



AMA

MANAGING THE RISK OF FATIGUE IN THE MEDICAL WORKFORCE

AMA Safe Hours Audit 2011



AUDIT ANALYSIS – JULY 2012

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Executive Summary

There is a tradition of onerous working hours in the medical profession. There has long been an expectation that doctors work extended shifts and demanding on-call rosters, without diminishing their ability to apply their professional knowledge and skills to the highest standard.

But evidence from around the world has shown that excessive working hours and fatigue affect patient safety as well as the health and wellbeing of doctors.^{1,2,3} The impairment to the performance of an individual after 17 hours of sustained wakefulness has been shown to be equivalent to that of a blood alcohol concentration greater than 0.05 per cent.⁴

As part of an ongoing campaign, the AMA in August last year conducted its third nationwide survey of doctors' working hours to assess the fatigue risks of their current working arrangements. While previous audits have focused on hospital doctors, the 2011 survey was extended to cover General Practice (GP) registrars working in community settings.

The survey was conducted using an online tool that collected data on the hours of work, on-call hours, non-work hours, and the sleep time of doctors during the audit week (8–14 August 2011). Both AMA members and non-members were invited by email to participate.

The data was independently analysed by Kilham Consulting Pty Ltd against an established risk assessment model developed by the AMA in 2000. Participants were categorised into three different risk levels: lower, significant and higher. In determining the level of risk, the model took into account factors such as total weekly hours, the amount of night work, the length of shifts, the extent of on-call commitments, access to breaks, and the long-term work pattern.

The survey, in which 1,486 doctors took part, shows that since the AMA undertook its first safe hours audit in 2001, there has been a sustained decline in the risks of fatigue, based on the proportion of doctors that fall into the significant and higher risk levels. However, many hospital-based doctors are still working rosters that potentially impair their performance.

The risk assessment data collected by the AMA indicates the performance of hospital doctors in the higher risk category, and many in the significant risk category, would, at times, be impaired to the extent of affecting the safety of medical care provided to patients. If this performance impairment were the result of alcohol intoxication, prevailing hospital policies would prevent these doctors from working.

The audit also reveals that GP registrars working in community settings are generally at lower risk of fatigue than their colleagues working in the hospital system. The results of the survey with respect to GP registrars are dealt with separately.

1 Australian Council for Safety and Quality in Health Care and Australian Health Ministers' Conference. *Safe staffing : discussion paper / Safety+Quality Council*. Canberra: ACSQHC, 2003.

2 Ulmer C, Wolman DM, Johns MME, eds. *Resident Duty Hours: Enhancing Sleep, Supervision, and Safety*. Washington, DC: The National Academies Press: 2009.

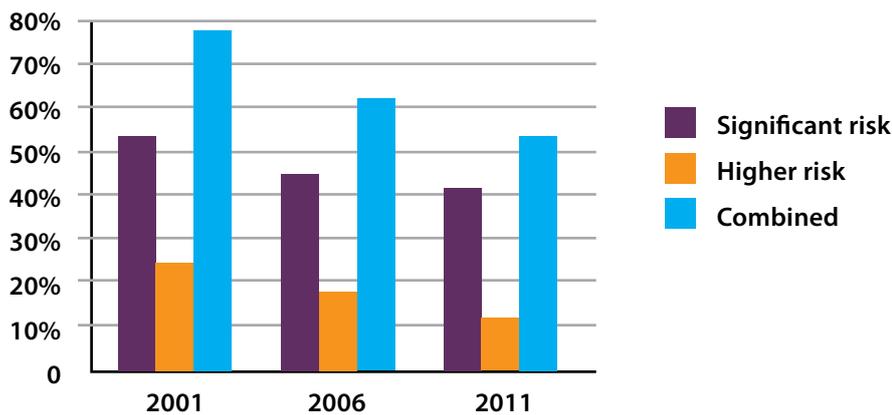
3 Canadian Association of Internes and Residents. *Position Paper on Resident Duty Hours*. Canadian Patient and Physician Safety and Wellbeing: Resident Duty Hours. Ottawa: CAIR, 2012.

4 Dawson D, Reid K. Fatigue, alcohol and performance impairment. *Nature* 1997; 388: 235.

Summary of results for hospital-based doctors

The AMA survey reveals that the hours and patterns of work for 53 per cent of hospital-based doctors fall into significant risk and higher risk categories. This represents an improvement compared with the 2006 survey results, where 62 per cent of respondents fell into the significant risk and higher risk categories. In 2001, this figure was 78 per cent (see Graph 1).

