who had ever experienced a medico-legal matter had significantly higher disability scores than those who had never experienced a medico-legal matter ($t_{(542)} = 3.24$, $p < 0.005$). As seen in Table 2, male respondents had significantly higher disability scores than female respondents ($t_{(475)} = 2.91$, $p < 0.005$). Those who worked > 48 h week⁻¹ had significantly higher disability scores than those who worked < 36 h week⁻¹ ($t_{(345)} = 2.48$, $p < 0.05$) and those who worked 36–48 h week⁻¹ ($t_{(326)} = 3.86$, $p < 0.001$).

Alcohol use (AUDIT)

As shown in Table 2, of those who met AUDIT criteria for being a potentially hazardous drinker (AUDIT > 8), a significantly higher proportion were male ($\chi^2 = 18.94$, $df = 1$, $p < 0.001$), a higher proportion had ever experienced a medico-legal matter ($\chi^2 = 4.43$, $df = 1$, $p < 0.05$), and a higher proportion worked longer hours (> 48 h week⁻¹; $\chi^2 = 8.67$, $df = 2$, $p < 0.05$). Furthermore, of those who worked longer hours (> 48 h week⁻¹), a higher proportion of men (19.9%) were drinking at a potentially hazardous level ($\chi^2 = 3.54$, $df = 1$, $p < 0.05$).

Age differences were also examined but not found to be significant ($p > 0.05$).

There was a significant positive correlation between total AUDIT scores and SDS scores ($r = 0.19$, $p < 0.001$).

Difference between peer review attendance and proceduralists on morbidity measures

There was no difference in psychiatric morbidity (GHQ) or disability (SDS) or AUDIT scores between those who did or did not attend peer review, and between proceduralists and non-proceduralists ($p > 0.05$).

Personality (EPQ) and measures of psychological morbidity (GHQ, SDS, AUDIT)

Total GHQ scores were significantly correlated with EPQ neuroticism subscale scores ($r = 0.47$, $p < 0.001$), and EPQ introversion subscale scores ($r = 0.21$, $p < 0.001$).

Total SDS scores were significantly correlated with EPQ neuroticism subscale scores ($r = 0.45$, $p < 0.001$), and EPQ introversion subscale scores ($r = 0.24$, $p < 0.001$).

Potentially hazardous drinking scores were significantly correlated with EPQ psychoticism subscale scores ($r = 0.12$, $p < 0.01$), and EPQ neuroticism subscale scores ($r = 0.10$, $p < 0.05$).

Predictors of psychiatric morbidity and potentially hazardous drinking

Psychiatric morbidity (General Health Questionnaire)

Age, years of practice as a GP, and EPQ neuroticism and extraversion/introversion subscale scores were significant confounds and were therefore treated as covariates. These were significant predictors of psychiatric morbidity ($\chi^2 = 80.68$, $df = 4$, $p < 0.001$, Nagelkerke $R^2 = 0.22$). Correct classification rates were 28.8% for GPs with psychiatric morbidity and 93.4% for GPs without psychiatric morbidity (the overall correct classification rate was 76.3%).

As shown in Table 3, a higher proportion of GPs with a current medico-legal matter had psychiatric morbidity than GPs without a current medico-legal matter. Current medico-legal matter significantly predicted psychiatric morbidity. There was improvement in classification of GPs with psychiatric morbidity when

Table 2. Mean total instrument scores

GP Cohort Total n = 566	Gender		Medico-legal Matter (self-report data)				Workload (h week ⁻¹)			
	Female n = 199	Male n = 365	No n = 230	Yes Ever (past and/or current matter) n = 329	Yes Past matter n = 295	Yes Current matter n = 71	<36 n = 186	36-48 n = 179	>48 n = 178	
Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Total GHQ score	3.40(5.18)	3.26(4.84)	3.48(5.36)	2.69(4.25)	3.88(5.72)**	3.36(5.47)	5.60(6.23)*** ¹	3.51(5.24)	2.91(4.85)	3.71(5.36)
SDS Score	4.33(1.97)	4.02(1.68)	4.50(2.09)**	4.02(1.68)	4.54(2.13)***	4.46(2.09)***	4.86(2.27)***	4.22(1.91)	3.96(1.67)	4.77(2.21)*** ²
AUDIT total score	4.40(3.80)	3.19(2.82)	5.07(4.10)***	3.73(3.15)	4.83(4.13)***	4.74(4.08)*	5.16(4.36)*	4.09(3.73)	4.14(3.67)	5.02(3.93)* ¹
GHQ case psychiatric morbidity GHQ >4	27%	23%	28%	21%	30%*	26%	45%***	27%	22%	31%
AUDIT case alcohol usage risk ≥ 8	12%	3%	16%***	8%	14%*	11%	23%***	9%	8%	18%*** ¹

AUDIT, Alcohol Use Disorders Identification Test; GHQ, General Health Questionnaire; SDS, Sheehan Disability Scale.; ¹Current matter significantly higher compared to past matter (p < 0.05); ² >48 h score was significantly higher compared to both other workload groups.; *p ≤ 0.05, **p < 0.005, ***p ≤ 0.001 (compared to no medico-legal matter).

Table 3. Binary logistic regressions: current medico-legal matters as predictors of psychiatric morbidity (GHQ case identification) and potentially hazardous drinking (AUDIT case identification)

	Yes %		No %		χ^2	df	p	Nagelkerke R ²	Current Medico-legal matter		Overall classification rate (%)	Exp (B) (current medico-legal matter)	
	GHQ case identification	AUDIT case identification	GHQ case identification	AUDIT case identification					Correct classification rate for case identification- %	Yes		No	Yes
GHQ case identification	44.8	23.6	15.32	2	0.0005	0.26	32.6	91.8	76.1	2.09	0.63		
AUDIT case identification	22.9	9.2	12.73	2	0.002	0.20	8.8	99.3	88.9	5.49	1.80		

AUDIT, Alcohol Use Disorders Identification Test; GHQ, General Health Questionnaire.

adding current medico-legal matter as a predictor of psychiatric morbidity. Furthermore, the exponential beta (odds ratios) statistics in Table 3 indicate that GPs who had a current medico-legal matter were more likely to have psychiatric morbidity than those without a current medico-legal matter.

Potentially hazardous drinking (AUDIT)

Gender, years of practice as a GP, hours worked per week, and EPQ psychoticism and neuroticism subscale scores were significant confounds and were therefore treated as covariates. These were significant predictors of potentially hazardous drinking ($\chi^2 = 41.17$, $df = 5$, $p < 0.001$, Nagelkerke $R^2 = 0.16$). Correct classification rates were 1.8% for GPs with potentially hazardous drinking and 99.8% for GPs without potentially hazardous drinking (the overall classification rate was 88.5%).

As shown in Table 3, a higher proportion of GPs with a current medico-legal matter demonstrated potentially hazardous drinking than GPs without a current medico-legal matter. Current medico-legal matter significantly predicted potentially hazardous drinking. There was improvement in classification of GPs with potentially hazardous drinking when adding current medico-legal matter as a predictor of potentially hazardous drinking. Furthermore, the exponential beta (odds ratios) statistics shown in Table 3 indicate that GPs who had a current medico-legal matter were more likely to have potentially hazardous drinking than those without a current medico-legal matter.

Discussion

We have explored differences in psychological morbidity in Australian GPs, comparing those who have and have not experienced medico-legal matters, and found that there is an increase in psychiatric morbidity (GHQ), impairment in function (SDS) and alcohol use in men (AUDIT), for doctors who currently have a medico-legal matter. As in other studies [10-14], procedural doctors and those who work more hours per week are more likely to have had a medico-legal matter.

Female general practitioners in the present study had lower levels of psychological morbidity even after considering hours of work. This is contrary to previous Australian studies, which have found female doctors to have higher GHQ case identification rates (Table 4) [24,32]. However, the present sample of GPs in general had lower psychiatric morbidity as compared to interns and hospital consultants.

In view of the high prevalence (45%) of GPs experiencing psychiatric morbidity with a current medico-legal matter, there is an urgent need to investigate avenues to assist doctors. This may have benefits for the practitioner, the patient, the health system and the insurer. Interventions to consider

Table 4. Prevalence of psychiatric morbidity in Australian doctors

	%	Psychiatric morbidity prevalence (GHQ >4)		Type
		Male%	Female%	
Study respondent	27	28	23	GP
Study respondent current matter	45	49	31	GP
Bruce <i>et al.</i> (2003) [33]	41	39	44	Hospital consultant
Willcock <i>et al.</i> (2004) [24]	37	33	41	Intern

GHQ >4, General Health Questionnaire-28, cut-off >4; GP, general practitioner.

include the provision of appropriate services and education of the workforce regarding the different medico-legal processes, psychological reactions, negative coping strategies such as overuse of alcohol, and the availability of supports and positive coping strategies.

It was hypothesized that peer review and formal education [14] would identify doctors who are better engaged with their peers and less prone to adverse outcomes. However, comparisons of doctors who attended peer review or formal education with those who did not, found no difference in the occurrence of medico-legal matters or in the presence of psychiatric morbidity, disability or potentially hazardous alcohol drinking.

Limitations

The study is not without limitations. First, the 566 respondents represent only 1% of Australian GPs (2003 workforce data) [33] and they differ in demographic and work practice measures from the 2003 workforce in which mean age of GPs was 45.7 years (present sample, mean age = 53 years), 32.6% were female in 2003 (present sample, 35%) and GPs worked an average 44.2 h week⁻¹ (present respondent sample, 40.9 h).

Second, the response rate of 45.7% to the survey is comparable to many doctor studies, but does leave room for responder bias. We considered this in our comparison of responders and non-responders from the United data, and although there were some statistical demographic differences, these were not deemed major, and importantly there were no differences in the major groups of medico-legal matters between responders and non-responders.

Third, two data sets for medico-legal matters were utilized, and each had their strengths and weaknesses. Self-report data may have been more inclusive than

United data, in that it would include matters with other insurers, but relying on responders to classify the type of medico-legal matter was difficult. At times, matters were included in self-report data that would not have been considered a medico-legal matter by United definition, and thus the self-report data was over-inclusive.

Fourth, seriousness of matters was not classified in the present paper because the number of each type of matter was small when broken down. The seriousness of a complaint from the point of view of regulators (HCC body and Medical Board) is from the patient's perspective rather than the outcome for the doctor. The present study considered the impact on the doctor, which varies depending on many factors in the doctor, for example personality, supports, the doctor's perception of the seriousness of the matter, and the actual legal process (e.g. the disciplinary process can be prolonged and uncertain, whereas the resolution process can be relatively brief and unencumbered by complex legal intervention). The mere fact of a complaint, however, can be sufficient to generate anxiety.

Fifth, as a cross-sectional study we are unable to comment on the direction of causality. A longitudinal study is planned to resolve the chicken-and-egg aspect and longitudinal effects, and address the causality of psychological morbidity.

Conclusions

The present study shows that Australian GPs who have a current medico-legal matter, have increased psychiatric morbidity, disability, and in male GPs increased potentially hazardous alcohol use.

Education of medical students as well as pre-vocational and vocational training about the nature and impact of medico-legal matters is important in improving doctors' health and thereby patient care. Enhancing individual coping strategies and the

encouragement of systemic change are hypothesized as measures to further improve the outcome for the doctor and patient.

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CHAPTER 6: Change in practice due to medico-legal concerns in the GP study

Nash L, Walton M, Daly M, Johnson M, Van Ekert E, Walter G, Willcock S, Tennant

C. GPs' concerns about medicolegal issues – how it affects their practice.

Australian Family Physician 2009;38:66-70

GPs' concerns about medicolegal issues how it affects their practice

The study identified GPs' concerns about medicolegal issues, including the impact of litigation on their practice. The study found that GPs are concerned about medicolegal issues and that these concerns affect their practice. The study also found that GPs are concerned about the impact of litigation on their practice. The study identified GPs' concerns about medicolegal issues, including the impact of litigation on their practice. The study found that GPs are concerned about medicolegal issues and that these concerns affect their practice. The study also found that GPs are concerned about the impact of litigation on their practice.

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GPs' concerns about medicolegal issues

How it affects their practice

Background

General practitioners' concerns about medicolegal issues have been shown to influence the practice of medicine. This research looks at GPs' beliefs about medicolegal issues and how medicolegal concerns affect their practice.

Methods

A descriptive comparative design was used. A cross sectional self report survey was sent to 1239 GPs, 566 responded (46% response rate). Responses were considered as a group, and then comparisons were made between those who had experienced a medicolegal matter and those who had not. This data was sourced from surveys and medicolegal insurer records.

Results

General practitioners with previous medicolegal experiences were more likely than their colleagues to report believing the law required them to make perfect decisions and that medicolegal factors made them consider early retirement from medicine. They were also less likely to believe that inadequate communication is a factor in most complaints. More than half the GPs reported having made practice changes due to medicolegal concerns in the following areas: test ordering (73%); specialist referrals (66%); systems to track test results (70%); and communication of risk to patients (68%). Other changes were reported less frequently.

Discussion

This study found that GPs' concerns about medicolegal matters impact on their practise of medicine. While greater awareness of medicolegal issues may lead to positive impacts, the negative impact of their concerns is that some changes arise from anxiety about medicolegal matters rather than from the exercise of good clinical judgment.

■ **General practitioners' concerns about a potential complaint, inquiry or lawsuit influences their practise of medicine in potentially positive ways such as developing audit procedures and better patient explanations; but also negatively such as increased prescribing of drugs, referrals and diagnostic testing.¹⁻⁹ These impact on the quality and cost of health care.**

Defensive medicine occurs when practice is governed by the fear of medicolegal actions rather than sound medical judgment. A review of the effects of the medical liability system in Australia, the United Kingdom and the USA, found evidence of defensive medicine in the UK and the USA, but a lack of Australian data.¹⁰ In a UK study of 500 randomly selected GPs with 300 respondents (60% response rate), 98% of respondents reported making some change in reaction to the possibility of a complaint,⁵ including increased referral (64%), increased follow up (64%), increased diagnostic testing (60%), prescribing of unnecessary drugs (29%) and avoiding treatment of certain conditions (42%). Studdert's⁷ 2003 survey to 1333 emergency doctors, radiologists and surgeons in Pennsylvania with 824 respondents (65% response rate), found that 92% of respondents modified diagnostic procedures and/or referring because of the threat of malpractice liability, and 43% reported using imaging when clinically unnecessary.

A Canadian survey of 148 primary physicians with 72 respondents (response rate 49%) found that 50% of respondents avoided certain procedures,⁴ as did 28% of sued Chicago doctors in the 1980s.⁹ However, more information was provided to patients by 80% of the Canadian respondents⁴ and by 50% of UK GPs.⁵

The USA Common Good Fear of Litigation study interviewed 300 doctors, 200 nurses and 100 administrators. Doctors reported an increase in test ordering (79%), referrals (74%), and medication prescribing (41%); with near unanimous agreement that this increased health care costs.⁸

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Table 1. Medicolegal history of the respondents

Characteristic	No. (%)
Self reported medicolegal experiences of GPs (n=559)*	
Medicolegal assistance ever received	329 (59)
Respondents with a current medicolegal matter	71 (13)
Respondents with a past medicolegal matter	295 (53)
GPs who have experienced one or more of the following medico-legal matters (UNITED data, n=565)	250 (44)
Civil claims	145 (26)
Unlitigated claims**	36 (6)
Complaints	87 (15)
Medical Board inquiry	32 (6)
HIC claims	16 (3)
Coroners inquiry	15 (3)
<p>Note: A medicolegal matter included the following: civil claim, unlitigated claim, complaint, Medical Board inquiry, HIC inquiry, disciplinary hearing, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, antidiscrimination inquiry, coroners inquiry, criminal charge</p>	
<p>* 59% of respondents had sought medicolegal assistance for one of the above medicolegal matters, and this also included matters with other insurance groups; some respondents may have included matters that may not have been considered by UNITED as a matter</p>	
<p>** Unlitigated claim refers to a claim in which civil proceedings have not been commenced. The claim is made by the patient, or by a solicitor or another person instructed by the patient</p>	

Methods

A descriptive comparative design was used. A cross sectional self report survey was administered to GPs in May 2006. Responses were considered as a group, and comparisons made between those who had experienced a medicolegal matter and those who had not.

Sample

A total of 1499 GPs were selected from a list of all GPs insured with UNITED Medical Protection (UNITED), then the largest Australian medical insurance company (now Avant). The final sample included all 530 GPs classified by UNITED as proceduralists, and a random selection of 970 nonprocedural GPs from a total data base of 6479. Power analysis considering change in the psychological morbidity measures¹¹ determined the sample size required. UNITED insured 30% of Australian GPs.¹³

A two stage approach was used to ensure protection of confidential data. All selected GPs were informed of the study, including the use of historical data relating to medicolegal matters held by UNITED, and asked to complete a form indicating whether or not they wished to participate; 266 GPs (17%) chose not to participate.

Data and procedure

Data came from two sources. The survey data included demographic information, work practice details, current and past medicolegal matters with any medical defence organisation, and attitudes and change of practice in response to medicolegal concerns. The posted survey included a reply paid envelope, with a reminder letter 4 weeks later. The second data source was the UNITED database information on medicolegal matters for GPs who agreed to participate.

Measuring medicolegal matters

Medicolegal matters classification used UNITED criteria, with the survey asking about: compensation claim for damages, health care complaints body complaint, Medical Board inquiry, disciplinary hearing, Health Insurance Commission (HIC) inquiry, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, Antidiscrimination Board inquiry, Coronial inquiry, criminal charge and 'other'.

Respondents were asked whether they had ever received assistance from any medical defence organisation in any of these

medicolegal matters and whether the matters were 'current' or 'past' (closed).

Beliefs and changes to practice due to concerns about medicolegal issues

A previously piloted questionnaire was used regarding GPs' beliefs and understanding of the law as it relates to medicolegal issues.⁶ Questions about changes in practice were drawn from key items in the literature. Respondents were asked: 'Do concerns about medical negligence/complaint cause you to...' and a series of items were listed relating to medical practice (Table 1).

Ethical considerations

Approval for the study was granted through Northern Sydney Central Coast Area Health Service and the University of Sydney Ethics Committees, and the UNITED Board. The survey covering letter indicated that de-identified data relating to medicolegal matters held by UNITED would be issued to the study team if the survey was returned.

Results

Respondent demographic characteristics and experience of medicolegal matters

Of the 1239 GPs surveyed, 566 responded (46% survey response rate, and 566/1499, 38% overall response rate); mean age was 53 years (SD=9.7); and 65% were male. Proceduralist GPs accounted for 32% of respondents. Mean hours worked per week was 40.9 hours (SD=15.1) and mean weeks worked per year was 46.4 weeks (SD=6.0). The medicolegal history of respondents is shown in Table 1.

Differences between study respondents and nonrespondents from UNITED data

Respondents were marginally older (M=52.80 years, SD=9.46) than nonrespondents (M=51.68 years, SD=9.87) ($t_{(1191)}=1.99$, $p<0.05$) and there was a higher proportion of females to males for respondents (35.8%) compared to nonrespondents (28.3%) ($\chi^2=7.85$, $df=1$, $p<0.01$).

There were no significant differences in the proportion of survey respondents experiencing the key medicolegal events (claims,

Table 2. Beliefs about medicolegal issues (n=554)

Statement	% Agree* Total cohort (n=554)	% Agree MLM (n=326)	% Agree No MLM (n=228)	Significance**#
All doctors make mistakes	97	97	97	ns
Inadequate communication is a factor in most complaints	93	90	97	$\chi^2(1, n=550) = 8.52$, $p=0.004$
My awareness of risks of medical negligence has increased in recent years	92	93	91	ns
I feel comfortable discussing my mistakes with my colleagues	76	77	74	ns
Professional standards should be set solely by the medical profession	70	69	71	ns
Doctors are encouraged to report their medical errors	70	71	70	ns
The law requires me to make perfect medical decisions#	64	68	59	$\chi^2(1, n=548) = 4.32$, $p=0.038$
Medicolegal factors make you consider retiring early from medicine	48	52	43	$\chi^2(1, n=542) = 4.30$, $p=0.038$
Medical mistakes are rare	21	19	24	ns
An apology to a patient implies an admission of liability	16	17	14	ns
Patients are likely to sue a doctor who tells them about a mistake	14	15	11	ns
Only unprofessional or incompetent doctors get sued	2	2	3	ns

Note: MLM = medicolegal matter which included the following: civil claim, unlitigated claim, complaint, Medical Board inquiry, HIC inquiry, disciplinary hearing, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, antidiscrimination inquiry, coroners inquiry, criminal charge

* Recoding of data into binary scoring 1,2=disagree and 3,4=agree

** Chi-square procedures were used to compare respondents with a medicolegal matter who agreed with the statement to those without a medicolegal matter who agreed with the statement.

For all these statements, comparisons were also done between solo and nonsolo GPs. There were no statistically significant differences, however the following approached significance: 72% of solo GPs agreed that the law required them to make perfect medical decisions compared with 62% of nonsolo GPs ($\chi^2(1, n=548) = 3.63$, $p=0.057$)

Table 3. Practice changes due to medicolegal concerns (n=549)

Practice change	% who changed behaviour more than usual			Significance**#
	Total cohort (n=549*)	With MLM (n=325)	With no MLM (n=224)	
Order tests	73	74	73	ns
Refer to specialists	66	66	66	ns
Avoid a particular type of invasive procedure	49	47	53	ns
Avoid particular obstetric procedure (60% stated not applicable)	49	49	49	ns
Prescribe medication	19	23	15	$\chi^2(1, n=540) = 5.62, p=0.018$
Put systems in place to track test results	70	69	71	ns
Provide communication of risk to patients	68	67	70	ns
Put systems in place to audit practice	47	50	43	ns
Put systems in place to identify nonattenders	36	36	36	ns

Note: MLM = medicolegal matter which included the following: civil claim, unlitigated claim, complaint, Medical Board inquiry, HIC inquiry, disciplinary hearing, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, antidiscrimination inquiry, coroners inquiry, criminal charge

* Recoding of data into binary scoring of less than usual, usual = 1, more than usual = 2

** Chi-square procedures were used to compare respondents with a medicolegal matter who agreed with the statement to those without a medicolegal matter who agreed with the statement

For all these practice changes, comparisons were also done between solo and nonsolo GPs. There was one significant finding: 61% of solo compared with 72% of nonsolo GPs reported that medicolegal matter concerns had caused them to put systems in place to track test results, more than usual ($\chi^2(1, n=544) = 4.39, p=0.036$)

complaints or inquiries) compared to nonrespondents according to UNITED data.¹¹

Respondent beliefs about medicolegal issues

Table 2 sets out statements about medicolegal issues and the percentage of respondents who agreed with the statements. Table 3 reports about changes in practice behaviour due to concerns about medical negligence and complaints, comparing those with and without a history of medicolegal matters, and solo and nonsolo practitioners.

Discussion

This sample of GPs, like other surveyed doctors, had a high level of concern about medicolegal issues, regardless of whether or not they had experienced a medicolegal matter themselves. There was near universal agreement (97%) that doctors make mistakes, yet almost two-thirds (64%) believed that the law required them to make perfect decisions. General practitioners who had experienced a medicolegal matter were significantly more likely to believe that the law required them to make perfect decisions than those who had not. However, the High Court of Australia decision in *Rogers v Whitaker* said: 'The law imposes on a medical practitioner a duty to exercise reasonable care and skill in the provision of professional advice and treatment'.¹⁴ The law therefore does not require perfection, just what is reasonable.

Twenty-one percent of respondents believed that medical mistakes are rare. This is inconsistent with findings that 16.6% of admissions to Australian hospitals were associated with an 'adverse event' resulting in disability or longer stay.¹⁵

Some respondents believed that an apology to a patient implied an admission of liability (16%), and that patients are more likely to sue a doctor who tells them about a mistake (14%). A 1997 study of legal anxieties associated with mistakes concluded that reluctance to disclose a mistake to a patient may in part be due to the 'culture of infallibility' in which patient care errors may be viewed as character flaws.¹⁶

Ninety-three percent of respondents agreed that inadequate communication was a factor in most complaints. Interestingly, among those who had experienced a medicolegal matter, agreement with this statement was significantly lower compared with those who had not. Could the importance attributed to communication by 97% of those who had not experienced a medicolegal matter be somewhat protective for them, or do some of those who have experienced a matter feel that communication was not a relevant issue in their particular case?

Nearly half (48%) of the respondents considered retiring early because of medicolegal factors, again higher for those who had experienced a medicolegal matter. This accelerated retirement may contribute to workforce problems at a time when most medical disciplines have national shortages.

This study found a range of practice changes due to concerns about medical negligence and complaints. However, there was little evidence of differences in these changes between GPs who had and had not experienced a medicolegal matter. The costly issue of increased test ordering by 73% of respondents was similar to the USA (79%),⁸ the UK (50%),⁵ and Chicago (62%).⁹ Likewise, increased specialist referrals in 66% of our respondents is similar to the USA

(74%)⁸ and the UK (50%).⁵ Our sample had a similar rate of avoiding a particular type of invasive procedure (49%) as in Canada (50%).⁴ Avoidance of obstetric procedures (in those where this was applicable) occurred in 49% of respondents, which has workforce implications, particularly in rural and remote areas. Unnecessary prescribing is both expensive and potentially dangerous. This occurred in 19% of our respondents, but was statistically higher for respondents who had experienced a medicolegal matter. However, this was less than in the USA, in which 41% prescribed more medication for fear of litigation.⁹

These practice changes, although driven by concerns about medicolegal issues, would provide better outcomes for some patients. For example, ordering of tests may prove to be appropriate medically, or specialist referral may enable better treatment in that particular context. We also found GPs made positive systemic changes due to medicolegal concerns. An increase in the communication of risk to patients in 68% was reported, compared with the Canadian study (80%)⁴ and the UK (50%).⁵ Systems to track test results, identify nonattenders and practice audit were all increased, and can be seen as positive changes which may improve patient safety.

Limitations of this study

Our respondent sample represents 3% of Australian GPs (2005 workforce data)¹³ but was similar to the 2005 workforce data in gender distribution and hours of work. Women made up 35.8% of the respondents (36.5% in the 2005 workforce data). Our respondent sample mean hours of work per week was 40.9 hours (39.9 hours per week of the 2005 workforce data).

The response rate, although similar to other studies, leaves the possibility that those who responded are in some way biased. However, this was addressed by comparing the profile of the nonresponders to the responders and there were no major differences.

Two data sets for medicolegal matters were analysed, and each had their strengths and weaknesses. Self report data was more inclusive than UNITED data, in that respondents would have included matters with other medical insurers (or no medical insurer). However, respondents may have been overinclusive in the self report data, including instances that may not have been considered to be medicolegal matters according to the UNITED criteria.

A longitudinal study is proposed to compare these baseline measures with changes over time for GPs who have a medicolegal matter. This will answer the 'chicken and egg' question of whether medicolegal matters are the cause of some of these attitudes, or are the effect of these issues.

Conclusion

This study found that GPs' concerns about medicolegal matters impact on their practise of medicine. While greater awareness of medicolegal aspects of practice may lead practitioners to exercise greater care and attention in treating their patients, the negative impact of their concerns is that some changes arise from anxiety

about medicolegal matters rather than from the exercise of good clinical judgment. The consequence is that health care delivery will incur more unnecessary cost, and the increase in prescription of drugs and procedures may add additional risk to patients (although for some this may improve outcome). Empirical studies such as this highlight the need for targeted training in medicolegal aspects of medical practice so that doctors may better understand how such issues impact on their judgment and decision making.

Conflict of interest: none declared.

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CHAPTER 7: Personality of doctors and association with medico-legal matters

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Personality, gender and medico-legal matters in medical practice

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Objectives: The aim of this paper was to explore the relationship between the personality traits of Australian General Practitioners (GPs) and their gender, work practice arrangements, and history of medico-legal matters.

Methods: A cross-sectional self report survey was mailed to 1239 GPs. There were 566 respondents (45.7% response rate to survey). The survey assessed personality traits (using the Eysenck Personality Questionnaire), demographic and practice information, and history of medico-legal matters with any medical defence organization. The number and type of medico-legal matters was also extracted from the UNITED Medical Protection database.

Results: Male respondents had significantly higher psychoticism scores than females ($p < 0.001$), and females had significantly higher neuroticism scores than males ($p < 0.01$), as in community samples. However, for GPs who worked more than 48 hours per week, there were no gender differences in personality trait scores. Solo practitioners and non-solo practitioners did not differ on personality scores. Proceduralists and non-proceduralists did not differ on personality scores. However, a higher proportion of proceduralists experienced a medico-legal matter than non-proceduralists ($p < 0.001$). There was a positive correlation between extraversion scores and doctors who attended peer review ($p < 0.001$). There was no difference in the numbers of medico-legal matters for doctors who attended peer review. Males who self reported a medico-legal matter had higher neuroticism scores than the males who did not report medico-legal matters. This was not the case for females. For males, this pattern was not replicated when considering data from UNITED.

Conclusions: The known demographic and practice factors that differ for doctors having a medico-legal matter are replicated here – being male, a proceduralist and working longer hours. There is not a consistent pattern regarding personality traits and medico-legal matters.

Key words: doctors, general practitioners, medico-legal matters, personality.

Does the personality of a doctor increase the likelihood of doctors having a complaint, law-suit or inquiry? We know that certain demographic factors and medical specialties correlate with a higher incidence of medico-legal matters,¹⁻⁴ with middle-aged male doctors who undertake interventional practice and work long hours having higher rates of medico-legal matters. However, the influence of personality on the incidence of medico-legal matters has not been previously explored.

There is a correlation between trait neuroticism and mental health problems in doctors,⁵⁻⁷ including high rates of depression, suicide, and alcohol and drug abuse.⁵ People who are stressed, depressed, alcohol dependent, dissatisfied or exhausted are less likely to provide the same

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standards of care as those who are not.⁸ Negative patient outcomes have been reported if doctors are fatigued, overworked, depressed, anxious, or using excess alcohol.⁹ Do doctors with a high neuroticism score have increased likelihood of poor performance and associated medico-legal matters?

Results from pre-registration house officers in England¹⁰ found that females scored significantly lower on the extraversion and psychoticism subscales than men, and significantly higher on the neuroticism subscale of the Eysenck Personality Questionnaire (EPQ). High neuroticism scores were linked with increased psychological morbidity.

An Australian study, also using the EPQ, followed final year postgraduate medical students through their intern year.¹¹ The only gender difference was that females had higher neuroticism scores. High neuroticism scores were linked with higher psychological morbidity. However, EPQ scores did not predict objective performance measures (Willcock S, Daly M, Tennant C, unpubl. data, 2002).

A small study of doctors who had a complaint before the New South Wales Health Care Complaints Commission found that respondents scored significantly higher than the general population on the psychoticism subscale of the EPQ ($p < 0.001$).¹² Do doctors who have high psychoticism scores (representing more 'tough minded' doctors who, at the extreme, lack empathy) have more medico-legal matters than doctors who do not rate highly on this subscale?

This study aims to investigate the personality profile of Australian General Practitioners (GPs) considering gender, work practice variables (e.g. hours of work, proceduralist or not) and whether or not the respondents had experienced medico-legal matters. We hypothesized that male doctors, proceduralists and those who worked long hours would have experienced more medico-legal matters. With consideration to these variables, we then hypothesized that doctors who score significantly higher on the neuroticism or psychoticism subscales of the EPQ were more likely to have had medico-legal matters. Other aspects of this study relating to psychological morbidity of doctors who have and have not experienced a medico-legal matter have been described elsewhere.¹³ It was anticipated that some of the findings may also be relevant for doctors working in various specialties, including psychiatry.

METHOD

A descriptive comparative design was used. A cross-sectional self report survey was administered to GPs in May 2006.

Sample

A total of 1499 GPs were selected from a list of all GPs who were insured in 2006 with the Australian medical defence organization, UNITED Medical Protection ('UNITED'), the largest medical insurer in Australia at that time (it merged with another company and was renamed Avant in 2007). The final sample included all GPs classified as proceduralists ($n = 530$), and a random selection of 970 non-procedural GPs (as defined by UNITED) from a total of 6479. All selected GPs were informed of the study by mail, and were asked to complete and return a form noting their willingness to participate in the study. Two hundred and sixty GPs (17%) declined, leaving 1239 GPs who were sent the survey, with ultimately 566 respondents (566/1499; 38% overall response rate and 45.7% survey response rate).

Data collection and procedures

The data came from two sources: (i) a cross sectional survey that assessed personality traits (using the EPQ), demographic and work practice information, and history of a medico-legal matter with any medical defence organization; (ii) information extracted from the UNITED Medical Protection database in which medico-legal matters were documented. Confidentiality and anonymity were maintained.

The survey was posted to GPs and included a reply-paid envelope. Four weeks later, a reminder letter was issued, again requesting participation and return of the survey.

Measuring personality using the Eysenck Personality Questionnaire

The EPQ is a self-report questionnaire and measures three major dimensions of personality: neuroticism, psychoticism and extraversion, which represent personality traits, not psychiatric diagnoses. Neuroticism is sometimes referred to as 'emotionality' and measures emotional stability or sensitivity. Psychoticism measures 'tough-mindedness' and, at the extreme, a lack of empathy. The extraversion subscale determines if the person is outgoing and talkative. Scores of the cohort are compared with community sample scores. The EPQ-Revised Short Scale questionnaire was used.¹⁴

Measuring medico-legal matters (self-report and UNITED data)

The following medico-legal matters were listed in the questionnaire: a claim for compensation for damages, complaint to a healthcare complaints body, medical board inquiry, disciplinary hearing, Health Insurance Commission (HIC) inquiry, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, anti-discrimination board inquiry, coronial inquiry, criminal charge and 'other'. Respondents were asked

whether they had ever received assistance from any medical defence organization in any of the above medico-legal matters, and if these were 'current' or 'past' (closed). The same classification of matter was used by UNITED.

Statistical analysis

Statistical analysis was undertaken using SPSS (SPSS Inc, Chicago, IL, USA). Pearson product-moment correlations were performed to assess bivariate associations, and differences between categorical variables were measured using χ^2 tests. Differences between two or more groups on a single variable were assessed using independent samples t-tests and one-way analysis of variance, respectively. Multivariate analysis of covariance was performed (controlling age as a covariate) to examine the main effects and interactions between hours worked per week and number of current/past medico-legal matters (according to both self-reported data and data provided by UNITED) on the three personality factors (psychoticism, extraversion, and neuroticism). The multivariate analysis of co-variances were undertaken separately for males and females. Tukey honestly significant differences (HSD) post-hoc comparisons were performed where statistical differences were found. The critical alpha (α) level was set at 0.05 for statistical significance.

Doctors' responses were considered as a group, and then comparisons were made between genders, hours of work groups, peer review attendance or not, solo and non-solo, and those who had experienced a medico-legal matter and those who had not.

Ethical considerations

Approval was granted through the Northern Sydney Central Coast Area Health Service and the University of Sydney Ethics Committees, and the UNITED Board. Anonymity and confidentiality of UNITED membership and data were protected at all times, as were survey responses. The survey contained a covering letter detailing that de-identified data relating to medico-legal matters held by UNITED would be issued to the study team if the survey data was returned. The study was funded from a Northern Sydney Health research grant and the McGeorge Bequest through University of Sydney.

RESULTS

Respondent demographic and practice characteristics and experience of medico-legal matters

There were 566 respondents. The mean age was 53 years (SD = 9.7), and 65% were male. Proceduralist GPs accounted for 32% of respondents. Peer review was attended by 42%, with a mean of eight sessions per year (SD = 9.6). Mean hours per week worked was 40.9 hours (SD = 15.1).

Type of medico-legal matter

Table 1 describes the type of medico-legal matter according to UNITED data.

There were no significant differences in the proportion of respondents and non-respondents experiencing the key medico-legal events of claims, complaints or inquiries ($p > 0.05$).

Personality differences considering gender and practice variables

Gender

Males had significantly higher psychoticism scores (mean = 2.42, SD = 1.48) than females (mean = 1.81, SD = 1.30) ($t_{(546)} = 4.84$, $p < 0.001$), and females had significantly higher neuroticism scores (mean = 4.40, SD = 3.11) than males (mean = 3.64, SD = 3.20) ($t_{(546)} = 2.68$, $p < 0.01$).

Hours of work

Due to the gender differences in hours worked, this personality comparison was done for males and females (Table 2). Hours of work was divided into three groups: part-time work of less than 36 hours, full-time work of between 36 and 48 hours, and an 'overtime' group of more than 48 hours per week. (These

Table 1: Medico-legal history of the respondents

<i>Self-reported medico-legal experiences of GPs (n = 559)</i>	<i>No. (%)</i>
Medico-legal assistance received	329 (59%)
Respondents with a current medico-legal matter	71 (13%)
Respondents with a past medico-legal matter	295 (53%)
GPs who experienced one or more of the following medico-legal matters with UNITED (UNITED data, n = 565)	250 (44%)
Civil claims	145 (25.7%)
Unlitigated claims	36 (6.4%)
Complaints	87 (15.4%)
Medical Board inquiry	32 (5.7%)
HIC claims	16 (2.8%)
Coroners inquiry	15 (2.7%)

Note: A medico-legal matter included the following: civil claim, unlitigated claim, complaint, medical board inquiry, HIC inquiry, disciplinary hearing, hospital dispute, pharmaceutical services inquiry, Medicare fraud inquiry, antidiscrimination inquiry, coroners inquiry, and criminal charge. Fifty-nine percent of respondents had sought medico-legal assistance for one of the above medico-legal matters, and this also included matters with other insurance groups; some respondents may have included matters that may not have been considered by UNITED as a matter.

Table 2: Eysenck Personality Questionnaire subscales by gender and hours of work

Hours worked	EPQ Subscales	Male			Female		
		n	Mean	SD	n	Mean	SD
Part-time (<36 hours /week)	Psychotism	61	2.41	1.66	119	1.78**	1.17
	Extraversion	59	4.25	3.00	115	6.03***	3.36
	Neuroticism	61	3.89	3.60	118	4.47	3.00
Full-time (36–48 hours/week)	Psychotism	128	2.51	1.45	45	1.76***	1.32
	Extraversion	126	6.17	3.62	46	7.04	3.51
	Neuroticism	129	3.57	3.36	44	4.00	3.00
Over-time (> 48 hours/week)	Psychotism	154	2.38	1.46	22	2.36	1.84
	Extraversion	152	5.79	3.45	22	6.05	3.42
	Neuroticism	154	3.62	2.90	21	4.24	3.75

*** $p < 0.001$, ** $p < 0.05$ comparisons of male and female scores.

hours of work were chosen for two reasons: they are logical from an hours of work point of view, and they also divided roughly into thirds for comparisons.)

Peer review

There was no difference in numbers of medico-legal matters for doctors who attended peer review ($p > 0.05$). However, there was a positive correlation between extraversion scores and doctors who attended peer review ($r = 0.17$, $p < 0.001$).

Procedural practice

A higher proportion of proceduralists experienced a medico-legal matter (69.3%) than non-proceduralists (53.9%) ($\chi^2 = 11.78$, $df = 1$, $p < 0.001$). However, proceduralists and non-proceduralists did not differ on personality scores ($p > 0.05$).

Solo practice

Solo practitioners and non-solo practitioners did not differ on personality scores ($p > 0.05$).

Male and female GPs' experience of medico-legal matters and Eysenck Personality Questionnaire considering age and hours worked per week

A significantly higher proportion of males (65.7%) than females (46.5%) reported experiencing a medico-legal matter ($\chi^2 = 19.44$, $df = 1$, $p < 0.001$). Due to other gender differences previously reported in this paper with respect to hours worked per week and personality scores, the data for males and females were analysed separately.

GP experience of medico-legal matters was categorically divided into three groups: GPs with no medico-legal matters, one matter, and two or more matters.

The data were analysed further according to self-report data and data provided by UNITED.

A 3 (hours worked per week: >48 hours/week, 36–48 hours/week, <36 hours/week) \times 3 (medico-legal matters: zero, one, two or more) between-subjects multivariate analysis of covariance was performed on the psychoticism, extraversion and neuroticism factors.

Age was entered as a covariate because there was a significant difference between the three groups of hours worked per week ($F_{2,544} = 5.72$, $p = 0.003$). Also, respondents who had experienced a medico-legal matter were significantly older (mean = 53.96 years, $SD = 9.25$) than those who had never experienced a medico-legal matter (mean = 51.26 years, $SD = 9.84$) ($t_{(549)} = 3.28$, $p < 0.001$).

Males: Self-report data

Of the male respondents, 107 reported no history of a medico-legal matter, 105 reported one matter, and 106 reported two or more matters.

After analysis with Wilks' criterion, there was a significant main effect for hours worked per week on the combined personality factors (Wilks' $\lambda = 0.95$; $F_{6,612} = 2.73$, $p = 0.013$), but not the number of medico-legal matters ($p > 0.05$). There was also a significant interaction between hours worked per week and number of current/past medico-legal matters on the combined personality factors (Wilks' $\lambda = 0.92$; $F_{12,810} = 2.06$, $p = 0.017$).

On inspection of individual personality factors, there was a main effect for hours worked per week on the extraversion factor ($F_{2,308} = 8.30$, $p = 0.0003$). Tukey's HSD post-hoc comparisons showed that those who worked less than 36 hours per week had significantly lower scores (mean = 4.07, $SD = 2.99$) than those who worked 36–48 hours per week (mean = 6.11, $SD = 3.64$).

($p = 0.001$), and those who worked more than 48 hours per week (mean = 5.79, SD = 3.41) ($p = 0.004$).

There was also a main effect for number of medico-legal matters on the neuroticism factor ($F_{2,308} = 5.31$, $p = 0.005$). Tukey HSD post-hoc comparisons showed that those who had no medico-legal matters had lower neuroticism scores (mean = 2.95, SD = 2.96) than those who had one medico-legal matter (mean = 4.17, SD = 3.30) ($p = 0.014$) and those who had two or more medico-legal matters (mean = 3.98, SD = 3.33) ($p = 0.038$).

Males: UNITED data

According to UNITED data, the breakdown of medico-legal matters produced different sample sizes in which 157 respondents had no recorded medico-legal matter, 80 had one matter, and 91 had two or more matters.

The only significant finding was a main effect for hours worked per week on the extraversion factor ($F_{2,318} = 5.89$, $p = 0.003$). Tukey HSD post-hoc comparisons showed that those who worked less than 36 hours per week had significantly lower scores (mean = 4.14, SD = 2.98) than those who worked 36–48 hours per week (mean = 6.15, SD = 3.63) ($p = 0.001$) and those who worked more than 48 hours per week (mean = 5.78, SD = 3.47) ($p = 0.006$).

Females: Self report data

Of the female respondents, 90 reported no history of medico-legal matters, 53 reported one matter and 27 reported two or more matters.

Using Wilks' criterion, there was a significant main effect for hours worked per week on the combined personality factors (Wilks' $\lambda = 0.92$; $F_{6,316} = 2.15$, $p < 0.05$), but not the number of medico-legal matters ($p > 0.05$).