GRAPH 1 – Percentage of doctors classified at the significant and higher risk levels.



The overall trend of continued improvement is welcome, although the audit clearly shows that extremes still exist and, in some cases, they have become worse. For example:

- in 2011, 21 per cent of doctors had no days free from work during the audit period;
- the longest recorded shift increased from 39 hours in 2006 to 43 hours in 2011; and
- the maximum total number of hours worked during the audit week actually went up (from 113 in 2006 to 120 in 2011).

The average of total hours worked in the 2011 audit week for all hospital doctors was 55.1 hours.

Conclusions

The 2011 Safe Hours Audit results show that the riskiest work patterns are still too common in our hospital system. Although various changes, including shifts in attitude, better rostering, industrial regulations, and increased graduate numbers, seem to have helped improve matters, unsafe practices persist.

In any other industry or profession, these statistics would be cause for deep concern and immediate action. Further improvement in the rostering in our hospital system – backed by appropriate resources and systems to ensure that the continuity of patient care is not compromised – would lead to lower risk of fatigue without necessarily reducing actual work hours.

The AMA will continue to lobby for improvements in the management of fatigue as a key patient safety issue. Clearly, there is no room for complacency.

Background

There is a tradition of onerous working hours in the medical profession. It has been expected that doctors will be able to sustain the highest professional standards despite working extended shifts and demanding on-call rosters.

In the past, some in the profession believed that rigorous training systems for doctors ensured that they could continue to function effectively through 24-hour shifts, continuous on-call rosters, little sleep, and short breaks between episodes of work.

Until relatively recently, little effort has been made to study the effects of punishing work schedules on the wellbeing of doctors or the patients in their care. In the 1990s, however, doctors, along with others interested in safety and quality, began questioning the practice.

Effects of fatigue

A large body of evidence attests to the deleterious effects of excessive working hours on patient safety, principally through increased medical errors. For instance, a 2004 study in the *New England Journal of Medicine*⁵ showed that interns made 35.9 per cent more serious medical errors when rostered for frequent shifts exceeding 24 hours than they did when working shorter shifts.

Fatigue also affects the health and wellbeing of doctors, both directly and indirectly. A separate *New England Journal of Medicine* paper⁶ considered the relationship between the risks of motor vehicle crashes and extended work shifts among interns in the United States. Researchers found that:

- the odds of an intern being involved in a motor vehicle crash after working an extended shift were more than double that for interns working non-extended shifts;
- near-miss accidents were more than five times more likely to occur after an extended work shift as they were after a non-extended shift; and
- in the months that interns worked five or more extended shifts, they were up to almost four times more likely to fall asleep while driving or stopped in traffic.

In 2004, the Royal College of Physicians in the United Kingdom undertook an eight-week study⁷ examining specialist registrars working 13-hour night shifts over seven consecutive nights, with the results highlighting that:

- participants reported excessive fatigue or tiredness during their shift on just over 50 per cent of shifts;
- 65 per cent of participants felt that working an extended pattern of night shifts affected the quality of care provided to patients;
- 74 per cent of participants felt that care in the hospital at night was 'worse' or 'much worse' than that available during the day; and
- according to several different measures, participants were at their lowest ebb on nights four and five in the shift cycle.

5 Landrigan CP, Rothschild JM, John W. Cronin JW, et al. Effect of Reducing Interns' Work Hours on Serious Medical Errors in Intensive Care Units. *N Engl J Med* 2004; 351:1838-1848.

6 Barger LK, Cade BE, Ayas NT, et al. for the Harvard Work Hours, Health, and Safety Group. Extended Work Shifts and the Risk of Motor Vehicle Crashes among Interns. *N Engl J Med* 2005; 352:125-13.

7 Horrocks N, Pounder R; Working the Night Shift An audit of the experiences and views of specialist registrars working a 13-hour night shift over 7 consecutive nights. London: Royal College of Physicians and Centre for Gastroenterology, 2004.

In 2003, the Australian Council for Safety and Quality in Health Care published a 'Safe Staffing' Discussion Paper⁸ that brought together much of the available overseas evidence on the risks of fatigue. This paper not only dealt with the health sector, but other sectors of the economy such as the airline industry.