On inspection of each single personality factor, there was a main effect for hours worked per week on the extraversion factor ($F_{2,160} = 3.19$, $p = 0.044$). Females who worked less than 36 hours per week had lower scores (mean = 6.05, SD = 3.39) than those who worked 36–48 hours per week (mean = 7.27, SD = 3.24), and those who worked more than 48 hours per week (mean = 6.14, SD = 3.47).

Females: UNITED data

According to UNITED data, the breakdown of medico-legal matters produced different sample sizes, in which 121 respondents had no recorded medico-legal matter, 34 had one matter and 16 had two or more matters.

Using Wilks' criterion, there was a significant main effect for the number of medicolegal matters (Wilks' $\lambda = 0.91$; $F_{6,318} = 2.45$, $p = 0.025$), but not hours worked per week ($p > 0.05$).

On inspection of each single personality factor, there was a main effect for hours worked per week on the psychoticism factor ($F_{2,161} = 3.39$, $p = 0.036$). Females who worked less than 36 hours per week had lower psychoticism scores (mean = 1.77, SD = 1.17) than those who worked 36–48 hours per week (mean = 1.78, SD = 1.35) and those who worked more than 48 hours per week (mean = 2.47, SD = 1.84).

DISCUSSION

Female and male respondents demonstrate a different personality profile which resembles community norms where there are higher neuroticism scores in females and higher psychoticism scores in males.

Male respondents also exhibit different personality traits according to hours of work, in which those working part-time are more introverted than males working full-time or greater. Perhaps the introverted males, who are less outgoing and talkative, are more comfortable with fewer hours of face-to-face interaction, while females who work part-time may be doing so for more pragmatic reasons (e.g. parenting). On the other hand, females who work more than 48 hours per week demonstrate no differences in personality traits compared to males working the same amount of hours.

Gender personality differences and variance in hours worked per week make it difficult to postulate how personality factors are related to doctors who have and have not experienced medico-legal matters. However, the results of our study showed that male doctors who self-reported a medico-legal matter had higher neuroticism scores on the EPQ. Is this a chicken-and-egg phenomenon in which those with higher neuroticism traits could have a greater chance of incurring medico-legal matters, due to the links between high neuroticism traits and depression, anxiety, alcohol use and subsequent deterioration in work performance? Our findings from the psychological morbidity component of this study showed that those who had a current medico-legal matter had an increase in psychiatric morbidity and, in males, potentially hazardous alcohol use.¹³

However, this finding of males with medico-legal matters having higher neuroticism scores was not replicated when we analysed the data provided by UNITED. This discrepancy could be explained by over-reporting of medico-legal matters by doctors who have higher neurotic tendencies, or could be accounted for by other matters experienced prior to membership with UNITED.

We had also hypothesized that doctors with high psychoticism scores (representing tough mindedness, and at the extreme a lack of empathy), would have had more medico-legal matters, but our results did not support this hypothesis. Perhaps a degree of 'tough mindedness' is not a negative trait in the practice of medicine.

Limitations

Our sample of 566 respondents represents three percent of Australian GPs (2003 workforce data).¹⁵ When the sample was further divided by gender, medico-legal matters and hours of work, the small numbers of females may have limited our interpretation of the findings.

In addition, although the response rate in our study (45.7% to the survey) is comparable to other studies in this area, there is the possibility that those who chose to respond are in some way biased.

Finally, two data sets for medico-legal matters were analysed, and each had their strengths and weaknesses. Self-report data may have been more inclusive than UNITED data, in that respondents would have included matters with other medical insurers (or indeed no other medical insurers). However, relying on respondents to classify the type of medico-legal matter was difficult. At times, matters were included in self-report data which may not have been considered to be a medico-legal matter according to the UNITED criteria, and thus the self-report data may have been over inclusive. Further exploration of this found that those respondents who reported a medico-legal matter (with any medical defence organization), but did not have a matter recorded with UNITED, had significantly higher neuroticism scores. The next phase of this study will explore the legal processes in more detail.

Conclusions

The known demographic and practice variables that increase the likelihood of having a medico-legal matter were replicated here i.e. being older, working longer hours (more years and hours of practice), being male and a proceduralist. Our hypothesis of increased number of medico-legal matters for doctors with high psychoticism scores was not supported. In relation to neuroticism, there was an inconsistent pattern regarding an increase in medico-legal matters in that there was a higher self-reported number of matters in male doctors, but not so on UNITED data and not so in females. Neuroticism is the personality trait that is known to make a person more vulnerable to psychological morbidity, and this is supported in the literature regarding doctors' health. Our hypothesis of increased medico-legal matters in doctors with high neuroticism scores was inconclusive but reduced work hours by male GPs with high neuroticism scores is an

interesting finding of this study. Among other implications of this study for psychiatrists, psychiatrists need to remain mindful of their own health and the needs of their colleagues who they may work with, or see as patients, considering that those with high neuroticism traits appear to be more vulnerable to stressors of practice and daily life. When treating, advising or teaching our doctor/student colleagues, reducing hours of work in times of stress is important to keep in mind.

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CHAPTER 8: Australian doctors involvement in medico-legal matters

Nash L, Kelly P, Daly M, Walter G, van Ekert E, Walton M, Willcock S, Tennant C.

Australian doctors' involvement in medico-legal matters: a cross-sectional self-report study. Medical Journal of Australia.2009;191:436-440.

ABSTRACT

Objective

To determine

Design, setting, and subjects

Results

Conclusion

Keywords

Introduction

Discussion

Conclusion

References

Correspondence

Conflict of interest

Supplemental material

Additional information

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

Louise M Nash, Patrick J Kelly, Michele G Daly, Garry Walter, Elizabeth H van Ekert, Merrilyn Walton, Simon M Willcock and Christopher C Tennant

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

DOCTORS' HEALTH

1 Response rate to survey, by medical specialty

Medical specialty	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 specialty 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. ◆

DOCTORS' HEALTH

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

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

Table continues next page ...

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 Avart 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

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.

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3 (continued from previous page)

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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CHAPTER 9: Psychiatric morbidity and alcohol use in Australian doctors

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Factors associated with psychiatric morbidity and hazardous alcohol use in Australian doctors

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Doctors with high levels of psychiatric morbidity or hazardous alcohol use may provide a lesser standard of care than doctors without these problems.¹ Factors associated with psychiatric illness in doctors include stressors within and outside of work, personality type (particularly neuroticism) and family history of mental illness.²⁻⁵ Specific factors reported in the literature include working long hours,^{6,7} being young, working night duty, being divorced,⁸ having high stressful life-event scores,⁹ and having experienced medicolegal matters.^{7,10-19} Factors that have been associated with hazardous levels of alcohol consumption in doctors include having high stress and anxiety levels,²⁰ being male, being a surgeon,^{21,22} and having experienced a medicolegal matter.¹⁹

In 2007, a questionnaire was administered to all major groups of specialist doctors insured with UNITED Medical Protection (before it merged with another company to become Avant Mutual Group Limited). The questionnaire examined work-related factors, including medicolegal matters, demographic factors and personality factors.

We have previously analysed the responses from the questionnaire to examine the factors associated with Australian doctors experiencing a medicolegal matter.²³ This study investigates whether factors reported in the literature and other factors — including not taking a holiday in the previous year, being Australian-trained, attending a peer review, meeting continuing medical education (CME) requirements, and having a current medicolegal matter — are associated with psychiatric morbidity and hazardous alcohol use for this broad range of Australian doctors. Results from a similar questionnaire administered only to GPs have been published previously.¹⁹

This is a collaborative research project between the University of Sydney and Avant.

METHODS

A questionnaire was mailed to all specialists (obstetricians, gynaecologists, physicians, surgeons, anaesthetists, psychiatrists,

ABSTRACT

Objective: To identify factors associated with psychiatric morbidity and hazardous alcohol use in Australian doctors.

Design, setting and participants: Cross-sectional postal survey of 2999 doctors (including all major specialty groups, trainees and general practitioners) insured with an Australian medical insurance company. The potential for psychiatric morbidity was measured by the General Health Questionnaire (GHQ), and the potential for hazardous alcohol use by the Alcohol Use Disorders Identification Test (AUDIT). The survey was conducted in 2007.

Main outcome measures: Demographic, work-related and personality factors associated with a GHQ score > 4 and an AUDIT score \geq 8.

Results: Factors significantly associated with psychiatric morbidity in doctors were: having a current medicolegal matter, not taking a holiday in the previous year, working long hours, type of specialty, and having personality traits of neuroticism and introversion. Factors significantly associated with potentially hazardous alcohol use were being male, being Australian-trained, being between 40 and 49 years of age, having personality traits of neuroticism and extroversion, failing to meet Continuing Medical Education requirements, and being a solo practitioner.

Conclusions: The mental health of medical practitioners is crucial to the quality of care their patients receive. Doctors should reflect on their hours of work and need for holidays. Involvement with medicolegal processes, such as lawsuits, complaints and inquiries, is a stressful part of medical practice today. Doctors need to be educated about these processes and understand how the experience may affect their health, work and loved ones.

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pathologists, radiologists, paediatricians, and accident and emergency specialists), registrars and specialists in training, and a sample of GP non-proceduralists who had been insured with UNITED. GP proceduralists were not included as they had participated the previous year in a similar GP study.¹⁹ Surveys were returned by reply-paid mail. Four weeks later, a reminder letter and repeat questionnaire were sent to non-respondents.

The questionnaire elicited demographic and practice details — age, sex, specialty, hours worked per week, country of medical degree, teaching role, attendance at peer review, fulfilment of CME requirements, holiday in previous 12 months — and measures of personality, psychiatric morbidity and alcohol use. The questionnaire also asked if the doctor had ever experienced any of the following medicolegal matters: a claim for compensation for damages, complaint to a health care complaints body,

medical registration board inquiry, disciplinary hearing, Medicare Australia/Health Insurance Commission (HIC) inquiry, hospital dispute, hospital investigation, pharmaceutical services inquiry, complaint before an anti-discrimination board, coronial inquiry, criminal charge, or patient complaint direct to the doctor.

Personality was measured using the Eysenck Personality Questionnaire (EPQ) — Revised Short Scale version.²⁴ The EPQ is a valid and reliable self-report questionnaire that measures three major dimensions of personality: extroversion (a low score representing introversion); neuroticism (measuring emotional stability or sensitivity); and “psychoticism” (measuring tough mindedness and, at the extreme, lack of empathy, but not actual psychotic features).

Psychiatric morbidity was assessed using the General Health Questionnaire-28 (GHQ),²⁵ a sensitive and well validated screening tool to detect common non-psy-

chotic psychiatric morbidity by considering symptoms over the previous 2 weeks. It has four subscales: somatic symptoms; anxiety and insomnia; social dysfunction; and depression. Case identification for risk of psychiatric morbidity was based on a combined score > 4, using binary scoring for each question (with the two least symptomatic answers scoring 0 and the two most symptomatic answers scoring 1).

Alcohol use was assessed using the World Health Organization's Alcohol Use Disorders Identification Test (AUDIT),²⁶ a sensitive 10-item questionnaire to detect hazardous and harmful drinking. Subjects scoring a total of 8 or more were classified as potentially hazardous drinkers (AUDIT case identification).

Our study compared respondents with non-respondents by age, sex, specialty and experience of medicolegal matters.

Ethics approval

Our study was approved by the human research ethics committees of Northern Sydney Central Coast Area Health and the University of Sydney, and the board of Avant. Anonymity and confidentiality were protected at all times.

Statistical analysis

Data were analysed using SAS software, version 9.1 (SAS Institute Inc, Cary, NC, USA). Univariate analyses were conducted using Pearson's χ^2 tests. Multivariate logistic regression models were fitted to outcome measures of both GHQ case identification for psychiatric morbidity and AUDIT case identification for potentially hazardous drinking. Variables were included if their univariate *P* value was less than 0.3. The fit of the model was checked using the Hosmer–Lemeshow goodness-of-fit test.²⁷

RESULTS

Characteristics of respondents

Of 8500 doctors invited to participate in the study, 140 declined, and surveys were sent to the remaining 8360. Of these, 2999 (36%) responded.

The mean number of hours worked per week was 44.8 (SD, 15.1), with male doctors averaging 48.0 hours (SD, 14.2) and female doctors averaging 37.1 hours (SD, 14.3). 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 12 months. About two-thirds

1 Univariate and multivariate* analysis of factors associated with psychiatric morbidity (GHQ score > 4)

Variable	No.	GHQ score > 4 (%)	<i>P</i> [†]	AOR (95% CI) [‡]	<i>P</i> [‡]
Medical specialty			0.008		0.03
General practitioner	589	177 (30)		1.00	
Obstetrician/gynaecologist	177	43 (24)		0.72 (0.44–1.17)	
Surgeon	359	89 (25)		0.74 (0.49–1.10)	
Anaesthetist	350	83 (24)		0.71 (0.49–1.02)	
Psychiatrist	230	64 (28)		1.09 (0.71–1.67)	
Pathologist	86	18 (21)		0.41 (0.21–0.81)	
Radiologist	106	32 (30)		1.06 (0.62–1.81)	
Physician	478	138 (29)		0.96 (0.68–1.36)	
Accident and emergency specialist	60	15 (25)		0.81 (0.40–1.66)	
Paediatrician	140	40 (29)		0.91 (0.56–1.48)	
In training [§]	252	91 (36)		1.05 (0.69–1.59)	
Other	126	22 (17)		0.43 (0.25–0.76)	
Sex			0.006		0.99
Female	868	269 (31)		1.00	
Male	2085	543 (26)		1.00 (0.78–1.28)	
Age group (years)			< 0.001		0.001
< 40	482	148 (31)		1.00	
40–49	872	271 (31)		1.10 (0.81–1.50)	
50–59	917	281 (31)		0.89 (0.65–1.23)	
≥ 60	682	112 (16)		0.58 (0.39–0.84)	
Country in which medical degree obtained[¶]			0.82		
Australia	2470	682 (28)			
Overseas	476	129 (27)			
Solo practice			0.006		0.04
No	2044	592 (29)		1.00	
Yes	899	216 (24)		0.78 (0.61–0.99)	
Marital status			0.05		0.29
Single	231	70 (30)		1.00	
Partnered	2511	668 (27)		1.17 (0.83–1.65)	
Divorced/separated	154	56 (36)		1.31 (0.78–2.19)	
Widowed	38	11 (29)		2.34 (0.95–5.77)	

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GHQ = General Health Questionnaire–28. AOR = adjusted odds ratio. * Hosmer–Lemeshow goodness-of-fit test, *P* = 0.37. † Univariate analysis. ‡ Multivariate analysis. § Specialist in training, hospital registrar, GP registrar. ¶ This variable was not included in the multivariate analysis (*P* value > 0.3 in the univariate analysis). ●

of respondents (1902/2942 [65%]) had experienced medicolegal matters, with 426 (14%) having a current matter.

We have previously reported the demographic and practice details, and the type, frequency and factors associated with medicolegal matters for this study,²³ including a detailed comparison of respondents with non-respondents. There were only minor differences between the two groups.

Potential for psychiatric morbidity

GHQ case identification for psychiatric morbidity for the total cohort was 28% (31% for women, 26% for men). The results of the univariate and multivariate logistic regression analyses for psychiatric morbidity found by GHQ case identification are shown in Box 1. All variables were included in the multivariate analysis except teaching role (for which the *P* value was > 0.3 in the univariate analysis).

1 (continued from previous page)

Variable	No.	GHQ score > 4 (%)	P [†]	AOR (95% CI) [‡]	P [‡]
Hours worked per week			0.007		0.02
< 40	823	194 (24)		1.00	
40–49	753	209 (28)		1.23 (0.93–1.62)	
50–59	747	210 (28)		1.41 (1.05–1.89)	
≥ 60	596	190 (32)		1.65 (1.20–2.26)	
Peer review in previous 12 months			0.1		0.65
No	875	257 (29)		1.00	
Yes	2056	543 (26)		0.95 (0.75–1.19)	
CME requirements			0.27		0.32
Not met	112	36 (32)		1.29 (0.78–2.11)	
Met or not applicable	2785	764 (27)		1.00	
Teaching role [¶]			0.35		
No	1008	267 (26)			
Yes	1907	536 (28)			
Holiday in previous 12 months			< 0.001		< 0.001
No	388	161 (41)		1.92 (1.47–2.50)	
Yes	2526	643 (25)		1.00	
Current medicolegal matter			< 0.001		< 0.001
No	2478	638 (26)		1.00	
Yes	421	163 (39)		1.96 (1.52–2.54)	
Psychoticism			0.08		0.80
≤ Median	1776	508 (29)		1.00	
> Median	1090	279 (26)		0.97 (0.80–1.19)	
Extroversion			< 0.001		0.04
≤ Median	1594	500 (31)		1.00	
> Median	1238	280 (23)		0.81 (0.67–0.99)	
Neuroticism			< 0.001		< 0.001
≤ Median	1714	252 (15)		1.00	
> Median	1154	542 (47)		4.65 (3.82–5.65)	

GHQ = General Health Questionnaire–28. AOR = adjusted odds ratio. CME = Continuing Medical Education. * Hosmer–Lemeshow goodness-of-fit test, $P = 0.37$. † Univariate analysis. ‡ Multivariate analysis. ¶ This variable was not included in the multivariate analysis (P value > 0.3 in the univariate analysis.)

In the multivariate analysis, significant demographic and work-related variables associated with increased potential for psychiatric morbidity were: having a current medicolegal matter (odds ratio [OR], 1.96 [95% CI, 1.52–2.54]); not having had a holiday in the previous year (OR, 1.92 [95% CI, 1.47–2.50]); and working long hours per week (OR, 1.65 [95% CI, 1.20–2.26] for ≥ 60 hours compared with < 40 hours). Specialty was also statistically significant ($P = 0.03$) (Box 1). Doctors 60 years of age or older had a lower

likelihood of psychiatric morbidity than doctors under 40 years of age (OR, 0.58 [95% CI, 0.39–0.84]). Solo practitioners had a lower risk of psychiatric morbidity than non-solo practitioners (OR, 0.78 [95% CI, 0.61–0.99]). The personality trait of neuroticism (defined as having a neuroticism score greater than the median) was the highest risk factor for psychiatric morbidity (OR, 4.65 [95% CI, 3.82–5.65]). Introversion was also a statistically significant risk factor for psychiatric morbidity ($P = 0.04$).

Potential for hazardous alcohol use

AUDIT case identification for potential for hazardous alcohol use for the total cohort was 15% (8% for women, 17% for men). The results of the univariate and multivariate logistic regression analyses for potentially hazardous alcohol use are shown in Box 2.

Demographic and work-related variables in the multivariate analyses associated with increased risk of potentially hazardous drinking were: being male (OR, 2.55 [95% CI, 1.83–3.55]); being aged 40–49 years compared with under 40 years (OR, 1.86 [95% CI, 1.22–2.83]); not having met CME requirements (OR, 1.72 [95% CI, 1.04–2.87]); and being a solo practitioner rather than a non-solo practitioner (OR, 1.33 [95% CI, 1.01–1.75]). Neuroticism (OR, 2.20 [95% CI, 1.74–2.78]), extroversion (OR, 1.62 [95% CI, 1.28–2.04]) and psychoticism (OR, 1.27 [95% CI, 1.01–1.60]) were all associated with potential for hazardous alcohol use. Doctors were at less risk of hazardous alcohol use if they: trained overseas rather than in Australia (OR, 0.56 [95% CI, 0.39–0.81]); worked more than 60 hours a week compared with less than 40 hours a week (OR, 0.67 [95% CI, 0.45–0.99]); and had not taken a holiday in more than a year (OR, 0.63 [95% CI, 0.43–0.93]).

DISCUSSION

Our investigation found that the personality trait of neuroticism carried the highest risk for psychiatric morbidity. Of work-related factors, having a current medicolegal matter was the factor most associated with psychiatric morbidity, followed by not taking a holiday in the previous year and working long hours.

For potentially hazardous alcohol use, demographic and personality factors were more significant than work-related factors. The greatest risk factors for hazardous alcohol use were being male, having an Australian medical degree, and having personality traits of neuroticism and extroversion. Two work-related factors were also associated: being a solo practitioner, and not meeting CME requirements. There was no significant association between having a current medicolegal matter and potentially hazardous alcohol use ($P = 0.09$).

Interestingly, doctors who worked long hours and had not taken a holiday in the previous year were more likely to have psychiatric morbidity but less likely to drink alcohol hazardously, perhaps because they

had less opportunity to do so due to their work demands.

Our findings that long working hours and the work-related stressor of a medicolegal matter were associated with psychiatric morbidity in doctors are consistent with the findings of other studies.^{6,8-12,16-18} Our finding that older doctors had a lower risk of psychiatric morbidity is consistent with a recent Australian study.²⁸

The proportion of clinicians with a GHQ case identification (28%) was close to that observed in the GP study (27%).¹⁹ The level of psychiatric morbidity was higher among study participants than in a South Australian general population study, where case identification was 19.5%.²⁹

The reported prevalence of potentially hazardous alcohol use in our study (15%) was higher than that in the GP study (12%)¹⁹ and similar to that found in a general Canadian population (14%).³⁰ The female case identification of 8% in our study was the same as that of the Australian national survey of alcohol use in Australian women.³¹

Our study showed that potentially hazardous alcohol use occurs more in male than female doctors, as reported in other studies.^{20,21} However, no specific speciality group was identified as being significantly more associated with hazardous alcohol use. This contrasts with a German study that found surgeons to be more likely to drink hazardously.²¹

Considering personality variables, the results of our study are consistent with the GP study¹⁹ and an English study⁵ in finding that neuroticism and introversion are associated with psychiatric morbidity. The association of neuroticism, extroversion and psychoticism with potentially hazardous alcohol use is similar to the findings of the GP study.¹⁹

A medicolegal matter should be regarded as a predictable work-related stressor for which doctors need to be prepared, considering that two-thirds of our sample had experienced a matter at some time and 14% had a current matter. Just as they would advise their own patients, doctors should actively manage stressful life events using positive coping strategies. These strategies include stress reduction techniques, regular exercise, good sleep and diet, as well as working fewer hours a week, being well informed about the legal process, seeking advice from one's own doctor to ameliorate distress and anxiety, and avoiding negative coping strategies like excessive alcohol consumption and self-medication.