More recently, the Institute of Medicine in the United States has also conducted an extensive review of the consequences of unsafe working hours and other rostering practices. It concluded that "fatigue is an unsafe condition that contributes to reduced wellbeing for residents and increased errors and accidents."⁹ Other international papers have reached a similar conclusion.^{10,11}

Managing risk in Australia

In contrast to other countries, working hours in Australia are not specifically regulated and are instead determined by industrial instruments and within the general obligations imposed by occupational health and safety legislation. As a consequence, Australian doctors work a wide variety of hours and under a broad range of roster structures.

The AMA launched its Safe Hours campaign in the mid-1990s. Central to this was the development of a National Code of Practice for working hours and rostering practices. To some extent, improving observance of the Code has obviated the need for Australia to adopt a more rigid approach to managing fatigue.

AMA National Code of Practice

After a lengthy consultation process supported by the Federal Government, the AMA's *National Code of Practice – Hours of Work, Shiftwork and Rostering for Hospital Doctors* was issued in 1999. It is available on the AMA website.¹²

The Code does not contain absolute, enforceable limits on single elements such as the maximum length of a safe shift or the break required between episodes of work. The level of fatigue and the consequent effect on safety and work performance is complicated and is the product of a range of factors.

Those factors are identified in the Code, which contains a *Risk Assessment Guide* and a *Risk Assessment Checklist* to help assess the risk level of an individual's working hours. The Code provides the tools to identify unsafe working hours and reduce the associated risk levels.

The AMA Code now stands as the accepted standard for safe working hours for hospital doctors in Australia. Organisations including the Australian Council for Safety and Quality in Health Care, the Australian Council on Healthcare Standards, and State Postgraduate Medical Councils have made reference to the Code.

8 Australian Council for Safety and Quality in Health Care and Australian Health Ministers' Conference. *Safe staffing : discussion paper*. Canberra: ACSQHC, 2003.

9 Ulmer C, Wolman DM, Johns MME, eds. *Resident Duty Hours: Enhancing Sleep, Supervision, and Safety*. Washington, DC: The National Academies Press: 2009.

10 Moonesinghe SR, Beard JD. Impact of reduction in working hours for doctors in training on postgraduate medical education and patients' outcomes: systematic review. *BMJ* 2011;342:d1580.

11 Canadian Association of Internes and Residents. *Position Paper on Resident Duty Hours*. Canadian Patient and Physician Safety and Wellbeing: Resident Duty Hours. Ottawa: CAIR, 2012.

12 Australian Medical Association. *National Code of Practice – Hours of Work, Shiftwork and Rostering for Hospital Doctors*. Canberra: AMA, 2005.

AMA risk assessment audits

In order to monitor the impact of the Code, the AMA in 2000 developed a model to assess a rostered week against identified risk factors for fatigue. The model creates a numerical score, which translates to a risk rating (see methods later in this report).

2001 Safe Hours Campaign: Risk Assessment of Junior Doctor Rosters

In 2001, the AMA conducted a national audit of junior doctors' working hours using this model, which is available on the AMA website.¹³ The survey found that 78 per cent of respondents fell into the significant risk or higher risk levels during the audit period. Total hours for some higher risk doctors exceeded 100 per week, with one doctor reporting a period of 63 hours of continuous hospital duty.

Twenty four per cent of doctors in the higher risk category averaged 80 work hours during the audit week, with 81 per cent of them not having a single full day free of work in that week.

It was clear in 2001 that much remained to be done to tackle the entrenched culture of unsafe working hours.

2006 Safe Hours Campaign: Safe Hours = Safe Patients, AMA Safe Hours Audit 2006

The AMA Safe Hours Audit 2006¹⁴ was conducted using the same tool. It was extended to cover senior doctors and found that 62 per cent of hospital doctors were working hours that put them at risk of fatigue.

Some indicators showed signs of improvement. For example, for doctors in the higher risk category, the longest continuous period of work fell from 63 hours to 39 hours. Doctors also had more full days off work during the audit week and more opportunities for meal breaks when working.

The audit showed that, while modest improvements had been achieved, too many doctors were working hours that left them at significant and higher risk of fatigue. In the main, though, some extremes had been moderated.

Overseas experience in managing risk

There has been considerable progress made towards limiting the working hours of doctors in Europe and North America, principally through regulation and legislation. The effect of these measures on patient safety, doctor health and wellbeing, and medical education is starting to be evaluated.

Initial evidence suggests that cutting work hours has not had any detrimental effect on patient safety or the learning outcomes of doctors in training. The *British Medical Journal* recently conducted a review of 72 studies assessing the impact of a change in working hours on postgraduate medical training, patient safety and clinical outcomes.¹⁵ The review concluded that cutting working hours to less than 80 hours a week in the United States had not adversely affected patients or postgraduate training outcomes. The authors suggested that there was insufficient data to draw any conclusions about the impacts of reducing hours (to less than 56 or 48 a week) in the United Kingdom.

13 Australian Medical Association. AMA Safe Hours Campaign. Risk assessment of junior doctor rosters. Canberra: AMA, 2001.

14 Australian Medical Association. Safe Hours = Safe Patients. AMA Safe Hours Audit 2006. Canberra: AMA, 2006.

15 Moonesinghe SR, Beard JD. Impact of reduction in working hours for doctors in training on postgraduate medical education and patients' outcomes: systematic review. *BMJ* 2011;342:d1580.

Conversely, there is no conclusive evidence that reduced working hours, in isolation, have a positive effect on patient safety.¹⁶ This suggests that, in order to improve clinical outcomes, reduced working hours must be supported by other changes, including better staffing levels and dedicated patient handover arrangements.

The 2011 audit in context

Much has changed in Australia since the National Code of Practice was first launched in 1999.

For one, the medical workforce has expanded considerably. Over the last decade, the number of registered practitioners has increased by almost half, rising from 57,553 registrations in 1999 to 82,895 in 2009.¹⁷ This in part reflects an influx of medical graduates from overseas, as well as significant increases in the number of graduates from Australian medical schools. Industrial agreements in most jurisdictions have also changed considerably, with increasing recognition of the need for a comprehensive approach to the management of fatigue.

Although these developments have helped cut average working hours across the profession,¹⁸ the extent to which they have ameliorated other unsafe practices remains unclear. Much of the broader reduction in average working hours of doctors has been attributed to an increasing number of women in the workforce, who tend to work fewer hours than men. This may have masked the extent to which unsafe practices are evident, because crude measures (such as average working hours) do not reflect the extreme arrangements that occur in some settings and disciplines.

In tandem with this expansion in the medical workforce, demand for public hospital services has also increased. Between 2006-07 and 2010-11, the number of admissions to public hospitals grew on average by 3.2 per cent a year, while the annual growth in emergency department presentations averaged 3.2 per cent and outpatient services grew an average of 2 per cent a year.¹⁹ These strong rates of growth have not been matched by appropriate increases in funding and resources, and this has placed additional pressures on doctors working in public hospital settings.

For these reasons, the 2011 Safe Hours Audit is a timely study of fatigue in the medical workforce.

¹⁶ Ibid.

¹⁷ Health Workforce Australia. *Australia's Health Workforce Series Doctors in focus*. Adelaide: HWA, 2012.

¹⁸ Ibid.

¹⁹ Australian Institute of Health and Welfare. *Australian hospital statistics 2010-11*. Canberra: AIHW, 2012. (AIHW Cat. No. HSE 117; Health Services Series No. 43.)

Methods

The 2011 Safe Hours Audit was conducted using an online tool that collected data on the hours of work, on-call hours, non-work hours, and sleep time during one week (8-14 August 2011). An invitation to complete the survey was forwarded to doctors by e-mail, and AMA members and non-members were able to participate. Details of the audit were also published in *Australian Medicine*, State AMA publications and the social media platforms, Twitter and Facebook.

Data was independently analysed by Kilham Consulting Pty Ltd against an established risk assessment model developed by the AMA in 2000. This model considers factors such as total weekly hours, the quantity of night work, the length of shifts, the extent of on-call commitments, access to breaks, and the long term work pattern. Using a validated scoring system, the model categorises doctors into three different risk levels: lower, significant and higher risk.

Risk assessment model

The model's scoring system rests on a simple points calculation.²⁰ Points are added or subtracted for shifts that exceed 14 hours per day, where no work breaks are taken during shifts, for on-call commitments, where the doctor has no full day off in a week, and where the break between shifts is less than 10 hours. Points are weighted for hours worked at night because of the association with greater fatigue. They are also allocated on the basis of work schedules in the previous and forthcoming week.

While the AMA risk assessment audit methodology does not provide a precise measurement of fatigue and performance impairment, it is an indicator of the level of risk associated with specific work schedules.

²⁰ Australian Medical Association. AMA Safe Hours Campaign. Risk assessment of junior doctor rosters. Canberra: AMA, 2001.

Results and Discussion

The audit had 1,486 valid responses. A majority of these were from hospital-based doctors.