2 Univariate and multivariate* analysis of factors associated with hazardous alcohol use (AUDIT score ≥ 8)

Variable	No.	AUDIT score ≥ 8 (%)	P†	AOR (95% CI)‡	P‡
Medical specialty			0.25		0.54
General practitioner	590	73 (12)		1.00	
Obstetrician/gynaecologist	179	27 (15)		0.96 (0.54-1.70)	
Surgeon	357	67 (19)		0.92 (0.58-1.46)	
Anaesthetist	351	63 (18)		1.10 (0.72-1.69)	
Psychiatrist	231	35 (15)		0.89 (0.53-1.49)	
Pathologist	89	11 (12)		0.95 (0.46-1.99)	
Radiologist	107	16 (15)		0.74 (0.37-1.48)	
Physician	480	65 (14)		0.81 (0.53-1.24)	
Accident and emergency specialist	63	10 (16)		0.93 (0.41-2.13)	
Paediatrician	142	16 (11)		0.85 (0.45-1.59)	
In training§	254	33 (13)		1.73 (1.00-2.99)	
Other	128	22 (17)		1.28 (0.72-2.27)	
Sex			< 0.001		< 0.001
Female	873	72 (8)		1.00	
Male	2098	366 (17)		2.55 (1.83-3.55)	
Age group (years)			< 0.001		0.01
< 40	485	46 (9)		1.00	
40-49	874	145 (17)		1.86 (1.22-2.83)	
50-59	924	157 (17)		1.78 (1.15-2.76)	
≥ 60	688	90 (13)		1.35 (0.84-2.19)	
Country in which medical degree obtained			< 0.001		< 0.001
Australia	2484	394 (16)		1.00	
Overseas	480	44 (9)		0.56 (0.39-0.81)	
Solo practice			0.004		0.04
No	2058	278 (14)		1.00	
Yes	903	159 (18)		1.33 (1.01-1.75)	
Marital status			0.011		0.08
Single	231	21 (9)		1.00	
Partnered	2529	386 (15)		1.60 (0.96-2.67)	
Divorced/separated	154	29 (19)		2.12 (1.08-4.17)	
Widowed	38	2 (5)		0.57 (0.12-2.71)	

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AUDIT = Alcohol Use Disorders Identification Test. AOR = adjusted odds ratio. * Hosmer-Lemeshow goodness-of-fit test, $P = 0.32$. † Univariate analysis. ‡ Multivariate analysis. § Specialist in training, hospital registrar, GP registrar.

The strength of our study was its large sample size, representing 5% of the entire Australian medical workforce and around 10% of the non-GP specialist groups (ranging from 9% for physicians to 14% for obstetricians and gynaecologists).³² Although the response rate to our survey (36%) was relatively low, the idea that a high response rate is necessary has been challenged (as discussed in our previous study).²³

The mental health of medical practitioners is crucial to good patient care. Unlike personality traits, the work-related and lifestyle factors associated with psychiatric morbidity and hazardous alcohol use are more easily addressed. Doctors should reflect on their hours of work and need for holidays. Involvement with medicolegal processes, such as lawsuits, complaints and inquiries, are a stressful part of medical

2 (continued from previous page)

Variable	No.	AUDIT ≥ 8 (%)	P†	AOR (95% CI)‡	P†
Hours worked per week			< 0.001		0.01
< 40	819	94 (11)		1.00	
40–49	762	120 (16)		1.13 (0.81–1.58)	
50–59	756	142 (19)		1.15 (0.82–1.62)	
≥ 60	599	74 (12)		0.67 (0.45–0.99)	
Peer review in previous 12 months			0.17		0.91
No	882	118 (13)		1.00	
Yes	2066	317 (15)		1.02 (0.77–1.35)	
CME requirements			0.001		0.04
Not met	113	29 (26)		1.72 (1.04–2.87)	
Met or not applicable	2806	401 (14)		1.00	
Teaching role¶			0.35		
No	1014	141 (14)			
Yes	1922	292 (15)			
Holiday in previous 12 months			0.01		0.02
No	388	41 (11)		0.63 (0.43–0.93)	
Yes	2545	389 (15)		1.00	
Current medicolegal matter			< 0.001		0.09
No	2500	344 (14)		1.00	
Yes	421	86 (20)		1.30 (0.96–1.75)	
Psychoticism			0.004		0.04
≤ Median	1781	238 (13)		1.00	
> Median	1089	188 (17)		1.27 (1.01–1.60)	
Extroversion			0.007		< 0.001
≤ Median	1592	212 (13)		1.00	
> Median	1245	211 (17)		1.62 (1.28–2.04)	
Neuroticism			< 0.001		< 0.001
≤ Median	1719	205 (12)		1.00	
> Median	1155	226 (20)		2.20 (1.74–2.78)	

AUDIT = Alcohol Use Disorders Identification Test. AOR = adjusted odds ratio. CME = Continuing Medical Education. * Hosmer–Lemeshow goodness-of-fit test, $P = 0.32$. † Univariate analysis. ‡ Multivariate analysis. ¶ This variable was not included in the multivariate analysis (P value > 0.3 in the univariate analysis.)

practice today. Doctors need to be educated about medicolegal processes and understand how the experience may affect their health, their work and their loved ones.

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COMPETING INTERESTS

Avant provided funding for a part-time research officer (Michele Daly) and mail-out of the questionnaire, as well as inhouse support for sample selec-

tion and comparison. Simon Willcock is an elected board member of Avant. Elizabeth van Ekert is a former employee of Avant.

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CHAPTER 10: Change of practice due to medico-legal concerns in Australia

Perceived practice change in Australian doctors

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Perceived practice change in Australian doctors due to medico-legal concerns.

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Perceived practice change in Australian doctors as a result of medicolegal concerns

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Medicolegal concerns can prompt changes to the practice of medicine that can be both potentially beneficial and not beneficial to patient care.¹⁻¹⁶ There is international evidence from the United Kingdom, the United States, Japan, Canada and New Zealand of concerns about medicolegal issues leading to excessive referrals,^{5,8,13} excessive ordering of tests^{5,8} and use of imaging technology,⁷ excessive prescribing of medication,^{5,8} and avoidance of certain patients or procedures.^{4,5,13} Potentially beneficial changes include that medicolegal concerns can lead to more information being given to patients^{4,5} and to more reflective practice, greater sensitivity to societal and professional expectations, and willingness to make system improvements,¹⁵ such as developing audit procedures and better record keeping.⁵

What is the Australian situation regarding beliefs and perceived changes in practice due to medicolegal concerns? In an earlier Australian general practitioner study, we also found evidence of practice change.¹⁶

In this article, we report new Australian evidence from a large, broad sample of Australian doctors comprising specialists, GPs and trainees. We also examine whether perceived behaviour and beliefs differ between doctors who have experienced a medicolegal matter and those who have not.

METHODS

In September 2007, a questionnaire was mailed to all specialists (obstetricians, gynaecologists, physicians, surgeons, anaesthetists, psychiatrists, pathologists, radiologists, paediatricians, accident and emergency specialists), all registrars and specialists in training, and a sample of GP non-proceduralists insured with the medical insurance company UNITED (that company subsequently merged with another company). GP proceduralists were not included, as they had participated in our previous study. The random sample of 1865 non-procedural GPs was selected out of a possible 7275 non-procedural GPs who had not been invited to participate in the previous GP study. A summary of response rate per specialty has been published previously.¹⁷

ABSTRACT

Objectives: To explore the perceived impact of medicolegal concerns on how Australian doctors practise medicine and to compare doctors who have experienced a medicolegal matter with those who have not.

Design and setting: Cross-sectional survey (posted in September 2007, with reminder 4 weeks later) of Australian doctors from all major specialty groups, trainees and a sample of general practitioners who were insured with a medical insurance company.

Participants: 2999 respondents of 8360 who were sent the survey.

Main outcome measures: Perceived practice changes due to concerns about medicolegal issues, beliefs about medicolegal issues, and the influence of medicolegal issues on both career choices and how doctors relate to their patients.

Results: Respondents reported changes in practice behaviour due to medicolegal concerns, with 43% of doctors stating that they referred patients more than usual, 55% stating that they ordered tests more than usual, and 11% stating that they prescribed medications more than usual. Respondents also reported improved communication of risk (66%), increased disclosure of uncertainty (44%), developed better systems for tracking results (48%) and better methods for identifying non-attenders (39%) and for auditing clinical practice (35%). Concerns about medicolegal issues led to 33% considering giving up medicine, 32% considering reducing their working hours and 40% considering retiring early. These proportions were all significantly greater for doctors who had previously experienced a medicolegal matter compared with those who had not.

Conclusions: This Australian study, like international studies, confirms that doctors' concerns about medicolegal issues impact on their practice in a variety of ways. There is a greater perceived impact on those doctors who have previously experienced a medicolegal matter.

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Surveys were sent out with reply-paid envelopes for their return. Four weeks after the mail-out, a reminder letter and repeat questionnaire were sent to non-respondents.

The questionnaire covered demographic and practice details, and experience of medicolegal matters. It also canvassed doctors' beliefs about medicolegal issues and their perceived changes in practice as a result of medicolegal concerns. The questionnaire was developed from key items in the literature,^{3-8,11-16} and was first used in a small study with the New South Wales Health Care Complaints Commission,⁶ and further developed for a GP study.¹⁶

The items about perceived changes in practice behaviour due to medicolegal concerns are listed in Box 1. There were four response categories: less than usual, no change from usual, more than usual, and not applicable. A series of statements about beliefs and understanding of the law as it

relates to medicolegal issues are listed in Box 2. Response categories for these items were: "strongly disagree", "disagree", "agree" and "strongly agree". Items on the perceived influence of medicolegal issues on career choice and on how doctors relate to patients are shown in Box 3 and Box 4, respectively. Response categories for these items were "yes" or "no".

The questionnaire asked if doctors had ever been the subject of one of the following medicolegal matters: a claim for compensation for damages; a complaint to a health care complaints body; a medical registration board inquiry; a disciplinary hearing; a Medicare Australia/Health Insurance Commission (HIC) inquiry; a hospital dispute; a hospital investigation; a pharmaceutical services inquiry; a complaint before an anti-discrimination board; a coronial inquiry; a criminal charge; and a patient complaint direct to the doctor. Self-report data were

1 Perceived change in practice behaviour due to concerns about medicolegal negligence claims and complaints*

Item	All respondents			Respondents who had experienced MLM		Respondents who had not experienced MLM		Difference [§] (95% CI)	P
	Not applicable	N [†]	Agree [‡]	N [†]	Agree [‡]	N [†]	Agree [‡]		
Provide communication of risk to patients	70	2844	1874 (66%)	1859	1278 (69%)	985	596 (61%)	8 (5 to 12)	<0.001
Order tests	116	2810	1546 (55%)	1844	1047 (57%)	966	499 (52%)	5 (1 to 9)	0.01
Put systems in place to track test results	340	2564	1226 (48%)	1690	835 (49%)	874	391 (45%)	5 (1 to 9)	0.03
Disclose uncertainty	65	2859	1262 (44%)	1868	884 (47%)	991	378 (38%)	9 (5 to 13)	<0.001
Refer patients to specialists	368	2548	1096 (43%)	1647	712 (43%)	901	384 (43%)	-1 (-5 to 3)	0.8
Avoid a particular type of invasive procedure	598	2334	931 (40%)	1575	660 (42%)	759	271 (36%)	6 (2 to 10)	0.01
Put systems in place to identify non-attenders	580	2333	909 (39%)	1557	645 (41%)	776	264 (34%)	7 (3 to 12)	0.001
Consider every patient a potential litigant	79	2843	1039 (37%)	1860	771 (41%)	983	268 (27%)	14 (11 to 18)	<0.001
Put systems in place to audit practice	320	2596	906 (35%)	1722	618 (36%)	874	288 (33%)	3 (-1 to 7)	0.15
Avoid particular obstetric procedure	2109	813	277 (34%)	537	207 (39%)	276	70 (25%)	13 (6 to 20)	<0.001
Relate empathically to patients	77	2841	730 (26%)	1861	523 (28%)	980	207 (21%)	7 (4 to 10)	<0.001
Prescribe medication	277	2649	285 (11%)	1738	194 (11%)	911	91 (10%)	1 (-1 to 4)	0.39
Advise patients of complaints policy	294	2626	255 (10%)	1725	171 (10%)	901	84 (9%)	1 (-2 to 3)	0.68

MLM = medicolegal matter.

* Results relate to participants who agreed that they performed the behaviour listed in the item column more than usual when asked: "Do concerns about medical negligence/complaint cause you to [item] less than usual, no change from usual, more than usual or not applicable?". † The number who responded to the item (excluding "not applicable" responses). ‡ The number (%) who agreed that they had changed their practice behaviour in accordance with the statement. § Percentage of respondents with experience of MLM who changed their behaviour more than usual minus the percentage of respondents with no experience of MLM who changed their behaviour more than usual.

thought to be more inclusive, as some doctors may have changed insurers, not had an insurer previously, or chosen not to discuss matters with their insurer. The proportion of doctors who self-reported ever being involved in a medicolegal matter by medical specialty and type of matter was reported in the Journal in 2009.¹⁷

Statistical analysis

Response categories were dichotomised according to whether or not doctors had experienced medicolegal matters, and differences between respondents who had and had not experienced medicolegal matters were assessed using Pearson's χ^2 tests. Given the large size of our sample, very small differences between those who had and had not experienced medicolegal matters could be detected, and consequently, differences were considered statistically significant at $P \leq 0.01$. The estimated differences between proportions and corre-

sponding 95% confidence intervals are also presented.

Statistical analysis was undertaken using SPSS, version 15 (SPSS Inc, Chicago, Ill, USA).

Ethics approval

Approval for the study was granted through ethics committees of the Northern Sydney Central Coast Area Health Service and the University of Sydney, and the Board of UNITED (now Avant). Anonymity and confidentiality of survey responses and Avant membership and data were protected at all times.

RESULTS

Eight thousand five hundred doctors were invited to participate in the study. One hundred and forty declined, leaving 8360 who received the survey. Two thousand nine hundred and ninety-nine responded, repre-

sented a 36% response rate (2999/8360). Experience of medicolegal matters was self-reported by 1902 of 2942 respondents (65%), with 426 (14%) having a current matter. The two most common medicolegal matters were claims for compensation (31%) and complaints to a health care complaints body (30%), and the least common were criminal charges (<1%), pharmaceutical services inquiries (1%), antidiscrimination board complaints (1%) and disciplinary hearings (2%).

A comparison of respondents with non-respondents according to age, sex, specialty and history of medicolegal matters derived from Avant data found minor differences only. Respondents were slightly older (mean age, 51.7 years v 50.3 years), proportionally fewer men responded (71% v 74%), and 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

2 Beliefs about medicolegal issues*

Item	All respondents		Respondents who had experienced MLM		Respondents who had not experienced MLM		Difference [§] (95% CI)	P
	N [†]	Agree [‡]	N [†]	Agree [‡]	N [†]	Agree [‡]		
All doctors make mistakes	2933	2865 (98%)	1896	1855 (98%)	1037	1010 (97%)	1 (-1 to 2)	0.53
Inadequate communication is a factor in most mistakes	2929	2739 (94%)	1892	1744 (92%)	1037	995 (96%)	-4 (-6 to -2)	<0.001
My awareness of risks of medical negligence has increased in recent years	2928	2678 (91%)	1895	1741 (92%)	1033	937 (91%)	1 (-1 to 3)	0.31
I feel comfortable discussing my mistakes with my colleagues	2930	2319 (79%)	1894	1494 (79%)	1036	825 (80%)	-1 (-4 to 2)	0.67
Doctors are encouraged to report their medical errors	2924	1775 (61%)	1892	1138 (60%)	1032	637 (62%)	-2 (-5 to 2)	0.43
Professional standards should be set solely by the medical profession	2919	1694 (58%)	1889	1114 (59%)	1030	580 (56%)	3 (-6 to 11)	0.18
The law requires me to make perfect decisions	2922	1577 (54%)	1889	1062 (56%)	1033	515 (50%)	6 (3 to 10)	<0.001
Medical mistakes are rare	2931	549 (19%)	1894	372 (20%)	1037	177 (17%)	3 (0 to 5)	0.01
An apology to a patient implies an admission of liability	2920	460 (16%)	1886	319 (17%)	1034	141 (14%)	3 (1 to 6)	0.02
Patients are likely to sue a doctor who tells them about a mistake	2920	341 (12%)	1887	250 (13%)	1033	91 (9%)	4 (2 to 7)	<0.001
Only unprofessional or incompetent doctors get sued	2929	78 (3%)	1896	47 (2%)	1033	31 (3%)	-1 (-2 to 1)	0.47

MLM = medicolegal matter.

* Perceptions of mistakes, complaints and legal risk were assessed by asking respondents whether they strongly disagreed, disagreed, agreed or strongly agreed with the statements in the item column. † The number who responded to the item. ‡ The number (%) who agreed or strongly agreed with the statement. § Percentage of respondents with experience of MLM who agreed or strongly agreed with the statement minus the percentage of respondents with no experience of MLM who agreed or strongly agreed with the statement.

(20.6% v 17.1%), and coronial inquiries (4.7% v 3.3%). The differences for all three comparisons of medicolegal matters were significant at $P < 0.01$. There was no difference between respondents and non-respondents with respect to the other nine categories of medicolegal matter. Further discussion about the comparison of respondents with non-respondents, and a comparison of our sample with the Australian medical workforce in general was previously reported in 2009.¹⁷

Perceived change in practice behaviour due to concerns about medical negligence claims and complaints

The proportion of doctors who reported altering their practice behaviour relating to a particular item "more than usual" due to concerns about medical negligence and complaints is reported in Box 1. A varying number of respondents reported that items were not applicable, as shown. The table in

Box 1 lists the items in descending order of the frequency with which they were reported to influence practice by all respondents, and compares doctors who had and had not experienced a medicolegal matter.

For 8 of the 13 items, participants who had experienced a medicolegal matter were significantly more likely than those who had not to perceive that they had changed practice in response to medicolegal concerns.

Beliefs about medicolegal issues

Box 2 shows agreement among respondents with statements about medicolegal issues. The proportion agreeing includes those who strongly agreed and agreed. Respondents who had experienced a medicolegal matter were more likely to agree that "the law requires me to make perfect decisions" and "patients are likely to sue a doctor who tells them about a mistake", but less likely to agree that "inadequate communication is a factor in most mistakes".

Perceived influence of medicolegal issues on career choices

Respondents who had experienced a medicolegal matter were more likely to agree with all four statements on career choices listed in Box 3, compared with those with no experience of a medicolegal matter ($P < 0.001$).

Perceived influence of medicolegal issues on how doctors relate to patients

Respondents with experience of a medicolegal matter were more likely to agree with all four statements listed in Box 4 about relating to patients, compared with those with no experience of a medicolegal matter ($P < 0.001$).

DISCUSSION

We found that Australian doctors report that concerns about medicolegal action changes the way they would normally practise medi-

3 Perceived influence of medicolegal issues on career choices*

Item	All respondents		Respondents who had experienced MLM		Respondents who had not experienced MLM		Difference [§] (95% CI)	P
	N [†]	Agree [‡]	N [†]	Agree [‡]	N [†]	Agree [‡]		
Retiring early?	2919	1169 (40%)	1895	877 (46%)	1024	292 (29%)	18 (14-21)	<0.001
Giving up medicine?	2909	957 (33%)	1886	728 (39%)	1023	229 (22%)	16 (13-20)	<0.001
Reducing your hours of work?	2903	929 (32%)	1885	720 (38%)	1018	209 (21%)	18 (14-21)	<0.001
Changing your speciality?	2882	320 (11%)	1867	238 (13%)	1015	82 (8%)	5 (2-7)	<0.001

MLM = medicolegal matter.

* Participants were asked to respond "yes" or "no" to the question: "Have concerns about medicolegal issues caused you to consider" the option in the item column.

† The number who responded to the item. ‡ The number (%) who agreed with the statement. § Percentage of respondents with experience of MLM who answered "yes" to the item minus the percentage of respondents with no experience of MLM who answered "yes" to the item.

cine. Our findings concur with most of those in international studies, and provide new information by also comparing doctors who have experienced a medicolegal matter with those who have not.