Hospital-based doctors

Sample

A total of 1399 hospital doctors completed usable risk assessments, of whom 46 per cent were Interns or Resident Medical Officers (RMOs), 33 per cent Registrars, 2 per cent were Career Medical Officers (CMOs), and 20 per cent were Consultants.

TABLE 1 – Respondents by Classification

	Percentage
Intern/RMO	46%
Registrars	33%
CMO	2%
Consultant	20%
TOTAL	100%

TABLE 2 – Respondents by Clinical Discipline

	Percentage
Medicine/Physicians	32%
Surgery	17%
Emergency Medicine	12%
Obstetrics and Gynaecology	7%
Anaesthetics	8%
General Practice*	2%
Other	23%
TOTAL	100%

* GPs have been included in the analysis of hospital doctors, where it could be established that they were working in hospitals on a part time or other basis. In this regard, GPs are acknowledged as being critical to the provision of hospital services in rural and remote areas.

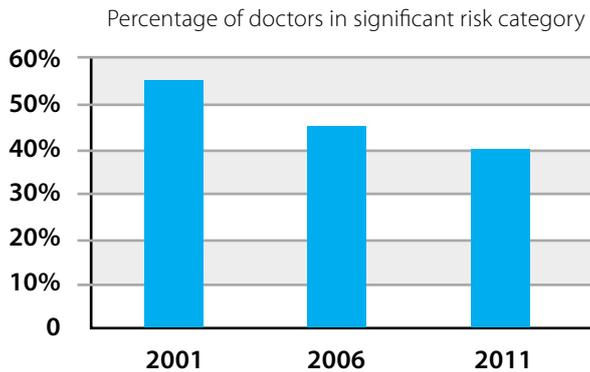
Risk by classification

The variation in fatigue risk among different classifications of doctors is shown in Table 3. There has been a general improvement in risk levels compared with previous audits, as can be seen in Graphs 2 and 3. For all hospital doctors, the proportion in the higher and significant risk categories fell compared with the 2006 report (from 62 per cent), with a corresponding rise in the lower risk category (from 38 per cent). Fifty three per cent of hospital doctors are still in the significant risk and higher risk categories.

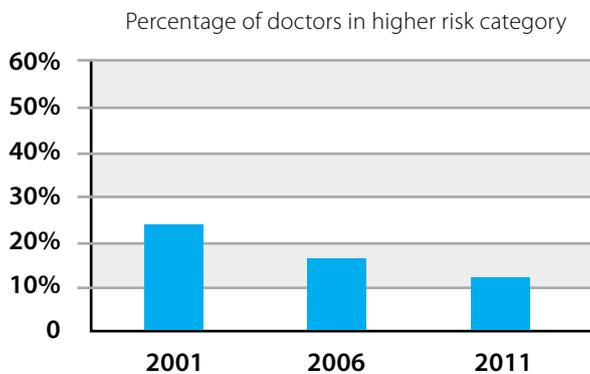
TABLE 3 – Respondents by classification and risk category

Risk Category	All Doctors	Intern/RMO	Registrars	CMO/Cons
Lower	47%	48%	42%	53%
Significant	41%	43%	40%	36%
Higher	12%	9%	18%	11%
TOTAL	100%	100%	100%	100%