The increase in referral rates reported by 43% of our respondents is lower than the rate in the US Common Good study (74%)⁸ and the UK GP study (64%),⁵ although this reflects the difference between the samples — the UK study included only GPs while ours included mainly specialists. The costly increase in test ordering reported by 55% of our sample was similar to the rate in the UK study (60%),⁵ but lower than that in the US Common Good study (79%).⁸ Unnecessary prescribing is both expensive and potentially dangerous. However, only 11% of our sample reported this practice. This compares favourably with the UK GP study, in which 29% perceived that they prescribed unnecessary drugs, and the US Common Good study, in which 41% believed they prescribed more medication for fear of litigation.⁸ It is possible that the campaigns for safe prescribing over the past decade in

Australia may have had a positive effect on prescribing practices.¹⁸

A significant number of doctors with experience of a medicolegal matter had more negative attitudes towards their work and in their relationships with their patients. Concerns about medicolegal issues caused 33% of the total cohort to consider giving up medicine, 32% to consider reducing hours of work, 40% to consider retiring early, and 18% to feel more emotionally distant from patients. All these were significantly more common in doctors with experience of a medicolegal matter compared with those with no such experience. Similarly, changes in relating to patients were reported in a study of New Zealand doctors who had experienced complaints, with a reduction in both trust of patients (38% in the short term and 32% in the long term) and sense of goodwill towards patients (29% in the short term and 18% in the long term).¹⁴ The US Common Good study reported that 38% of respondents thought the fear of malpractice made their relationship with patients less personal.⁸

Doctors reported some improvements of care due to medicolegal concerns, such as improved communication of risk to patients, which was reported by 66%. The need to disclose uncertainty surrounding diagnosis or treatment was increased in 44% of respondents, with a 9% greater difference in those who had experienced a medicolegal matter compared with those who had not. There were perceived improvements to quality and safety measures due to medicolegal concerns, with better systems for tracking test results reported by 48%, better methods to identify non-attenders reported by 39% and routine auditing of clinical practice reported by 35%.

There was near universal agreement (98%) that doctors make mistakes, yet 54% believed that the law required them to make perfect decisions. This proportion was significantly higher among doctors with, than among those without experience of a medicolegal matter. Yet the law does not require perfection. The majority decision of the High Court of Australia in *Rogers v Whitaker* established that "The law imposes

4 Perceived influence of medicolegal issues on how doctors relate to patients*

Item	All respondents		Respondents who had experienced MLM		Respondents who had not experienced MLM		Difference [§] (95% CI)	P
	N [†]	Agree [‡]	N [†]	Agree [‡]	N [†]	Agree [‡]		
Provide more information to patients?	2918	2373 (81%)	1894	1578 (83%)	1024	795 (78%)	6 (3-9)	<0.001
Are more attentive with patients?	2908	1594 (55%)	1887	1091 (58%)	1021	503 (49%)	9 (5-12)	<0.001
Are more selective regarding patients seen?	2913	795 (27%)	1891	623 (33%)	1022	172 (17%)	16 (13-19)	<0.001
Are more distant from patients emotionally?	2907	516 (18%)	1886	393 (21%)	1021	123 (12%)	9 (6-12)	<0.001

MLM = medicolegal matter.

* Participants were asked to respond "yes" or "no" to the question: "Do concerns about medicolegal issues affect how you relate to patients in that you:" (statement in the item column). † The number who responded to the item. ‡ The number (%) who agreed with the statement. § Percentage of respondents with experience of MLM who answered "yes" to the item minus the percentage of respondents with no experience of MLM who answered "yes" to the item.

on a medical practitioner a duty to exercise reasonable care and skill in the provision of professional advice and treatment."¹⁹

Nineteen per cent of respondents believed that medical mistakes are rare. This is at odds with the patient safety literature which highlights the extent of adverse events and negligence in many developed countries.²⁰⁻²³

Our study has some limitations. The response rate of 36% was relatively low, but this rate is in keeping with some other studies of medical practitioners.²⁴ This study is the largest of its kind in Australia, and one of the largest in the world. The respondent sample represents 5% of the Australian medical labour workforce, 3% of all GPs and about 10% of each specialty group (ranging from 9% for physicians to 14% for obstetricians/gynaecologists).²⁵ A weighted analysis was conducted to adjust the estimated percentages, according to the proportions of GPs and specialty respondents based on Australian workforce data.²⁵ Almost all weighted percentages were very similar to the unweighted percentages — they differed by less than 3%. There were three exceptions, all with respect to the perceived change in behaviour due to concerns about medical negligence and complaints (Box 1). Ordering tests was estimated to be 60% (compared with 55%); tracking test results was estimated to be 53% (compared with 48%); and referring patients to specialists was estimated to be 51% (compared with 43%). These changes mainly reflect the higher weighting that was given to GP responses.

This Australian study, similar to studies in the US, Canada, UK, Japan and New Zealand, indicates that doctors perceive that their concerns about medicolegal issues impact on their practice of medicine. Also similar to international studies, many Australian doctors perceive they make increased referrals and order tests due to concerns about medical negligence and complaints. However, there is considerably less impact on the prescribing of medications in Australia.

Doctors' experience of a medicolegal matter may lead them to consider reducing their hours of work and the years they intend to practise. For some doctors, there is a greater reserve in dealing with patients.

A significantly higher number of doctors with experience of a medicolegal matter state their intention to give up medicine, reduce their working hours or retire early. Whether they actually do was not investigated by this study.

Appropriate education for doctors would include knowledge of the medicolegal envi-

ronment and an understanding of how medicolegal concerns may weaken sound clinical judgement, cause unnecessary costs, burden health care resources, and constrain improvements in health care delivery.¹⁵ Targeted training in patient safety and medicolegal aspects of medical practice will help doctors to be better informed and to better understand how such issues influence their judgement and decisionmaking.

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COMPETING INTERESTS

None identified.

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CHAPTER 11: Discussion

This chapter compares and contrasts my findings with the international literature within the original aims of this thesis: (1) to investigate the factors associated with Australian doctors' involvement in medico-legal matters; (2) to investigate the association between psychiatric morbidity, hazardous alcohol use and medico-legal matters in Australian doctors; (3) to investigate the perceived impact of medico-legal concerns on how Australian doctors practice medicine. The chapter concludes with a discussion of the strengths and limitations of my studies which are referred to as the HCCC study (n=40, doctors with a complaint before the Health Care Complaints Commission), the GP study (n=566, both interventional and non-interventional GPs) and the large study (n=2999, predominantly specialists, with a minority of GPs and trainees).

1. Factors associated with having a current medico-legal matter

1.1 Frequency of medico-legal matters

In the large study, 65 percent of respondents reported that they had been involved in a medico-legal matter at some time, with 14 percent involved in a current matter (Chapter 8). In the GP study, 59 percent reported their involvement in a medico-legal matter at some time and 13 percent had a current matter (Chapter 5). The two most common types of medico legal matters in both these studies were claims for compensation and complaints to a health care complaints body. These same two types of matters were the matters that were researched in the international literature.

Summary of findings

The large study and the GP study similarly found that being male and working in the interventional areas of medicine (surgery and obstetrics/gynaecology in the large study and interventional GPs in the GP study) were associated with a current medico-legal matter

(Chapters 7 and 8). An additional finding from the large study was that working longer hours was associated with increased risk of experiencing a current medico-legal matter. There were no significant differences in having a current medico-legal matter and age groups, being Australian or non-Australian trained, being a solo- or non-solo practitioner, or those who attended or failed to attend continuing medical education and or peer review (Chapter 8).

1.2 Gender

Both the GP study and the large study are consistent with the international literature on gender differences with male doctors more likely to be the subject of a claim for compensation or complaint than female doctors (Taragin et al 1992, Hickson et al 2002, Cunningham et al 2003, Firth-Cozens 2008). The multivariate logistic regression in the large study was able to account for other variables. This finding is not therefore a function of male doctors working more hours than females, or being more represented in interventional areas of medicine as these variables were taken into account in the analysis.

1.3 Interventional doctors and radiologists

Both the GP study (which compared interventional GPs with non-interventional GPs) and the large study, like the international literature, found doctors who practiced interventional medicine were more likely to be the subject of a medico-legal matter (Taragin et al 1994, Bark et al 1997, Hickson et al 2002, Hickson et al 2007, Chervenak et al 2007, Conklin et al 2008, Traina 2009, Klagholz et al 2010). International studies about radiology consistently report an increase in claims for compensation (Conklin et al 2008, Fileni 2010, Elmore et al 2005, Berlin 2005). Similarly radiologists in my large study had the third highest rate of claim for compensation of the specialty groups behind obstetrician/gynaecologists and surgeons.

1.4 Longer hours of work

The findings of my large study support the little evidence that there is of an association between longer hours of work and an increase in likelihood of experiencing a medico-legal matter (Hickson et al 2002, Kalucy 2002) with doctors in the large study who worked more than 40 hours per week having a higher number of medico-legal matters compared with those who worked less than 40 hours per week (multivariate analysis). Doctors working 50-59 hours per week were in the highest risk bracket for a current medico-legal matter in the large study (Chapter 8).

1.5 Factors not associated

My large study found that doctors who trained overseas did not have a higher rate of medico-legal matters, consistent with USA (Taragin et al 1992, Hickson et al 2002) and New Zealand studies (Cunningham et al 2003). Again there was little evidence on this issue prior to my study although there is some evidence from the UK (NCAS 2006) and Australia (Kalucy 2002) that overseas trained doctors have a higher rate of performance concerns.

My large study found that doctors who did attend Peer review and or Continuing medical education did not differ from doctors who did not, with regard to whether or not they experienced a medico-legal matter. This was in contrast to my pilot study of doctors with a complaint to the HCCC, which did find a correlation between higher numbers of educational meetings attended and lower number of complaints ($r=0.56$; $p<0.001$). However, the numbers in the large study, combined with the statistical analysis considering all variables make the findings of the large study more robust.

1.6 Summary

Thus my findings are consistent with international studies in that males and interventional doctors have a higher risk of experiencing a medico-legal matter. The large study also provides further evidence in three notable areas: there was a significant association

between having a current medico-legal matter and longer hours of work; there was no association between the doctor experiencing a current medico-legal matter and medical degree being obtained outside the host country and no association between the doctor experiencing a current medico-legal matter and attending peer review or continuing medical education.

2. Factors associated with psychiatric morbidity

2.1 Medico-legal matter

Both my large study and GP study found that having a current medico-legal matter was associated with increased psychiatric morbidity (Chapters 5 and 9). The small HCCC pilot study of doctors with a complaint before the New South Wales Health Care Complaints Commission found that 38 percent of those doctors reached case identification¹⁴ for psychiatric morbidity, but did not have a comparison group (Chapter 4). The HCCC result for case identification for psychiatric morbidity is similar to the 39 percent of doctors with a current medico-legal matter who reached case identification for psychiatric morbidity in the large study compared with 26 percent who reached case identification who did not have a current medico-legal matter in the large study ($p < 0.001$) (Chapter 9).

The majority of international studies rely on respondents' memory of their emotional response to complaints and claims for compensation. Studies from the USA (Charles et al 1984, Charles et al 1985, Charles et al 1988a, Charles et al 1988b, Martin 1991) UK (Bark 1997, Jain 1991, Mulcahy 1995), Canada (Cook 1992), New Zealand (Cunningham et al 2000, Cunningham et al 2003, Cunningham et al 2004) and Iran (Saber et al 2009) all report an increase in psychiatric morbidity with the presence of symptoms such as tension, frustration, anger, guilt, distress, shame, depression and thoughts of suicide; for many doctors this is a major life trauma. Only the Iran study (Saber et al 2009) used a formal psychiatric

¹⁴ Case identification for risk of psychiatric morbidity is based on a combined score of more than 4 for the total questionnaire. The questionnaire has 28 items and uses binary scoring for each item with the two least symptomatic answers scoring 0 and the two most symptomatic answers scoring 1.

morbidity measure (GHQ) and in fact they used the method and questionnaire from my HCCC study.

In the large study, respondents were asked their retrospective recall of the impact of the most recent matter (which could have been at any time past or present) on their health (Table 22). The results are similar to those found in international studies - increase in anxiety, depression, alcohol use and other medical problems. While these retrospective results have not been presented in the articles that make up this thesis, they have been presented at conferences and in a book Chapter (Nash et al in press).

Table 22: Recall of the impact on doctor's health of most recent medico-legal matter from the large study of specialists, GPs and trainees.

Did you:	% who replied more than usual N=1902	% who sought professional help for this problem N=1902
Become anxious	73	9
Become depressed	44	8
Require anti-depressant medication	5	5
Drink alcohol	14	3
Use benzodiazepines	5	3
Have other medical problems	13	7

2.2 Long hours and no holidays

Other work related factors associated with increased psychiatric morbidity from my large study were not taking a holiday in the previous year and working long hours, with doctors working more than 50 hours per week having higher levels of psychiatric morbidity, and more so for those working over 60 hours per week (Chapter 9). This is in keeping with the themes of long hours and overwork of the international literature where overwork (Ramirez et al 1996, Firth-cozens et al 1990, Firth-cozens et al 1998, Bruce et al 2003), overload between work and home (Ramirez et al 1996, Firth-Cozens et al 1990, Firth-cozens et al 1998, Coomber et al 2002, Bruce et al 2003) and working long hours (Coomber et al 2002; Richardson et al 2003) were associated with psychiatric morbidity.

2.3 Personality

The personality traits of neuroticism and introversion were associated with increased psychiatric morbidity in doctors in my large study (Chapter 9) consistent with international studies. Higher neuroticism scores (McManus et al 2004, Newbury-Birch et al 2001, Tyssen et al 2001), were predictive of mental health problems and also in the Australian predictive longitudinal study¹⁵. Introversion in medical graduates (McManus et al 2004) and introversion in female doctors but not male doctors (Newbury-Birch et al 2001) was also a risk factor for psychiatric morbidity.

2.4 Factors not associated

Doctors aged 60 years and over in my large study were less at risk of psychiatric morbidity than younger doctors (Chapter 9) in keeping with Peisah and colleagues' study (2009) of older Australian doctors. However, it could be that doctors over 60 years who are either less satisfied or more stressed with their work simply retire, leaving only those with lower risk of psychiatric morbidity remaining in practice.

Interestingly, there was no significant difference between males and females in case identification for psychiatric morbidity in either the large study (Chapter 9) or the GP study (Chapter 5). This is an interesting finding considering the reliability of the GHQ, the size of the samples and the conflicting data internationally on gender and psychiatric morbidity. My findings are in keeping with the results of the three prospective studies of medical students to doctors in England (Firth-Cozens 1998), Norway (Tyssen et al 2001) and Australia (Willcock et al 2004) where no gender differences in rates of psychiatric morbidity were found. However, this is in contrast to cross sectional studies in which females had consistently higher rates of psychiatric morbidity than males (Ramirez 1996, Wall et al 1997, Newbury-Birch 2001).

¹⁵ Personal communication with Simon Willcock- author of Willcock et al 2004

There was no association between marital status and psychiatric morbidity in my large study in the multivariable analysis (Chapter 9). This result is at odds with the international literature in which being partnered is associated with lower psychiatric morbidity (Ramirez 1996, Tyssen et al 2001, Hayasaka 2007, Sharma et al 2008).

3. Factors associated with hazardous alcohol use

3.1 Medico-legal matters

The GP study found that potentially hazardous alcohol use was significantly associated with having a current medico-legal matter (univariate analysis and binary logistic regression) (Chapter 5). However, the large study of specialists, GPs and trainees found an association between potentially hazardous alcohol use and a current medico-legal matter in the univariate analysis ($p < 0.001$), but not in the multivariate logistic regression that considers all the other variables, although the association approached significance ($p = 0.09$) (Chapter 9). The retrospective component of the study reported above (table 22) found that 14 percent of doctors recalled drinking alcohol more than usual during their most recent matter.

Other studies also confirm an increase in alcohol use for a proportion of doctors during the stress of a medico-legal matter; Wenokur and colleagues (1991) found that alcohol use increased during a law suit in 11 percent of respondents, similar to the findings of my retrospective question on alcohol use where 14 percent of respondents recall using alcohol more than usual. Likewise, in other studies, at times of increased stress, some doctors increase their alcohol intake (Ramirez et al 1996, Newbury-Birch 2001(b), Taylor et al 2007).

Factors significantly associated with potentially hazardous alcohol use from the large study were being male, being Australian-trained compared with non-Australian trained, aged between 40 and 59 years, the personality traits of neuroticism and extraversion, failing to meet Continuing Medical Education requirements, and being a solo practitioner (Chapter 9).

3.2 Gender

The GP study (Chapter 5) and the large study (Chapter 9) found that males were more at risk of hazardous alcohol use than females. This is consistent with community samples (Australian Bureau of Statistics 2007, Kessler et al 1993) and doctor samples (Rosta 2008, Rosta et al 2005, Taylor 2007).

3.3 Not meeting continuing medical education requirements

My GP study found no difference in potentially hazardous alcohol use for GPs who attended peer review or formal education (eg conferences) and those who did not. However, my large study found that doctors who had not met their continuing medical education requirement had increased risk of hazardous alcohol use. This is similar to Kalucy's (2002) review of doctors referred to the Health Committee of the South Australian Medical Board for health problems such as drug misuse or mental illness. Not attending continuing medical education was reported as a "common" feature of those doctors. It may be that education sessions are important from a 'learning' point of view, as well as a time for collegial support.

3.4 Solo practitioners

Being a solo practitioner in the large study was also associated with potentially hazardous alcohol use. This finding echoes Kalucy's study (2002) of doctors with drug misuse and mental illness being "over represented" in solo practice. My studies were cross sectional, and therefore cause and effect cannot be determined, however, one can hypothesise that doctors with alcohol problems may gravitate towards solo practice, or is it that solo practice may be more isolative and stressful and that alcohol is a negative coping strategy for some.

3.5 Factors not associated

Doctors who worked long hours or had not taken a holiday in 12 months were less associated with hazardous alcohol use than doctors who worked fewer hours and had taken a holiday in the past year. This is the opposite of the psychiatric morbidity findings where doctors working long hours with no holiday in the previous year were more likely to have psychiatric morbidity. Perhaps the hours of work and on call commitments reduce the occasions to have an alcoholic drink, but the heavy hours and lack of holidays increase the psychiatric morbidity. Another possibility is that doctors who are drinking more hazardously may be working less hours.

My large study did not find an association between any particular specialty (or GP or trainee) and potentially hazardous alcohol use (Chapter 9) in contrast to increased incidence of hazardous alcohol use in surgeons as found by Rosta (2008) and Rosta et al (2005).

4. The perceived impact of medico-legal concerns on how Australian doctors practice medicine

My GP study and my large study of specialists, GPs and trainees, found a high level of concern about medico-legal issues, irrespective of whether they had experienced a medico-legal matter themselves. However, for many of the items (listed in Chapters 6 and 10), doctors with experience of a medico-legal matter had a more extreme response.

Comparisons of the GP study and the large study findings with international studies are itemized in table 23. This is from Table 2, Chapter 3, with the addition of my GP and large studies at the bottom of the table for ease of comparison.

4.1 Assurance Behaviours

4.1.1 Referrals to specialists more than usual due to medico-legal concerns was reported by 66 percent of the GP study and 43 percent of the large study (who were mainly specialists, therefore likely to refer less). There was no difference in either study between doctors who

had experienced a medico-legal matter and those who had not. A weighted analysis (reported in Chapter 10) was undertaken to adjust the large study results according to the proportions of GPs and specialty respondents based on the Australian workforce. The increased GP weighting in the large study resulted in an increase in referrals to 51 percent. Comparisons with international studies for this item range from 52 percent (Studdert et al 2005) to 80 percent (Catino 2009) (see table 23).

Table 23: Assurance and avoidance behaviours due to medico-legal concerns*

Country; sample type; study type, author and year	Respondent sample size and Response rate	Percent who refer patients to specialists more than usual	Percent who order tests or procedures more than usual	Percent who prescribe medication more than usual	Percent who are more selective regarding patients seen	Percent who avoid or stop certain procedures
USA; sued doctors; self report survey, Charles et al 1984	n=154 rr 34%		62		42	28
USA; All drs who practice obstetrics; 1982-88 insurance file review, Rosenblatt 1990	n=690 100% file review					25% stopped obstetrics in 6 year period
Canada; GPs and Specialists; self report survey, Cook 1994	n=171 rr49% GPs rr71% specialists.					50% GPs 45% Specialist
England; GPs; self report survey, Summerton 1995	n=300 rr 60%	64	60	29	25	42
Australia; obstetric rural GPs; self report survey, Watts 1997	n=167 rr 82%				14%stopped obstetrics previous 12 months	14% stopped obstetrics in previous 12 months
England; Consultants and registrars in acute hospitals; self report survey, Bark 1997	n=769 rr 76%					30% Surgical doctors and 20%of Non-surgical:
US; on-line self report; Common Good 2002	N=300 rr not given	74	79	41		

Country; sample type; study type, author and year	Respondent sample size and Response rate	Percent who refer patients to specialists more than usual	Percent who order tests or procedures more than usual	Percent who prescribe medication more than usual	Percent who are more selective regarding patients seen	Percent who avoid or stop certain procedures
US; on-line witnessed in colleagues; Common Good 2002	N=300 rr not given	85	91	73		
US; radiologists; self report survey, Elmore 2005	n=139 rr 77%		72% more mammography or ultrasound, 59% more breast biopsy			35% consider stopping mammography
US; high risk of litigation doctors; self report survey, Studdert 2005	n=824; rr 65%	52	59	33	39	32
Japan; gastroenterologists; self report survey, Hiyama 2006	n=131 rr 77%	68	36	16	75	75
Italy; GPs; self report survey, Catino 2009	n=300 rr 30%	78% in past month			26% in past month	
US, primary care and specialists; self report survey, Bishop 2010	n=1231; rr 51%		91			
US, self report survey; Carrier 2010	n=4720 rr 62%	60	64			
Puerto Rico; all doctors in San Juan district; self report survey, Cruz 2010	n=951 rr 30%				50% do not accept high risk patients	48% do not accept emergency cases
Australia; GPs; self report survey, Nash 2009	n=566 rr 46%	66	73	19		49% avoid an obstetric procedure 49% avoid an invasive procedure
Australia; specialists, GPs, trainees; self report survey, Nash, 2010	n=1360 rr=36%	43	55	11	27	34% avoid an obstetric procedure 40% avoid an invasive procedure

* Studies in chronological order apart from the GP study (Nash et al 2009) and large study (Nash et al 2010) added at end.