GRAPH 2 – Trends in significant risk category



GRAPH 3 – Trends in high risk category



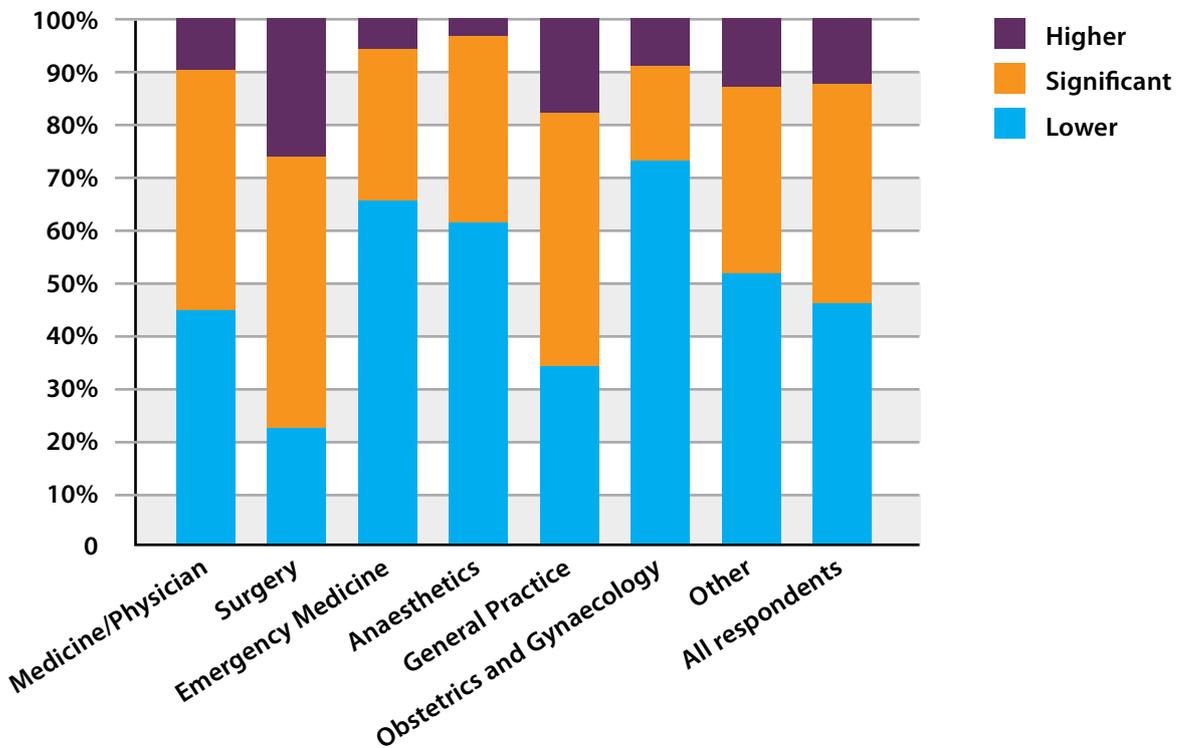
Risk by discipline

There was significant variation in risk categories within and between different clinical disciplines (Table 4 and Graph 4).

TABLE 4 – Clinical discipline by risk category

Clinical Discipline	Lower	Significant	Higher	Total
Medicine/Physician	46%	45%	9%	100%
Surgery	23%	51%	26%	100%
Emergency Medicine	66%	27%	6%	100%
Anaesthetics	62%	34%	4%	100%
General Practice	35%	48%	17%	100%
Obstetrics and Gynaecology	74%	17%	9%	100%
Other	52%	35%	13%	100%
All respondents	47%	41%	12%	100%

GRAPH 4 – Risk categories by clinical discipline



Compared with the 2006 audit results, the risk profile of most disciplines has improved, noting that General Practice has not been included in previous reports. Obstetrics and gynaecology has improved markedly, with 74 per cent of respondents falling into the lower risk category (against 28 per cent in 2006). Medicine/Physicians has also achieved further improvements in its risk profile, with 46 per cent in the lower risk category (against 36 per cent in 2001).

With the exception of emergency medicine, all medical disciplines have achieved a reduction in the higher risk category.

The results in the surgical category show progress, with the number of respondents in the lower risk category growing from 15 per cent in 2006 to 23 per cent in 2011. This may be the result of sustained efforts by the AMA, along with the Royal Australasian College of Surgeons (RACS), to publicly recognise the effects of fatigue on performance, and to address cultural and systemic issues regarding work hours. However, surgery still has some way to go, with the proportion of its practitioners in the higher risk category twice the average. This finding is supported by a recent study of surgical trainees²¹ that found trainees averaged 61.4 hours per week, with 5 per cent working more than 80 hours a week. On-call shifts were worked by 73.5 per cent, for an average of 27.8 hours per week.

One of the reasons that change in the specialty has been slow in coming is the perceived effect of reduced working hours on training opportunities. The Royal Australasian College of Surgeons Trainees Association (RACSTA) has recently determined that rosters of approximately 60 hours per week provide an appropriate balance of working hours for surgical training, although study and lifestyle demands are better accommodated with fewer hours.²² They concluded that sleep loss is an important determinant of fatigue and its impacts, and work hours should not be considered in isolation.

For these reasons, more sophisticated practice and rostering arrangements are required. These should minimise the risk of fatigue but also ensure access to essential training opportunities such as operating theatre and outpatient clinic sessions. Reports from overseas indicate this is possible, but requires changes to way services are delivered, as well as explicit recognition of the importance of medical education.^{23, 24}

Working hours

According to the survey, hospital doctors worked an average of 55.1 hours a week last year – a result that correlates with other recent Australian data.^{25, 26}

There was significant overlap in the range of total hours worked between the lower risk, significant risk, and higher risk groups (Table 5). This illustrates the point that other variables, along with the total number of hours worked in a week, influence the final risk rating of the work schedule. These include whether the work was performed in the day or at night, the frequency of on-call commitments, opportunities for rest breaks, and the other variables identified in the risk assessment guide of the Code as contributing to the risk associated with specific rostering practices.