4.1.2 An increase in test ordering due to medico-legal concerns is associated with increased costs and may be potentially dangerous. Increased test ordering was perceived to occur with 73 percent of the GP sample with no difference for GPs who had and had not experienced a medico-legal matter. Similarly, 55% of the large study believed they ordered more tests due to medico-legal concerns, with significantly more doctors who had experienced a medico-legal matter reporting an increase compared to those who had not (57 percent v 52 percent, $p=0.01$). Comparisons with international studies range between 60 percent in Summerton's study (1995) and 91 percent in the US Bishop et al study (2010) (see table 23).

4.1.3 Similarly, prescribing medication more than usual due to medico-legal concern is costly as well as exposing patients to risks of side effects and complications. However, only 11 percent of the large study reported prescribing medications more than usual, with no difference for doctors who had and had not experienced a medico-legal matter. In the GP study, 19 percent of respondents reported that they prescribed medication more than usual due to medico-legal concerns and this was significantly more for those doctors who had experienced a medico-legal matter compared to those who had not (23 percent v 15 percent, $p=0.018$). Comparisons with international studies range between 16 percent in Hiyama's Japanese study (2006) to 41 percent in the US Common Good study (2002) (see table 23). Australia has invested in campaigns for safe prescribing over the past decade and this may have had a positive effect on prescribing (NSW Therapeutic Advisory Group Inc. Guidelines, accessed 2010).

4.2 Avoidance Behaviours

4.2.1 Selectivity of patients was also an outcome of medico legal concern and experience with 27 percent of the large study perceiving they were more selective regarding patients seen due to medico-legal concerns. This was significantly more for those doctors who had experienced a medico-legal matter compared to those who had not (33 percent v 17 percent, $p<0.001$).

This item can be interpreted in many ways and there was great variation in the literature on this item (see table 23). Summerton's GP study (1995) reported 25 percent were more selective regarding patients seen, compared with 75 percent of Japanese gastroenterologists (Hiyama 2006).

4.2.2 Avoidance of certain procedures was reported by thirty-four percent of the 813 who replied to the item on avoiding certain obstetric procedures in the large study (2109 answered not applicable). This was significantly more for those doctors who had experienced a medico-legal matter compared to those who had not (39 percent v 25 percent, $p < 0.001$). The large study also found that 40 percent of respondents perceived they avoided a particular type of invasive procedure due to medico-legal concerns, and significantly more for those doctors who had experienced a medico-legal matter compared to those who had not (42 percent v 36 percent, $p = 0.01$). The GP study found that 49 percent avoided particular obstetric procedures (60 percent answered not applicable to this item) and 49 percent perceived they avoided a particular type of invasive procedure due to medico-legal concerns. Comparisons with other studies range from 14 percent of Australian rural GPs stopping obstetric practice in the 12 months prior (Watts, 1997), and 50 percent of GPs avoided or stopped certain procedures in the Canadian study (Cook 1994) (see table 23).

This avoidance of certain patients and procedures has workforce implications particularly in rural and remote Australia. This is also a feature of practice in other countries where medico-legal concerns are high.

4.3 Reducing hours of work or years in practice

In addition to stopping certain procedures, many doctors consider reducing their hours of work or years in practice. In my large study 33 percent considered giving up medicine, 32 percent said they considered reducing hours of work and 40 percent thought of retiring early due to medico-legal concerns. These were all significantly more for doctors who had

experienced a medico-legal matter than those who had not (Chapter 10). Similarly, in my GP study, 48 percent of respondents perceived that medico-legal factors made them consider retiring early from medicine, and again this was significantly more for doctors who had experienced a medico-legal matter than those who had not (52 percent v 43 percent, $p=0.038$). Accelerated retirement is a particular issue with Australia's workforce shortage. Cunningham et al (2004), in their New Zealand study of doctors who had a complaint against them, reported that one of the long term impacts of being the subject of a complaint was that nine percent of those doctors did not wish to keep on practicing medicine.

4.4 Changes in the way doctors relate to patients

Changes in the way doctors relate to patients due to medico legal concern and or experience was variable. Fifty-five percent of respondents believed they were more attentive with patients, 26 percent reported being more empathic with patients, but 18 percent reported that they had become more distant from patients due to medico-legal concerns. In all these items, doctors who had experienced a medico-legal matter were significantly more likely to agree with the statements than those who had not experienced a medico-legal matter. In Cunningham and colleagues' (2004) New Zealand study of doctors who had been the subject of a complaint, 38 percent of doctors in the short term and 32 percent in the long-term reported a reduction in trust of patients and 29 percent in the short term and 18 percent in the long term reporting a reduction in goodwill to patients. Similarly 38 percent of doctors from the US Commongood study reported that the fear of malpractice made their relationship with patients less personal.

4.5 Communication inadequacies

Communication inadequacies were perceived to be a factor in most mistakes by 94 percent of respondents in the large study, 93 percent in the GP study and 78 percent in the HCCC study. Interestingly in both the GP and large studies, significantly fewer doctors with

experience of a medico-legal matter said communication was a factor compared to those who had not experienced a medico-legal matter. Perhaps a minority of those who had been the subject of complaint or negligence claim did not believe their communication to be inadequate. Studies and commentaries in Australia (Anderson et al 2001, Taylor et al 2004) and overseas (Bark et al 1997, Cunningham 2006, Hickson et al 2002, Ramirez et al 1996, Clinton et al 2006) all report that communication is an issue in the majority of medico-legal matters, and recommend training to improve communication skills in doctors.

4.6 Potentially safer practice changes

In addition to assurance and avoidance behaviours, doctors also perceive they make efforts to improve the quality and safety of patient care. These changes are potentially beneficial for patients, doctors and health care in general. Providing more information to patients was reported by the majority of respondents in the large study (81 percent) with significantly more for doctors who had experienced a medico-legal matter than those who had not (83 percent v 78 percent, $p < 0.001$). This is similar to international studies where doctors provide more information to patients in eighty percent of the Canadian study due to medico-legal concerns (Cook et al 1994) and 87 percent of Summerton's English GP sample (1995).

Better tracking of test results due to medico-legal concerns was reported by 48 percent of the large study and 70 percent of the GP study with no difference in either study for those who had and had not experienced a medico-legal matter. Better methods to identify non-attenders due to medico-legal concerns was reported by 39 percent in the large study, with a significant difference in those who had experienced a medico-legal matter compared with those who had not (41 percent v 34 percent, $p = 0.001$), and 36 percent in the GP study (no difference between those who had and had not experienced a medico-legal matter). Routine auditing of clinical practice due to medico-legal concerns was believed to have occurred more than usual by 35 percent of the large study and 47 percent in the GP study with no difference

in either study for those who had and had not experienced a medico-legal matter.

Summerton's study (1995) found that development of audit systems within the practice was reported by 34 percent of his GP sample due to medico-legal concerns (Summerton 1995). However, other than this, there is very little in the literature for comparison with tracking of tests, identifying non-attenders and auditing clinical practice.

5. Legal risk

My three studies explored the doctor's understanding of the law as it relates to mistakes and adverse outcomes. There was near universal agreement that doctors make mistakes, with 98 percent in the large study, 97 percent in the GP study and 94 percent in the HCCC study agreeing with the proposition. However, 54 percent of the large study, 64 percent of the GP study, and 39 percent of the HCCC study believed that the law requires them to make perfect decisions. In both the large and the GP study this was significantly greater for those who had experienced a medico-legal matter compared with those who had not (large study 56 percent v 50 percent, $p < 0.001$, GP study 68 percent v 59 percent, $p = 0.038$). Yet the law does not require perfection. The majority decision of the High Court of Australia in *Rogers v Whitaker* (1992) established that "*The law imposes on a medical practitioner a duty to exercise reasonable care and skill in the provision of professional advice and treatment*".

Despite the belief by nearly all respondents that all doctors make mistakes, 19 percent of respondents in the large study and 21 percent in the GP study believed that medical mistakes are rare. This is at odds with the patient safety literature which highlights the extent of adverse events and negligence in many developed countries (Brennan et al 1991, Thomas et al 2000, Wilson et al 1995, Vincent et al 2001).

6. Strengths of the research method

The strengths of my research method were the reliable and valid measures used (GHQ AUDIT, EPQ), the large sample size in both the GP and the large study, the statistical methods, the comparison between doctors who had and had not experienced a medico-legal matter, and the ability to compare respondents with non-respondents on key demographic items, type of practice, and history of medico-legal matters through the insurance company data.

6.1 Measures

The use of the GHQ, AUDIT and EPQ, has not been done in other studies of doctors involved in medico-legal matters prior to this research. In fact my method has already been used elsewhere (Saber et al 2009).

The legal risk questions were developed for the HCCC pilot study, and were found to have face and construct validity. These were expanded using questions from the international literature to explore changes of practice due to medico-legal concerns. There was no previous standardised questionnaire for this part of the study.

6.2 Size of samples and representation of Australian doctors

The GP study represented three percent of the Australian GP workforce (2005 data), and was similar in gender distribution and hours of work. Women made up 35.8 percent of the respondents compared with 36.5 percent in the 2005 workforce data, and respondent mean hours of work per week was 40.9 hours compared with 39.9 hours for GPs per week of the 2005 workforce data (Australian Institute of Health and Welfare, 2008).

The large study of 2,999 Australian doctors is the largest of its kind in Australia, and one of the largest in the world. It represents five percent of the Australian medical workforce and around 10 percent of the non-GP specialist groups (ranging from nine percent for

physicians to 14 percent for obstetricians and gynaecologists) (Australian Institute of Health and Welfare, 2008). The mean number of hours worked per week by doctors in my large study was 44.8 overall; with 48.0 for males and 37.1 for females. This was similar to the 2005 workforce data for doctors with mean hours worked per week of 43.7; with 46.7 for males and 37.6 for females. However, the mean age of doctors in my large study differed from the workforce data. My sample mean age was 51.7 years; with 53.6 years for males and 46.9 years for females. This was higher than the mean age in the 2005 survey of 45.1 years overall; 47.3 years for males and 40.6 years for females. This is due to the exclusion of most junior doctors from my large study.

6.3 Statistical methods

The large study with 2,999 subjects could detect differences which otherwise might have been missed in a small sample. Comparisons between those with and those without medico-legal experience in the change of practice and understanding of legal risk parts of the study (reported in Chapter 10) were reported as statistically significant at $P \leq 0.01$ due to the large sample. Doctors who had experienced a medico-legal matter responded in a significantly different way to many of the items, but often all doctors perceived they changed their behaviour. The multivariate analysis in the large study for factors associated with medico-legal matters and psychiatric morbidity and alcohol use in Australian doctors meant that the results were adjusted for the other variables in the model.

7. Limitations of the research method

There are four limitations of the research: the response rate of the large study, the lack of an objective measure of change in practice, the potentially over-inclusive self report compared with insurance company data on medico-legal matters and the lack of longitudinal data. These are discussed below.

7.1 Response rate

Response rates in studies of doctors are frequently low, as evident in the literature discussed in Chapters 2 and 3. The HCCC response rate and the GP study response rate were moderate (60 percent in HCCC, and 46 percent in GP study). However, the large study was relatively low at 36 percent and therefore there is the potential for responder bias. However, through the insurance company database, comparisons were done by the insurance company between respondents and non-respondents with respect to age, sex and type of medico-legal matter as described in Chapter 8, 9 and 10. Although there were statistically significant differences in age and sex, the differences were very small. Our results may have slightly overestimated the occurrence of medico-legal matters as 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, and there was no difference in the other nine types of medico-legal matters according to the insurance company data.

To further examine the non-response issue for the factors associated with medico-legal matters, a sensitivity analysis was conducted by weighting the results according to the response rate of each specialty in Chapter 8. This made little difference. Similarly, a weighted analysis was conducted to adjust the estimated percentages weighted according to the proportions of GPs and specialty respondents based on workforce data for the change of practice component of the study reported in Chapter 10. Only three weighted percentages differed by more than three percent from the un-weighted percentages: ordering tests was estimated to be 60 percent (compared with 55 percent); tracking test results was estimated to be 53 percent (compared with 48 percent) and refer patients to specialists 51% (compared with 43 percent). These changes mainly reflect the higher weighting that was given to GP responses due to the smaller proportion of GPs in the sample compared with workforce data.

7.2 Lack of objective measure of change in practice

As found in Elmore and colleagues' study (2005), the objective measure of the radiologists' actual recall rates for breast biopsy after mammography was not associated with their perceptions of whether they increased their recall rates due to malpractice concerns, or their experience of malpractice. Additionally, in that study and the Common Good study (2002), doctors thought that their colleagues, rather than themselves, were more likely to change practice as a result of medico legal concerns. While perception may not represent actual change, it is a measure of concern. Further research using objective measures, as in Elmore et al's study (2005), is required. My findings of perceived changes in behaviour and beliefs about the practice of medicine indicate a high level of concern regarding medico-legal issues.

7.3 Potentially over-inclusive self report data

The GP study compared level of agreement between self-report data and the medical insurance company data on frequency of medico-legal matters. Ninety per cent of GPs who had a current or past medico-legal matter recorded by the insurance company recorded a current or past matter in self report data. However, thirty-four percent of GPs who did not have a medico-legal matter recorded by the insurance company did record a matter in self-report data. This was likely due to the fact that respondents were asked to include all matters, either with the collaborating insurance company or other insurer, and possible over-inclusion with self-report data referring to a medico-legal matter that the insurance company may not regard as such (Chapter 5). Both the GP and large studies defined medico-legal matter to include a very broad range of matters in the questionnaires. In retrospect, it may have been better to narrow this to claims for compensation and complaints to a complaints body. This would have made comparison with international literature more direct. Claims for compensation and complaints to a complaints body were the most common types of medico-

legal matters in both my GP and large studies. The HCCC study was obviously limited to doctors with a current complaint before the HCCC.

7.4 Lack of longitudinal data

A longitudinal study is needed to compare the baseline measures of GHQ and AUDIT with changes over the time of the medico-legal process for those doctors. This would answer the 'chicken and egg' question of whether doctors who are involved in a medico-legal matter have increased psychiatric morbidity due to the medico-legal process, or do their higher levels of psychiatric morbidity make them more likely to be the subject of a claim, complaint or inquiry? This question can not be answered from my cross sectional studies. However, the retrospective component of my large study found that many doctors recall the medico-legal matter impacted on their health causing the doctor to become more anxious in 73 percent, more depressed in 44 percent, and to increase their alcohol use in 14 percent. This is consistent with the international literature. However, it may be that both directions (chicken and egg) are involved in a reciprocal fashion as in the literature on psychiatric morbidity and increased error, and error and increased psychiatric morbidity (Firth Cozens 1997, West et al 2006, West et al 2009, Shanafelt et al 2010, Fahrenkopf et al 2008).

A suggested longitudinal qualitative study could use a small sample of doctors with in depth interviews every 6 months for two years commencing as the medico-legal matter started. The AUDIT and GHQ could also be used as self report measures for quantitative analysis. Additional measures for depression and burnout would also be appropriate. For cohesion in the study, and ease of comparison with international literature, the medico-legal matters could be limited to claims for compensation and or complaints to a Complaints body such as the New South Wales Health Care Complaints Commission.

8. Summary of Findings

Over half Australian doctors will experience some kind of medico-legal matter during their career. Approximately 14 percent will have a current matter at any time, the most common of which are claims for compensation and a complaint to a complaints body.

Factors associated with experiencing a medico-legal matter are being male, working in the interventional areas of medicine and working long hours.

Experiencing a medico-legal matter is reported in the international literature as being a major trauma for many doctors, with an increase in psychiatric morbidity reported by international studies and for some an increase in alcohol use. Factors associated with psychiatric morbidity in Australian doctors include having a current medico-legal matter, not taking a holiday in the previous year, working long hours, and having the personality traits of neuroticism or introversion. Factors associated with potentially hazardous alcohol use in Australian doctors are being male, being Australian-trained, being between 40 and 59 years of age, having the personality traits of neuroticism or extraversion, failing to meet Continuing Medical Education requirements and being a solo practitioner. There was weaker evidence that having a current medico-legal matter is associated with hazardous alcohol use. Whether this is cause or effect, or indeed both, can not be discerned from my research.

Australian doctors have a high level of concern about medico-legal issues. They perceive that this impacts on their practice in both potentially beneficial and potentially detrimental ways. There are changes to practice that are both costly and have the potential to harm patients as a result of additional tests or medications and there are changes that are potentially beneficial with efforts to improve communication and the safety and quality of health care.

There continues to be some confusion with the doctors understanding of the law as it relates to mistakes and adverse outcomes with around half of the respondent doctors believing

the law requires them to make perfect decisions. However, the law does not require perfection but “*a duty to exercise reasonable care*” (Rogers v Whitaker 1992). Further education is recommended on this and other issues relating to this research in the following and final chapter.

CHAPTER 12: Conclusions and Recommendations

I make the following three recommendations as a result of this research.

1. Medico-legal matters and Australian doctors

I have presented both the factors associated with Australian doctors being the subject of a medico-legal matter and the factors associated with psychiatric morbidity and or hazardous alcohol use in Australian doctors. A medico-legal matter was one of those factors. I have also investigated perceived changes to medical practice by Australian doctors because of medico-legal concerns. There was a mixture of assurance behaviours with additional referrals, tests or medications which may or may not assist the patient, but cost the health service, and avoidance behaviours where some patients or treatments are avoided which may deprive some communities of services. In addition, my findings highlight potential system improvements as a result of many doctors instituting better systems of tracking results, and better methods of identifying non-attenders and auditing clinical practice due to medico-legal concerns. The research outcomes also strongly suggest medico legal concerns have an impact on workforce availability with around a third of Australian doctors considering reducing their hours per week and years in practice. This is more so for doctors who have experienced a medico-legal matter compared with those who have not.

In addition, my findings indicate that doctors misunderstand some aspects of the law as it relates to mistakes and adverse outcomes. Having greater understanding about the law, the frequency of medico-legal matters and the type of matters (claims for compensation and complaints to a complaints body being the commonest), who is most likely to experience a medico-legal matter and the possible outcomes is important knowledge for doctors.

From this research we know that males, those in high intervention areas and working longer hours, are most likely to experience a medico-legal matter. We also know that most doctors find this an emotionally difficult time with anxiety and depressive symptoms

common. Having a greater understanding of both the law and the emotional response may help doctors cope better with this work stressor, and also may be a preventative strategy – to prevent distress, and possibly prevent medico-legal matters. Education may enable some doctors to see where they could improve areas of their practice. For example, communication is seen as a factor in most matters and improved skills in this area may prevent a proportion of claims, complaints and inquiries (Clinton and Obama 2006, Anderson et al 2001, Tayler et al 2004, Ramirez et al 1996, Hickson et al 2002, Cunningham et al 2006, Bark et al 1997).

Recommendation 1:

All doctors should have targeted education on medico-legal matters to improve their knowledge of legal aspects, the frequency and factors associated with and the emotional and behavioural sequelae of experiencing a medico-legal matter. An introductory workshop presented in the final years of medical school would be an ideal time considering that junior doctors are not immune to these experiences. More advanced education could be part of professional development through workplace training, College programmes, and medical insurance company education. Health Care Complaints bodies should be aware of these findings even though they may not provide education to the workforce.

Such a workshop would also aim to improve communication skills. Again this is appropriate for all stages of medical education from medical school to senior doctors. Whether a greater understanding of medico legal matters will have other benefits such as improved morale, more productivity, better relationships with patients are areas for further study.

2. Psychiatric morbidity and alcohol use in Australian doctors

Medical registration requires a practitioner is fit to practice. I have presented key work factors that are associated with psychiatric morbidity in Australian doctors which include having a current medico-legal matter, not taking a holiday in the previous year and working

long hours. Demographic and work factors associated with potentially hazardous alcohol use include being male, Australian-trained, a solo practitioner, aged between 40 and 59 years and failing to meet Continuing Medical Education requirements. The personality traits of neuroticism or introversion make a doctor more at risk of psychiatric morbidity, while neuroticism or extraversion make a doctor more at risk of potentially hazardous alcohol use.

The mental health of medical practitioners is important not only for the doctor and their family, but for the provision of quality patient care. Recent studies indicate a reciprocal relationship between the risk of psychiatric morbidity in doctors and the risk of real (Fahrenkopf et al 2008) or perceived error (West et al 2006, West et al 2009, Shanafelt et al 2010).

Recommendation 2:

This Australian data on psychiatric morbidity and hazardous alcohol use in doctors can be used in medical and workforce education to inform medical students and doctors of risks and encourage prevention and early intervention. My findings can inform such medical education and workforce planning. Unlike gender, age and personality traits, work and lifestyle factors associated with psychiatric morbidity and hazardous alcohol can be addressed. Doctors should reflect on their hours of work and need for holidays. Again such education can take place in medical schools and the workplace.

Involvement in a medico-legal matter is a stressful part of medical practice today and being better informed about this aspect of work is important as part of self care of doctors to enable provision of optimal care to patients (Wenokur et al 1991). Positive coping strategies (Wenokur et al 1991), such as knowledge of the psychological consequences, cognitive reframing and collegial and personal supports (Martin et al 1991) are to be encouraged and avoidance of negative coping strategies such as over-work or excess alcohol or self-

medication.

Simple advice for doctors who are the subject of a medico-legal matter includes:

- Appreciate that a medico legal incident will occur at some stage to the majority of doctors, even though it is a rare event in the life of any single doctor.
- Appreciate that many more patients could make a formal complaint or claim for compensation for negligence than ever do.
- Reflect on the experience and make appropriate changes to minimise the chance of this happening again.
- Seek advice from legal experts to be well informed and well prepared (Bell 2008, Bozic 2004).
- Be mindful of the impact on the doctor as either the subject of a matter or when a colleague is the subject.
- Understand that distress, depression and anxiety are common responses.
- Seek early advice from one's own doctor and avoid negative coping such as over work, drug and alcohol misuse.

3. The benefit of this empirical research and recommendations for further research

A significant benefit of this research is the greater understanding of the medico-legal experience for doctors in Australia. This removes the uncertainty associated with anecdotal evidence. The lack of empirical evidence of the Australian experience of medical negligence was noted by Ipp et al in 2002 in their Review of the law of negligence for the Commonwealth of Australia (2002). This has now partly been addressed by this research. We now have the empirical evidence on the doctors' experience of medico-legal matters in

Australia if another such review was to occur. However, further research is recommended to develop these findings.

Recommendation 3:

I recommend further research of in depth interviews of a cohort of doctors as they go through a medico-legal matter from start to finish. I recommend this to be limited to complaints against the doctor to a formal complaints body, and claims for compensation for negligence. These were the two commonest matters in my studies, and the two matters with the most international literature for comparison. Qualitative interviews could be undertaken at six monthly intervals, and map both the particularly difficult times, and the interventions that were or were not helpful. Collated, these experiences would guide assistance that could be given to doctors in the future. This would inform further the education recommended in recommendations 1 and 2, and assistance provided from medical insurance companies.

Finally, I recommend that the evidence presented in this thesis inform future discussions about systems of health care complaint and compensation in Australia to better understand doctors' responses to medico-legal matters.

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Appendix 1: Article on psychological impact published prior to candidature

Nash L, Tennant C, Walton M. The psychological impact of complaints and negligence suits on doctors. *Australasian Psychiatry*. 2004;12:278-281.

Richard Nash, Christopher Tennant and Marilyn Walton

Objective: To explore the psychological impact of complaints and negligence suits on doctors.

Methods: A survey of 100 doctors from 1998 to 2001 was conducted. All doctors were asked to complete a questionnaire.

Results: Doctors who had been involved in a complaint or negligence suit were significantly more likely to experience psychological distress, including depression and anxiety, than those who had not. Doctors who had been involved in a complaint or negligence suit were also more likely to experience physical symptoms, such as headaches and insomnia. The majority of doctors who had been involved in a complaint or negligence suit reported that they had been significantly affected.

Conclusions: A majority of the participants in the study reported that they had experienced psychological distress as a result of a complaint or negligence suit. The distress of doctors is a significant public health problem and should be addressed. The psychological impact of complaints and negligence suits on doctors is a significant public health problem and should be addressed. The psychological impact of complaints and negligence suits on doctors is a significant public health problem and should be addressed.

Keywords: complaints, doctors, psychological, public health, negligence.

One of the most common reasons for doctors leaving their profession is the experience of a complaint or negligence suit. The psychological impact of these events is often severe and long-lasting. Doctors who have been involved in a complaint or negligence suit are more likely to experience depression, anxiety, and physical symptoms such as headaches and insomnia. The majority of doctors who have been involved in a complaint or negligence suit report that they have been significantly affected. The psychological impact of complaints and negligence suits on doctors is a significant public health problem and should be addressed. The psychological impact of complaints and negligence suits on doctors is a significant public health problem and should be addressed. The psychological impact of complaints and negligence suits on doctors is a significant public health problem and should be addressed.

The aim of this study was to explore the psychological impact of complaints and negligence suits on doctors. A survey of 100 doctors from 1998 to 2001 was conducted. All doctors were asked to complete a questionnaire. The questionnaire included questions about demographic information, the doctor's experience of a complaint or negligence suit, and their psychological and physical health. The results of the survey showed that doctors who had been involved in a complaint or negligence suit were significantly more likely to experience psychological distress, including depression and anxiety, than those who had not. Doctors who had been involved in a complaint or negligence suit were also more likely to experience physical symptoms, such as headaches and insomnia. The majority of doctors who had been involved in a complaint or negligence suit reported that they had been significantly affected. The psychological impact of complaints and negligence suits on doctors is a significant public health problem and should be addressed. The psychological impact of complaints and negligence suits on doctors is a significant public health problem and should be addressed. The psychological impact of complaints and negligence suits on doctors is a significant public health problem and should be addressed.

The psychological impact of complaints and negligence suits on doctors

Louise Nash, Christopher Tennant and Merrilyn Walton

Objective: To describe the psychological impact of complaints and negligence litigation on doctors.

Methods: A review of the literature from 1966 to 2003 was conducted. Additional sources were obtained from targeted experts and organizations.

Results: Doctors who have been sued or who have had formal complaints made against them describe the process as an extremely stressful experience. Depression and adjustment disorder were relatively common, while drug and alcohol abuse, physical illness and suicidal ideation were reported less frequently. The majority of doctors who have been the subject of a complaint or law suit practice more 'defensively'.

Conclusions: A complaint or law suit is uncommon in the daily practice of doctors, yet in today's medicolegal environment they pose a constant potential threat. The threat of, or actual, legal process can cause psychological, physical and behavioural practice changes. The obsessional personality of many doctors may make them particularly vulnerable to seeing the process as a challenge to their professional and personal identity.

Key words: complaints, doctors, malpractice, medical negligence, psychological impact.

One of the parliamentary requirements underpinning self-regulation by the medical profession is the establishment of effective complaint mechanisms for holding the medical profession accountable. In addition, the tort system provides a mechanism for patients seeking compensation. Media coverage of large compensation payments, the provisional liquidation of Australia's largest medical insurance company and the Australian Broadcasting Corporation television drama *MDU* have made these processes and activities more public. Beyond the eventual medical and financial outcome, there remains ongoing psychological sequelae for patients and doctors. The stress on patients (as plaintiffs or complainants) is recognized and has been explored.¹ The aim of the present paper was to examine the psychological impact of negligence suits and the medical complaints process on doctors, irrespective of the final legal outcome.

This issue is highly relevant to psychiatrists in a number of ways: first, as the doctors complained about; second, through the treatment of doctors going through the complaint process or as defendants in medical negligence claims; third, as medical colleagues; and, finally, as teachers of medical students and trainees. Although information about the number of negligence actions against Australian and New Zealand psychiatrists is not available, we do know that the medical boards in Australia and New Zealand and Australian State Health Commissions receive complaints concerning psychiatrists and psychiatric care in hospitals. These complaints concern boundary violations, inappropriate drug prescribing and incorrect diagnosis. There were 16 complaints

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(3.2% of total public hospital complaints) received by the Health Care Complaints Commission in the year 2000–2001 about public hospital psychiatric care, and two complaints (3.0% of total private hospital complaints) about psychiatric care in private hospitals.²

METHOD

A MEDLINE search of the published literature from 1966 to 2003 was conducted. Key words were 'medical negligence and doctors', 'malpractice and doctors' and 'complaints and doctors'. Additional articles were found from these sources. Some articles were forwarded to the authors from people interested in the field. Two recent annual reports of the Health Care Complaints Commission were accessed.

Few empirical studies on the impact of negligence suits and the medical complaints process on doctors exist, but there are many commentaries. Furthermore, the majority of empirical studies had a poor response rate. These studies used two sampling methods: first, assessing doctors in general; and second, assessing the subset of doctors who have either been sued or have had a complaint made against them. In reviewing the studies, we examined: (i) the frequency of a lawsuit or complaint; (ii) the impact on the doctor's psychological and physical well-being, and their sense of professional identity; and (iii) changes occurring in their practice of medicine, which can affect both the standard and cost of health care.

RESULTS

Frequency

In New South Wales (NSW), one doctor in 20 is the subject of a written complaint to the Health Care Complaints Commission.¹ In 1998–1999, 2052 complaints were lodged with the Commission. Less than 10% of these complaints resulted in some form of 'disciplinary' action: counselling, limiting conditions of practice, supervision of practice or deregistration.³ In 2000–2001, 2888 written complaints were received by the Commission.²

It is also known that nearly 2% of general practitioners insured with the medical insurance company United Medical Protection face a medical negligence claim each year. The figure varies considerably among the specialties. However, only 6% of the Australian litigated claims progress to trial, 28% are discontinued and 66% are settled out of court.⁴ At the extreme, in the USA, 77% of Fellows of the American College of Obstetrician and Gynaecologists have been sued at least once.⁵

An Australian postal survey of 464 randomly selected metropolitan general practitioners (46% response rate), found that the 'threat of litigation' was per-

ceived as the most severe work-related stressor even though it was considered an infrequent actual event.⁶

Impact on psychological and physical well-being

A qualitative study of the emotional response of 30 British general practitioners who had complaints made against them, found the following three stages of response: 'initial impact', 'conflict' and 'resolution'. The impact stage involved a sense of 'being out of control', a feeling of shock and panic, and indignation towards patients generally. The conflict stage included conflicts around professional identity, conflicts with family and colleagues, and conflicts arising from the management of the complaint. This was accompanied by feelings of anger, depression and suicidal ideation. The resolution stage involved defensive practice or, for some, plans to leave general practice. There was no resolution for a minority. Complaints were rarely perceived as learning experiences, and indeed one doctor stated that they were 'immune' to complaints, describing them as 'like parking tickets'.⁷

In Chicago, 5135 doctors were sued in the period 1978–1981. A postal survey of a random sample of 450 of these doctors (154, 34% surveys returned) showed that none had an adverse trial verdict. Nevertheless, two clusters of emotional symptoms were found in the respondents. Thirty-nine per cent of respondents had symptoms suggestive of 'major depression'. Although many of these failed to note the duration of symptoms, 27% of respondents noted that their symptoms lasted longer than 2 weeks. Twenty per cent of respondents had a symptom cluster thought to be suggestive of an 'adjustment disorder'. This included anger and four of eight other symptoms, including mood change, inner tension, frustration, irritability, insomnia, fatigue, gastrointestinal symptoms and headache. Only 4% reported no physical or emotional symptoms.⁸

In a related study, a random sample of 1000 Chicago doctors (including sued and non-sued doctors) was surveyed (37% response rate). Both the threat and actuality of litigation were found to cause emotional distress, with sued doctors reporting significantly more symptoms than non-sued physicians.⁹

In a second related study, a subset of 51 physicians who had been sued for medical malpractice was interviewed. Of these 51, five had gone to trial, with two having a trial verdict for the plaintiff and three for the defendant. The majority of suits filed against the doctors resulted in no payment to the plaintiff; thus, an adverse outcome itself is not the most significant issue. Nearly one-quarter (23%) identified litigation as their most stressful life experience. These doctors experienced more physical and emotional symptoms than their colleagues who identified some other event (such as death of spouse or divorce) as being their most stressful life experience. Indeed,

45% of the former compared with 15% of the latter reported symptoms suggestive of major depression.¹⁰

An unrelated US study of 620 sued and non-sued physicians in Southern USA (44% response rate), similarly found that malpractice litigation was a major life trauma. Stress symptoms in those who had been sued were highest during the first 2 years after the lawsuit, and later remained greater than non-sued physicians. Those who saw litigation as a job hazard and not an attack on their ability as physicians were better able to use adaptive coping mechanisms, such as improved office practices. This group also minimized negative coping, such as self-blame, and were more active participants in their defence.¹¹

Physical symptom sequelae are also noteworthy. In the Chicago study of sued doctors (n = 154), 8% of respondents noted the onset of a physical illness during the legal process: three respondents (2%) had a myocardial infarct during the time of litigation, while 11 (7%) acknowledged an exacerbation of a previously diagnosed illness. This study also found that 7% of respondents felt their families had also suffered as a result of the litigation.⁸

Impact on professional identity

In a qualitative study in Oregon, 11 doctors were interviewed regarding mistakes. Themes from this study include the ubiquity of mistakes; the infrequency of disclosure of mistakes to colleagues, family or friends; the lack of support from colleagues and the significant emotional distress on the physician. Their beliefs about 'perfection' may influence the severity of the distress, while their sense of competitiveness in medical training and practice influenced non-disclosure of mistakes.¹²

In a similar qualitative study, 30 doctors took part in an in-depth interview regarding the emotional impact of mistakes. The most common responses were self-doubt (96%), disappointment (93%), self-blame (86%), shame (54%), and fear (50%).¹³

The experience and attitude toward malpractice litigation were assessed in a postal survey of 287 Canadian medical practitioners. Sixty per cent responded. Of these, only 2% of the primary care doctors and 6% of specialists had been sued with damages paid, but more than 80% of respondents believed that a malpractice suit would cause serious short-term or long-term damage to reputation, regardless of outcome.¹⁴

In the Chicago study of 154 doctors who had been sued, 9% of respondents felt a loss of clinical nerve, and 15% felt a general loss of confidence as a physician. Nearly one in five (19%) believed that their medical practice had suffered, and one-third entertained thoughts of retiring early.⁸

The issue of professional identity was more specifically addressed in a postal survey of 848 specialist

doctors in the UK (52% response rate).¹⁵ Complaints caused feelings of fear, hurt, concern about reputation, distress at lack of understanding, and increased vulnerability. Thus, threat to identity occurs regardless of whether or not the allegation of error is considered to be justified. Some 90% of respondents discussed the complaint with another person, usually a colleague. The investigators concluded that complaints have a significant and lasting effect on doctors, initially causing a deconstruction of identity, followed by a reconstruction anchored in scientific rationality and support of peers. Complainants are commonly seen as psychologically ill or having problem personalities.¹⁵

Changes in medical practice

Changing one's practice as a result of the threat or actuality of litigation is a common finding.^{7,8,10,14,16} These changes can be seen as either positive or negative 'defensive' practice changes. Positive defensive practices include increased screening, development of audit or consumer satisfaction activities, more detailed record keeping and more extensive explanations to patients. Negative changes include prescription of unnecessary drugs and unnecessary increase in frequency of follow up, referral rates and diagnostic testing, as well as avoidance of certain treatments and even 'removal' of a patient from the practitioners' lists.¹⁶

In 500 randomly selected general practitioners in the UK (60% response rate), more than 30% of respondents worried about being sued or having a complaint lodged against them. Ninety-eight per cent of doctors claimed to have made some 'defensive' practice change in reaction to even the possibility of a complaint. There was a high correlation between defensive medical practice and the worry about being sued. Unfortunately, the correlation was stronger for negative defensive practices than positive practices.¹⁶

Defensive practice was defined differently in a Canadian postal survey (n = 172) as those practices designed to reduce the risk of prosecution (rather than those to benefit the patient). One-third of respondents indicated that they occasionally practised defensively, while 12% did so frequently.¹⁴

More specifically, increased diagnostic testing (when clinical judgement assessed this as unnecessary) was reported by more than 50% of the UK general practitioners¹⁶ and by 62% of sued doctors in Chicago.⁸

Similarly, there was an increase in specialist referrals in 50% of UK general practitioners.¹⁶ This was the most frequent practice change even in those sued Chicago doctors who did not regard litigation as their most stressful life event.¹⁰ Avoidance of procedures was reported by 50% of primary physicians in Canada¹⁴ and by 28% of sued Chicago doctors.

Indeed, 42% of respondents in the latter study stopped seeing certain kinds of patients.⁸

Information given to patients also increased: 80% of Canadians offered more information to patients,¹⁴ as did 50% of UK general practitioners,¹⁶ while 69% of sued US doctors kept more meticulous records (however, some 25% also recorded less 'pertinent' information).⁸

DISCUSSION

These studies are limited by their poor response rates and potential for bias. However, common themes that emerge include that the threat and actuality of a complaint or law suit can cause emotional and physical disequilibrium, and that there are both positive and negative changes in medical practice.

Individual and systemic factors influence how doctors cope emotionally and behaviourally with this process. The personality and professional identity of the doctor is significant. For example, obsessional traits may be useful in avoiding mistakes, but this may also then compromise the doctor's ability to cope when a complaint occurs.¹⁷ Many doctors are acutely sensitive to an accusation of failure to meet standards of care, with the implications of incompetence.¹⁸ Their sense of professional identity is at stake and the threat of damage to reputation can be devastating. Other factors influencing the doctors' response are the availability, or lack, of professional and personal support systems (and the doctors' willingness to use them), and the medical culture of infallibility, whereby errors in patient care may be viewed as manifestation of character flaws.¹⁹

CONCLUSIONS

The aforementioned studies suggest that the threat or actuality of a complaint or law suit can cause emotional, physical and behavioural changes. This is becoming increasingly important, given that complaints and litigation are increasing.

The complaint or litigation process is usually a long process and can be a chronic stressor. However, the process is not the sole cause of distress. The affront of a negative outcome for one's patient is painful, regardless of the cause. The personality style of many doctors may make them more vulnerable to this stressor, the process being viewed as an insult to their professional identity, coupled with a medical culture of infallibility and a sense of failing their codes of ethics.

Effort needs to be made to address physicians' fear of litigation and remove the stigma of implied 'failure to care'. This will require a change in attitude that medical mistakes come from a lack of incentive to take appropriate care.²⁰ The medical culture of doctors being infallible mitigates against mistakes being

openly discussed.²¹ Further empirical studies in this field will enable appropriate education of medical students and postgraduates to assist them to deal with this process. The aim is not only better and more cost-effective patient care, but also better mental health for doctors who have complaints made against them.

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Appendix 2: Bozic comment on the above psychological impact article

Bozic M. Comment. Australasian Psychiatry.2004;12:282.

COMMENT

SC Michael Bozic

The fight is won or lost far away from witnesses –
behind the lines, in the gym, and out there on the
road, long before I dance under those lights.

Muhammad Ali

The proposition that doctors find the process of litigation stressful is hardly counter-intuitive. After all, stress is an inherent part of the legal process for any litigant. Yet the articles reviewed by Nash, Tennant and Walton suggest, and experience confirms, that doctors frequently manifest a level of stress in excess of many 'ordinary' litigants. The authors have identified some of the causes for this excessive 'emotional and physical disequilibrium'. While factors such as the lack of professional and personal support systems, the personality and professional identity of the doctor and the medical culture of infallibility no doubt all play a part, there is a further factor. It concerns the way in which doctors deal, or are unable to deal, with the legal process.

A doctor's emotional response to the stress of litigation not infrequently manifests itself as anger, hostility and resentment. Although this may be both a natural and an understandable response to an allegation of negligence or professional misconduct, it is hardly conducive to the calm and orderly conduct of a defence case. From a lawyer's point of view, the problem is not that doctors react to allegations against them with anger, hostility and resentment, but that they are frequently unable to deal with the allegations against them except by reference to their own anger, hostility and resentment.

Thus, for example, at the initial conferences between a doctor facing a civil action for negligence and his or her lawyer, doctors frequently insist on describing their anger and resentment and go on to explain that the allegations against them are an insult to their professional integrity and to their reputation. Many doctors are incapable of viewing lawyers, including their own, as anything other than a sub-species of class enemy. They compulsively demand that their own lawyers understand that the increase in medical negligence litigation in general, and their case in particular, are wholly or in part due to a systemic failure on the part of lawyers, judges, courts and unidentified others.

From a lawyer's point of view, these matters are irrelevant. At best, they do not assist in the preparation and conduct of the case. At worst, they hinder

the preparation of the case and contribute to a less than satisfactory performance by the doctor in the witness box.

Lawyers understand that litigation is a stressful process. Lawyers do not go out of their way to make the process more stressful for their own client. Generally speaking, it is less stressful to run a case for a client with whom you are able to develop some empathy. Having said this, however, it must be recognized that the lawyer's primary function is not to provide emotional support and assistance for the doctor. The primary function is to provide legal services in the form of legal advice and legal representation. Ultimately, the lawyer's goal is to win the case, not to bring about the successful psychological rehabilitation of the doctor from the stress of litigation. For emotional support, the doctor must look elsewhere.

This does not mean, however, that the doctor must become a passive and frustrated bystander in the litigation. At the risk of gross oversimplification, the preparation and running of a case requires considerable work, such as taking a detailed statement from the doctor about the facts of the case, analysing the allegations and assessing how best to respond to the allegations. It involves the gathering of evidence and an assessment of what evidence should be used and what should be discarded. It involves working out how to destroy, damage or undermine an opponent's case.

There is much that the doctor who is a defendant can contribute to the preparation and defence of the case (after all, he or she is the defendant in a civil action or the person about whom complaints of misconduct are made). It does, however, require hard work, time and a willingness to forgo income in order to attend court not just while giving evidence but while the plaintiff or complainant and his or her experts are giving evidence. It also requires an understanding of what is relevant and of assistance and what is not.

Part of the adverse psychological impact referred to in the Nash *et al.* article is due to the failure of doctors to understand and embrace the legal process. Stripped to its core, litigation is a fight. As such, it will always be stressful. Yet the stress of litigation is only compounded by the refusal or the inability to move out of the comfort zone of one's own preconceptions. It is not suggested that dealing with allegations of negligence or professional misconduct is easy. It is not. But a starting point must be to understand, as Muhammad Ali understood, that in any fight, there is a lot to be done before one can dance under the lights.

Appendix 3: Introductory letter to doctors in the large study



THE UNIVERSITY OF SYDNEY

Dr Louise Nash,
MBBS (Hons)BA DipObs FRANZCP

Department of Psychological Medicine
Royal North Shore Hospital
ST LEONARDS NSW 2065

An analysis of the impact of complaints and law suits on the psychological health and well being of doctors

Dear Colleague,

Avant (formerly UNITED Medical Protection) recently wrote to you about a collaborative **research project between University of Sydney and Avant** addressing the impact of legal action, complaints and inquiries on the psychological health of doctors. I invite you to participate in this venture, which is **supported by the Doctors' Health Advisory Service** with ethics approval from Northern Sydney Central Coast Area Health Service Ethics Committee (protocol number 0602-008M). Please see over for more details on the research project.