21 O'Grady, G, Loveday B, Harper S, et al. Working hours and roster structures of surgical trainees in Australia and New Zealand. *ANZ J Surg* 2010; 80(12):890-5.

22 O, Grady G, Harper, S, Loveday B, et al. Appropriate working hours for surgical training according to Australasian trainees. *ANZ J Surg* 2012; 82(4): 225-29.

23 Temple J. Time for Training: A Review of the impact of the European Working Time Directive on the quality of training. London: National Health Service: Medical Education England, 2010.

24 Jefferis T, Snelling J, Collins J, de Cossart L. Educating surgeons in a 48-h week: time to change mindset. *Ann. R. Coll. Surg. Engl* 2009; 91:318–20.

25 Hills D, Scott A. Focus on doctors enrolled in a specialty training program [newsletter]. MABEL Matters No. 4, December 2009. Melbourne: Melbourne Institute of Applied Economic and Social Research.

26 McIsaac M, Scott A. Focus on interns and medical Officers. [newsletter]. MABEL Matters No. 5, December 2009. Melbourne: Melbourne Institute of Applied Economic and Social Research.

There has been little change in average total hours worked by doctors at all risk levels since 2006. The longest reported working week in the 2011 audit at the higher risk level was longer than in the 2006 report (113 hours), while there is some evidence of improvement from 2006 at the significant risk level (91 hours). The low risk category is unchanged from 2006.

TABLE 5 – Range of total hours worked by risk category – seven day audit period

Risk category	Range (hours)	Average hours
Lower	0-62	44
Significant	3-85	60
Higher	46-120	78

The longest period of work and average daily hours were correlated with risk category. Table 6 indicates that among doctors in the higher risk group there has not been a return to the extreme lengths of shift revealed in the 2001 audit (63 hours). However, the audit found that the duration of the longest recorded shift has actually increased, from 39 hours in 2006 to 43 hours last year.

Aside from these variations, the range of hours worked, and overall average hours, were very similar to the 2006 audit results.

TABLE 6 – Longest continuous period of work by risk category – seven day audit period

Risk category	Range (hours)	Average hours
Lower	0-19	12
Significant	0-34	14
Higher	9-43	16

Other indicators

Table 7 indicates that 72 per cent of doctors in the higher risk group had no day free of work during the seven day audit period – unchanged from the 2006 audit results. While more doctors in the low risk category had two or more days free of work (85 per cent versus 80 per cent in 2006), there is no clear evidence of sustained improvement overall.

TABLE 7 – Full days free of work by risk category – seven day audit period

Risk category	Days free of work		
	None	One	Two or more
Lower	2%	22%	85%
Significant	28%	35%	38%
Higher	72%	19%	9%

On-call commitments are a factor in fatigue and risk levels. Table 8 and Graph 5 indicate the significant on-call commitments of hospital doctors. For those in the significant risk and higher risk categories, the figures for three or more days on-call have increased compared to 2006 (16 per cent and 39 per cent respectively). For those in the higher risk category, only 32 per cent had no on-call commitments during the audit week, against 35 per cent in 2001.

TABLE 8 – Days on-call by risk category – a seven day audit period

Risk category	Number of days		
	None	One or two	Three or more
Lower	74%	22%	4%
Significant	52%	30%	18%
Higher	32%	18%	49%

GRAPH 5 – Days on-call by risk category

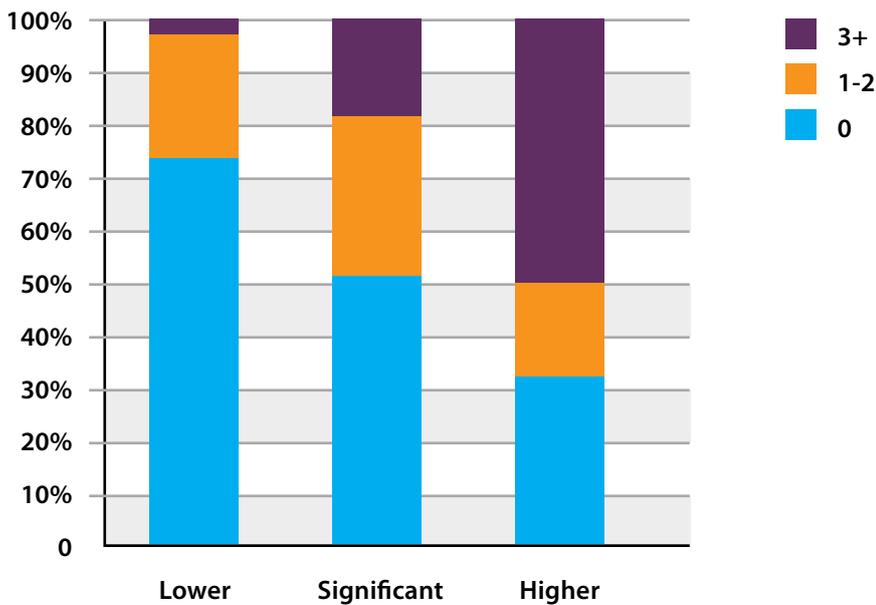


Table 9 indicates that many doctors are forced to skip meal breaks and that this problem is more pronounced for doctors working in the significant and higher risk categories. There was evidence in the 2006 audit that opportunities to have meal breaks had increased, but the figures below indicate that this trend has since been reversed, and the risks are very similar to those found in the 2001 audit.

TABLE 9 – Days without a meal break by risk category – seven day audit period

Risk category	Number of days		
	None	One or two	Three or more
Lower	47%	28%	25%
Significant	26%	25%	50%
Higher	21%	21%	58%

General Practice registrars

The AMA recognises that the risks of fatigue are not just an issue for doctors working in the hospital sector. For example, the AMA published a *Guide to Managing the Risks of Fatigue in General Practice*. This was designed to assist GPs and GP registrars.²⁷

Only 87 GP registrars participated in the audit, which means the results should be treated with caution. However, it would appear that the risks of fatigue for GP registrars working in community settings are lower than most hospital-based doctors. Sixty two percent of respondents were classified as being at a lower risk of fatigue, which compares favourably to 47 per cent of hospital doctors.

It should be emphasised that the data do not show that GP registrars work substantially fewer hours than hospital-based doctors. The average of total hours worked in the 2011 audit week for all hospital doctors was 55.1 hours, whereas it was 52.4 hours for GP registrars. It would appear that the lower risks of fatigue for GP registrars is a product of different rostering arrangements in community settings, with the survey data showing that they do not appear to face the same extremes that are encountered when working in the hospital system. The following two tables illustrate this when compared with the results in Tables 5 and 6 on page 14.

²⁷ Australian Medical Association. *Managing the Risks of Fatigue in General Practice - For GPs and GP Registrars*, 2008. <http://ama.com.au/node/4193> (accessed Apr 2012).

TABLE 10 – Range of total hours worked by risk category – seven day audit period

Risk category	Range (hours)	Average hours
Lower	20-60	44
Significant	32-74	58
Higher	58-113	81

TABLE 11 – Longest continuous period of work by risk category – seven day audit period

Risk category	Range (hours)	Average hours
Lower	5-16	10
Significant	5-19	13
Higher	12-18	14

Due to the small sample size, the other data collected in relation to GP registrars are not discussed here. The AMA will explore how to better encourage the participation of GP registrars in future audits, which is seen as an essential area of further research for the AMA.

Conclusion

The results of the third AMA Safe Hours Audit indicate that, overall, there has been a reduction in the proportion of doctors whose working hours expose them to significant and higher risks of fatigue. However, the audit has revealed that many of the more extreme rostering practices still persist.

Various steps taken since the issue gained prominence in the mid-1990s appear to be achieving some success in curbing exposure of doctors to the risks of fatigue. Changing attitudes, an increase in the medical workforce, improved rostering practices and more informed industrial requirements are all likely to have contributed to this improvement. It is encouraging that progress is being achieved without the rigid restrictions that have been imposed in other countries.

Recent increases in graduate numbers are likely to have made a significant difference to the working hours of junior doctors, despite increasing demand for public hospital services. If these trends continue, monitoring the impact of this workforce growth on training opportunities will become increasingly important.

The consequences of unsafe rostering mean that further improvement is required. Reducing the risks of fatigue in a way that improves patient safety and the quality of services, without adversely affecting training quality, requires system-wide reforms that include improved staffing and dedicated patient handover arrangements.

The AMA hopes that further improvement of rostering practices is evident in future Safe Hours Audits.

Australian Medical Association Ltd

July 2012