Your individual identity will not be known to the research group. Your individual responses to these questionnaires will not be given to Avant.

All responses are identified by a research code (not Avant member code), and will be anonymous and confidential. Pooled data will be used for reporting results. Return of the questionnaire is taken as consent to the project. The more responses we receive, the more insight we will obtain from this research.

The questionnaire package will take less than 20 minutes to complete, and a self addressed envelope is enclosed for return of the completed package.

If you have any questions regarding this project please contact:

- **Dr Louise Nash** – Ph: (02) 9926 7746; lnash@med.usyd.edu.au
- **Prof Simon Willcock** - Doctors Health Advisory Service (NSW): (02) 9477 9136; simonw@med.usyd.edu.au
- **Prof Chris Tennant** –tennant@med.usyd.edu.au

By completing this survey you are consenting to this survey information going to Dr Nash and the team from the University of Sydney. The data will be used to inform universities and medical colleges about medico-legal matters. It is anticipated that results will also be reported at conferences and in journals. Should you wish to withdraw from this study at any time, please contact Dr Louise Nash.

If you feel distressed through a complaint/lawsuit/investigation you may wish to contact the Doctor's Health Advisory Service (02) 9902 8135, or your own General Practitioner. I hope you will take the time to fill in this questionnaire and return it in the pre-paid envelope.

Yours sincerely,

Dr Louise Nash

Any person with concerns or complaints about the conduct of a research study may contact the Manager for Ethics Administration, Royal North Shore Hospital (Phone (02) 99267111)

Further details on the background and design of the project:

Little research has been undertaken on the response of doctors to complaints, lawsuits and investigations into their practice. The aim of this research is to assess the psychological impact on the doctor, and investigate factors such as gender, medical specialty, personality style and understanding of legal risk. The results of the study will inform universities and medical colleges about medico-legal issues in Australia, and will lead to better support for the mental health of doctors. In addition, it will enable Avant to provide a more responsive service to members experiencing legal action and complaints.

The complete project is in three phases. You are invited to participate in phase 2:

- 1) an initial pilot project of 1,500 general practitioners has been undertaken
- 2) **a large cross-sectional study of 8,500 members of Avant from a variety of specialties**
- 3) doctors with a complaint/lawsuit/investigation commencing within 12 months of the cross-sectional study will be invited to answer a brief (5 minutes) survey 6 monthly over two years.

The area of interest for this study is the impact of a complaint/claim/inquiry on the health and practice of the doctor which will be looked at comparing doctors who have and have not been through these processes, by measuring change of practice, psychological morbidity, alcohol use, personality style, perception of legal risk and satisfaction with work, social and home life.

If you return the questionnaire, Avant will give to the research group brief data of how many and what type of matters they have assisted you with (using research code only). Your name will never be with the data.

The university group will use the assistance of a mailing house to send the questionnaires and scan the data. A coding system will be used (not Avant member codes) to code and store data.

If you choose not to participate, this will in no way affect your relationship with Avant.

In case you overlook this request, we will send you a repeat questionnaire in a few weeks. Return of the completed questionnaires will be taken as consent to participate in this project.

Thank you for taking the time to read this. I hope you will now complete the questionnaire.

Yours sincerely,

Dr Louise Nash

Appendix 4: The large study questionnaire



The Psychological Impact of Medico-Legal Matters on Doctors

How to complete this survey ...

- Use a blue/black biro
- Make no stray marks
- Erase mistakes fully
- Please mark like this
- NOT like this

PLEASE ANSWER ALL THE QUESTIONS IN EACH SECTION

SECTION A Demographic and history of lawsuit/complaint/inquiry

(This part of the questionnaire appears complex at first glance, but will be brief for most respondents. Those who have had more experience of the complaints/claims system, please persevere, as your experience is very important to the project.)

1. Year of your birth?

--	--	--	--
2. Year of your graduation?

--	--	--	--
3. Where did you complete your primary medical degree?

<input type="radio"/> Australia/NZ	<input type="radio"/> UK/Ireland	<input type="radio"/> Europe	<input type="radio"/> Africa
<input type="radio"/> Middle East	<input type="radio"/> North America	<input type="radio"/> India/Sri Lanka	<input type="radio"/> Rest of Asia
<input type="radio"/> Other (please specify)			
4. What year did you finish (or do you expect to finish) your postgraduate vocational training (eg. fellowship)?

--	--	--	--
5. What is the postcode of your main practice location?

--	--	--	--
6. What best describes your main practice?

<input type="radio"/> Solo	<input type="radio"/> Group	<input type="radio"/> Hospital	<input type="radio"/> Community Centre	<input type="radio"/> Other (please name)
----------------------------	-----------------------------	--------------------------------	--	---
7. What is your gender? Male Female
8. What is your marital status? Single Married Defacto Divorced Separated Widowed
9. How many hours per week do you work in an average week? hours
10. If you work part-time, what is the reason?

<input type="radio"/> Family/carer commitments	<input type="radio"/> Age	<input type="radio"/> Personal health reasons
<input type="radio"/> Personal preference	<input type="radio"/> Ongoing education	<input type="radio"/> Other
11. How many weeks have you worked in the past 12 months? weeks
12. Did you participate in a peer review process in the past 12 months? Yes No **If No, please go to 14.**

(Please include only formal meetings with peers to discuss patient care whereby collegial support and exploration of difficult issues would be anticipated)

13. If yes, how many times in the past 12 months?
14. How many **hours** of formal educational meetings (for example conferences, workshops etc) did you attend in the past 12 months? (Consider one day at a conference is usually 6-7 hours of formal education): hours
- 15a. During the last year, did you meet your College's continuing medical education requirements? Yes No NA
- 15b. Do you have a role in teaching medical students? Yes No
- 15c. When did you last take a holiday for pleasure? Within the last 12 mths Between 1-2 yrs ago More than 2 yrs ago
16. Have you **ever** had a medico-legal matter (defined in box below)? Yes No

Medico-legal matters for this study include:

- Claim for compensation for damages
- Complaint to a Health Care Complaints body
- Medical Board Inquiry
- Disciplinary hearing
- Medicare Australia / HIC Inquiry
- Hospital dispute
- Hospital investigation
- Pharmaceutical Services inquiry
- Complaint before the Anti-discrimination Board
- Coronial Inquiry
- Criminal charge
- Patient complaint direct to Doctor

If yes, please continue with question 17. If no, please go to Section B on page 4.

17. Please consider past and current medico-legal matters in completing the table below:

Medico-Legal Matters	Number of past matters (closed)				Number of current matters			Which category was the most RECENT?	Which category was the most DISTRESSING?
	1	2	3	≥4	1	2	≥3	<i>Please answer once only in this column.</i>	<i>Please answer once only in this column.</i>
Medico-legal categories for this study include:									
Claim for compensation for damages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complaint before Health Care Complaints body	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Medical Board Inquiry (interview, counselling, performance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disciplinary hearing (Tribunal or professional standards committee)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Medicare Australia/HIC Inquiry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hospital dispute	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hospital investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmaceutical Service Inquiry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complaint before the Anti-discrimination Board	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coroners inquiry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Criminal charge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patient complaint direct to doctor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Considering your most recent matter:

18a. Please indicate your perception of the seriousness of this matter?
 Trivial Moderate Serious Very serious

18b. Do you believe the legal action taken against you in this matter was justified?
 No justification A little justification Moderate justification Definite justification

18c. The following box relates to how this matter affected your health and whether you sought professional help for any of the following problems (please consider symptoms and medications or drug use for each item, and then refer to final column right hand side regarding whether or not you sought treatment)

Did you (please answer each item)	Symptoms / Use		Treatment
	No	Yes	Did you seek professional help
Become more anxious than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Become more depressed than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Require antidepressant medication more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drink alcohol more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use illicit drugs more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use benzodiazepines more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have other medical problems more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Please ensure that you have reviewed the final right hand side column for each of the above items.			

18d. What year did legal action commence?

18e. Is it ongoing? Yes No

18f. If no, what year did legal action finish?

18g. Support during the medico-legal process:
 Did you (or do you) feel adequately supported throughout the process by your medical defence organisation?
 Yes No Did not contact

18h. Which of the following services would you find useful if you experienced another medico-legal matter?

	Strongly Disagree	Disagree	Agree	Strongly Agree
More information about the medico-legal process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More information about what services and support are available.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A Contact person within your medical defence organisation, apart from the claims manager or solicitor, with whom you can discuss your concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A support person from the medical defence organisation to accompany you when attending court or disciplinary proceedings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A formal Peer support programme arranged by the medical defence organisation to provide impartial, empathic support doctor to doctor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contact with the Doctors Health Advisory Service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to an independent and confidential counselling service, available free to the medical defence organisation members and their family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you, you have now completed section A, please turn to section B on the next page.

SECTION B General Health Questionnaire

We would like to know how your health has been during the last **2 weeks**. Simply fill in the circle that you think best applies to you – remember we want to know about present and recent health problems, **NOT** those you may have had in the past.

Have you recently:

1. Been feeling perfectly well and in good health?
 More so than usual Same as usual Slightly less than usual Much less than usual
2. Been feeling in need of a good tonic?
 Not at all No more than usual Slightly more than usual Much more than usual
3. Been feeling run down and out of sorts?
 Not at all No more than usual Slightly more than usual Much more than usual
4. Felt that you are ill?
 Not at all No more than usual Slightly more than usual Much more than usual
5. Been getting any pains in your head?
 Not at all No more than usual Slightly more than usual Much more than usual
6. Been getting a feeling of tightness or pressure in your head?
 Not at all No more than usual Slightly more than usual Much more than usual
7. Been having hot or cold flushes?
 Not at all No more than usual Slightly more than usual Much more than usual
8. Lost much sleep over worry?
 Not at all No more than usual Slightly more than usual Much more than usual
9. Had difficulty staying asleep once you are off?
 Not at all No more than usual Slightly more than usual Much more than usual
10. Felt constantly under strain?
 Not at all No more than usual Slightly more than usual Much more than usual
11. Been getting edgy and bad-tempered?
 Not at all No more than usual Slightly more than usual Much more than usual
12. Been getting scared or panicky for no good reason?
 Not at all No more than usual Slightly more than usual Much more than usual
13. Found everything getting on top of you?
 Not at all No more than usual Slightly more than usual Much more than usual
14. Been feeling nervous and strung-up all the time?
 Not at all No more than usual Slightly more than usual Much more than usual
15. Been managing to keep busy and occupied?
 More so than usual Same as usual Slightly less than usual Much less than usual
16. Been taking longer over the things you do?
 Quicker than usual Same as usual Longer than usual Much longer than usual
17. Felt on the whole that you were doing things well?
 Better than usual About the same Less well than usual Much less than usual
18. Been satisfied with the way you've performed tasks?
 More satisfied About the same as usual Less satisfied than usual Much less than usual
19. Felt that you were playing a useful part in things?
 More so than usual Same as usual Less so than usual Much less than usual
20. Felt capable of making decisions about things?
 More so than usual Same as usual Less so than usual Much less than usual
21. Been able to enjoy normal day-to-day activities?
 More so than usual Same as usual Less so than usual Much less than usual
22. Been thinking of yourself as a worthless person?
 Not at all No more than usual Slightly more than usual Much more than usual
23. Felt that life is entirely hopeless?
 Not at all No more than usual Slightly more than usual Much more than usual
24. Felt that life isn't worth living?
 Not at all No more than usual Slightly more than usual Much more than usual
25. Thought of "doing away" with yourself?
 Not at all No more than usual Slightly more than usual Much more than usual
26. Found at times that you couldn't do anything because your nerves were so bad?
 Not at all No more than usual Slightly more than usual Much more than usual
27. Found yourself wishing you were dead and away from it all?
 Not at all No more than usual Slightly more than usual Much more than usual
28. Found that the idea of taking your own life kept coming into your mind?
 Definitely not I don't think so Has crossed my mind Definitely has

SECTION C

On a scale of 1 to 4 please fill in the circle that BEST describes the amount of disability or impairment, **currently**, in each of the following areas – WORK, SOCIAL LIFE, LEISURE ACTIVITIES and FAMILY LIFE

1. At this time how much is your **WORK impaired** because of your problems
 Not impaired Mildly impaired Moderately impaired Severely impaired
2. At this time how much are your **SOCIAL LIFE and LEISURE ACTIVITIES impaired** because of your problems
 Not impaired Mildly impaired Moderately impaired Severely impaired
3. At this time how much are your **FAMILY LIFE and HOME RESPONSIBILITIES impaired** because of your problems
 Not impaired Mildly impaired Moderately impaired Severely impaired

SECTION D Personality/Coping

INSTRUCTIONS: Please answer each question by filling in the circle 'YES' or 'NO'. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

	Yes	No		Yes	No
1. Does your mood often go up and down?	<input type="radio"/>	<input type="radio"/>	24. Have you ever broken or lost something belonging to someone else?	<input type="radio"/>	<input type="radio"/>
2. Do you take too much notice of what people think?	<input type="radio"/>	<input type="radio"/>	25. Are you a worrier?	<input type="radio"/>	<input type="radio"/>
3. Are you a talkative person?	<input type="radio"/>	<input type="radio"/>	26. Do you enjoy cooperating with others?	<input type="radio"/>	<input type="radio"/>
4. If you say you will do something, do you always keep your promise no matter how inconvenient it might be?	<input type="radio"/>	<input type="radio"/>	27. Do you tend to keep in the background on social issues?	<input type="radio"/>	<input type="radio"/>
5. Do you ever feel 'just miserable' for no reason?	<input type="radio"/>	<input type="radio"/>	28. Does it worry you to know there are mistakes in your work?	<input type="radio"/>	<input type="radio"/>
6. Would being in debt worry you?	<input type="radio"/>	<input type="radio"/>	29. Have you ever said anything bad or nasty about someone?	<input type="radio"/>	<input type="radio"/>
7. Are you rather lively?	<input type="radio"/>	<input type="radio"/>	30. Would you call yourself tense or 'highly-strung'?	<input type="radio"/>	<input type="radio"/>
8. Were you ever greedy by helping yourself to more than your fair share of anything?	<input type="radio"/>	<input type="radio"/>	31. Do you think people spend too much time safeguarding their future with savings and insurance?	<input type="radio"/>	<input type="radio"/>
9. Are you an irritable person?	<input type="radio"/>	<input type="radio"/>	32. Do you like mixing with people?	<input type="radio"/>	<input type="radio"/>
10. Would you take drugs which may have strange or dangerous effects?	<input type="radio"/>	<input type="radio"/>	33. As a child were you ever cheeky to your parents?	<input type="radio"/>	<input type="radio"/>
11. Do you enjoy meeting new people?	<input type="radio"/>	<input type="radio"/>	34. Do you worry too long after an embarrassing experience?	<input type="radio"/>	<input type="radio"/>
12. Have you ever blamed someone for doing something that you knew was really your fault?	<input type="radio"/>	<input type="radio"/>	35. Do you try not to be rude to people?	<input type="radio"/>	<input type="radio"/>
13. Are your feelings easily hurt?	<input type="radio"/>	<input type="radio"/>	36. Do you like plenty of bustle and excitement around you?	<input type="radio"/>	<input type="radio"/>
14. Do you prefer to go your own way rather than act by the rules?	<input type="radio"/>	<input type="radio"/>	37. Have you ever cheated at a game?	<input type="radio"/>	<input type="radio"/>
15. Can you usually let yourself go and enjoy yourself at a lively party?	<input type="radio"/>	<input type="radio"/>	38. Do you suffer from 'nerves'?	<input type="radio"/>	<input type="radio"/>
16. Are all of your habits good and desirable ones?	<input type="radio"/>	<input type="radio"/>	39. Would you like other people to be afraid of you?	<input type="radio"/>	<input type="radio"/>
17. Do you often feel 'fed-up'?	<input type="radio"/>	<input type="radio"/>	40. Have you ever taken advantage of anyone?	<input type="radio"/>	<input type="radio"/>
18. Do good manners and cleanliness matter much to you?	<input type="radio"/>	<input type="radio"/>	41. Are you mostly quiet when you go out with other people?	<input type="radio"/>	<input type="radio"/>
19. Do you usually take the initiative in making new friends?	<input type="radio"/>	<input type="radio"/>	42. Do you often feel lonely?	<input type="radio"/>	<input type="radio"/>
20. Have you ever taken anything (no matter how seemingly insignificant) that belonged to someone else?	<input type="radio"/>	<input type="radio"/>	43. Is it better to follow society's rules than go your own way?	<input type="radio"/>	<input type="radio"/>
21. Would you call yourself a nervous person?	<input type="radio"/>	<input type="radio"/>	44. Do other people think of you as being very lively?	<input type="radio"/>	<input type="radio"/>
22. Do you think that marriage is old-fashioned and should be done away with?	<input type="radio"/>	<input type="radio"/>	45. Do you always practice what you preach?	<input type="radio"/>	<input type="radio"/>
23. Can you easily get some life into a rather dull party?	<input type="radio"/>	<input type="radio"/>	46. Are you often troubled about feelings of guilt?	<input type="radio"/>	<input type="radio"/>
			47. Do you sometimes put off until tomorrow what you ought to do today?	<input type="radio"/>	<input type="radio"/>
			48. Can you get a party going?	<input type="radio"/>	<input type="radio"/>

SECTION E AUDIT Alcohol Usage Questionnaire

One unit of alcohol is: 1 schooner (425ml) of light beer/lager
 OR: 1 middy/pot of full strength beer (285ml)
 OR: 1 small glass of wine (100ml)
 OR: 1 single measure of spirits (30ml)

Select from the answers below and fill in the circle that corresponds with your answer.

1. How often do you have a drink containing alcohol?
 Never Monthly or less 2-4 times a month 2-3 times a week 4 or more times a week
2. How many units of alcohol do you drink on a typical day when you are drinking?
 0 - 2 3 or 4 5 or 6 7,8 or 9 10 or more
3. How often do you have six or more units of alcohol on one occasion?
 Never Less than monthly Monthly Weekly Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?
 Never Less than monthly Monthly Weekly Daily or almost daily
5. How often during the last year have you failed to do what was normally expected from you because of drinking?
 Never Less than monthly Monthly Weekly Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
 Never Less than monthly Monthly Weekly Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?
 Never Less than monthly Monthly Weekly Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
 Never Less than monthly Monthly Weekly Daily or almost daily
9. Have you or someone else been injured as a result of your drinking?
 No Yes but not in the last year Yes during the last year
10. Has a relative or friend or doctor of another health worker been concerned about your drinking or suggested you cut down?
 No Yes but not in the last year Yes, during the last year

Section F Perceptions of mistakes, complaints and legal risk

Please respond to the following statements

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Medical mistakes are rare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. All doctors make mistakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The law requires me to make perfect medical decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Professional standards should be set solely by the medical profession	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I feel comfortable discussing my mistakes with my colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Inadequate communication is a factor in most complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. An apology to a patient implies an admission of liability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Patients are likely to sue a doctor who tells them about a mistake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Only unprofessional or incompetent doctors get sued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Doctors are encouraged to report their medical errors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. My awareness of the risks of medical negligence has increased in recent years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Did medico-legal factors influence your choice of specialisation in medicine? Yes No

12a. Have concerns about medico-legal issues caused you to consider:

- Giving up medicine Yes No
- Changing your specialty Yes No
- Reducing your hours of work Yes No
- Retiring early Yes No

13. Do concerns about medico-legal issues affect how you relate to patients in that you:

- Are more selective regarding patients that you see Yes No
- Are more attentive with patients Yes No
- Are more distant from patients emotionally Yes No
- Provide more information to patients Yes No

Do concerns about medical negligence / complaint cause you to:	Less than usual	No change from usual	More than usual	N/A
14. Order tests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Prescribe medications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Refer patients to specialists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Avoid a particular type of invasive procedure (for example a type of surgery, a regional anaesthetic, a diagnostic procedure)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Avoid a particular type of obstetric procedure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Put systems in place to track test results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Put systems in place to audit your practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Put systems in place to identify non-attenders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Provide communication of risk to patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Relate empathically to patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Disclose uncertainty to your patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Advise patients of a complaints policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Consider every patient a potential litigant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. Do you discuss your mistakes with others: Yes No NA If No or NA, please go to 30

If Yes, who do you feel comfortable discussing your mistakes with (tick as many as you like):

- Peer Senior colleague Junior colleague UMP/Medical Insurer
- Family/friends Other

28. Do you find such discussion helpful? Yes No Unsure

29. I believe such discussion may prevent me or others making a similar mistake in the future: Yes No Unsure

30. Do you use examples of mistakes (yours and/or others) when teaching? Yes No N/A

The following have prevented me from discussing my mistakes with a colleague:	Yes	No
1. Fear of litigation	<input type="radio"/>	<input type="radio"/>
2. Fear of damage to reputation	<input type="radio"/>	<input type="radio"/>
3. Fear of criticism	<input type="radio"/>	<input type="radio"/>

The following have prevented me from discussing my mistakes with a colleague:	Yes	No
4. Shame/embarrassment	<input type="radio"/>	<input type="radio"/>
5. Fear of loss of referral	<input type="radio"/>	<input type="radio"/>
6. Other (specify)	<input type="radio"/>	<input type="radio"/>

***Please return the survey in the reply paid envelope supplied to
Psychological Impact
The University of Sydney
PO Box K1342
Haymarket NSW 1239
no later than Friday 19th October, 2007***

***Thank you for taking the time to complete this questionnaire.
If you feel distressed by the process of a complaint/investigation/lawsuit, you may contact
Avant for advice. In addition, the Doctor's Health Advisory Service (02) 9902 8135 provides
services appropriate to your situation, or you may choose to contact your own GP.***

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