Research paper

A survey of the risk-management behaviours of Australian general practitioners

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ABSTRACT

Background To assist general practitioners (GPs) in minimising their risk of medical error, the education unit of a medical insurer developed a survey that assessed the risk-management behaviours of GPs. **Objective** This study describes the risk-management behaviours of Australian GPs and how they vary by age, sex and workload intensity.

Method A cross-sectional survey of 572 practising GPs, from a random selection of 1657 insured GPs, formed the data for analysis. GPs self-reported their behaviour using the valid and reliable Know your Risk – GP-Non-procedural Scale.

Results GPs reported performing risk-management behaviours frequently in six key areas: practitioner communication, facilitating patient responses, managing adverse outcomes, practice setting, diagnosis, and prescribing/treatment. Risk-management behaviours varied little by age, sex or workload, with 'facilitating patient responses' being a key domain in age, sex and workload differences (older GPs and women self-reported higher performance) later found to be not significant when the interaction of age, sex and workload was examined.

Conclusion Most GPs were actively engaged in general risk-management behaviours. This selfassessment tool and education strategy identified areas for improvement for individual GPs. The initiative prompted GPs to seek additional education including practice reviews. This risk-management strategy would be applicable to sole practices, group practices and divisions of general practice. Workload intensity may be a major consideration in the focus and extent of participation in riskmanagement behaviours, and research using varying levels of workload intensity is recommended.

Keywords: error, general practice, risk management

Introduction

Primary care practitioners provide the majority of primary healthcare services in Australia and overseas and represent the majority of the medical labour workforce (39%).^{1,2} Patient encounters result in a satisfactory outcome for the patient and practitioner in most cases, with four to 80 errors per 100 000 consultations 8

being reported.^{1,3} Nonetheless, concerns about patient safety are resonating around the world,¹ with both consumers and medical practitioners sensitised to the issue of preventing or minimising risk. Similarly, medical insurers require educational strategies that can provide information or prompt professionals to seek further education where gaps in knowledge are evident. This study reports on a survey of risk-management behaviours of general practitioners (GPs), instigated as an educational approach by a major medical insurer.

Errors are made by 'competent' and 'conscientious' medical practitioners, and the experience is emotionally distressing to practitioners.^{4,5} Often legal systems are perceived as unpredictable, with medical practitioners experiencing loss of control and frequently distress associated with altered professional self-concept.⁶ Fear of litigation may be leading to medical practice changes based on concerns about litigation rather than patients' clinical needs.⁷ Although there is debate relating to the division between clinical and medicolegal risk management,⁸ this study focuses upon risk-management behaviours or systems, processes or behaviours that have been found to either reduce the likelihood of a claim or enhance the defensibility of medical practitioners.

Risk-management behaviours are often implied from the examination of adverse events, claims, incidents, and legal precedent. Selected aspects of risk-management behaviour are presented here related to primary care, and the reader is directed to a comprehensive review elsewhere.9 A US study of 49 345 primary care adverse events noted the most common causes of negligent claims as: diagnosis (34%), failure to supervise or monitor case (16%), improper performance (15%) and medication errors (8%).¹⁰ Recent studies of incidents rather than claims have been undertaken worldwide – in Australia,^{11,12} Canada,¹³ UK¹⁴ and the US.^{3,15} Sandars and Esmail¹ reviewed 12 key studies of error in general practice and identified clear patterns within primary care errors, with diagnosis error (delayed or missed; 26-78%) resulting in patient injury and being less preventable, than treatment-related (delayed or inappropriate) error (11–42%).¹ The difficulties of multifactorial causes of error and poor definition of causation were emphasised by Sandars and Esmail, although these authors highlighted communication between the doctor and patient and between health professionals as major concerns across the studies.¹ The Linnaeus international collaboration utilised a common set of definitions for error and focused on contributing factors, and in a comparison of Canada to all other countries Rosser et al 13 confirmed major factors in errors as: office processes (39%), external investigations (16%), treatment (24%) and communication (15%).¹³ The focus on process errors (79%)

rather than knowledge and skill errors (21%) was also evident in Australian comparisons.¹²

Legal precedent often shapes risk-management practices and is prominent in failure to follow up on patients who do not attend an appointment and failure to warn of material risk and failure to diagnose. Andrews and Barrett reviewed Tai v Hatzistavrou (1999) NSWCA 306 and Kite v Malycha (1998) 71 SASR 321 and noted that responsibility rests with practitioners to know whether treatment is being followed, appointments have been kept and test results have been viewed.¹⁶ Andrews and Barrett found that most patients (94%) expect doctors to follow up on missed appointments, and some doctors (28%) documented non-attendance and their attempts to follow up.¹⁶ Andrews and Barrett conclude from their survey that most orthopaedic practitioners 'adequately' engage in risk-management practices.¹⁶

Defensive medicine includes both positive or assurance (increased diagnostic testing, referrals, followup) and negative or avoidance (avoiding treatment of certain conditions, removal of patients from list) defensive behaviour.¹⁷ Concern about risk of litigation, and the practice of defensive medicine was evident with Studdert *et al*, who found 93% of physicians practised defensive medicine, and warned of the 'serious implications for cost, access, and both technical and interpersonal quality of care'.¹⁷

Risk-management intervention studies are emerging. The Agency for Healthcare Research and Quality (AHRQ) lists specific strategies and interventions aimed at improving quality and reducing errors as: communication improvement, organisational culture of safety, education and training, human factor engineering such as checklists or alarm systems, credentialing and regulation, logistic strategies such as duty hour limitation, laboratory result tracking improvement, and auditing, feedback and benchmarking.¹⁸ System re-engineering (bar code technology in pharmacy) resulted in a 63% to 93% reduction in medication errors.¹⁹ Teamwork training, however, was not found to reduce adverse outcomes in labour and delivery care.²⁰ In primary care, organisational interventions to improve engagement in risk-management activities resulted in some improvements, but the authors concluded that targeted competencies or behaviours such as recording adverse events may result in staff seeing the benefits relative to the additional work required.²¹ The risk-management behaviour survey proposed here captures aspects of quality improvement, education, feedback and benchmarking, and focuses on specific risk-management behaviours derived from reviewed studies and claims analysis.

The specific research question is: What are the current risk-management practices (as measured by the Know your Risk for GPs – Non-procedural)²² of

GPs (not conducting procedures), and how do they vary with age, sex and workload?

Method

A cross-sectional survey of GPs was conducted in July 2005 with a follow-up letter two weeks later. A random selection of 1657 Australian GPs, who were currently insured and did not conduct procedures (definition footnoted on Table 1), were selected.

Survey

This postal survey included items from the Know your Risk version 2 (KYRV2) scale and demographic and clinical activity items.

KYRV2-GP – Non-procedural

Modifications to the original KYR (version 1) instrument⁹ resulted in the KYRV2. The KYRV2-GP – Nonprocedural (NP) represents a unique configuration of items tested within a large sample of GPs. Thirty-five experts from clinical practice, education and claims management confirmed the content validity of the domains and items. The KYRV2-GP – NP includes 11 domains (51 items) relating to risk-management behaviour in general practice.²² The response categories to the scale items ranged from 1 (never) to 8 (always). Construct validity has been established (60.23% of the total variance of the construct explained).²² Internal consistency (reliability) was assured with satisfactory Cronbach's alpha coefficients (0.7) for all domains.²²

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Demographic and other items

This survey also included demographic and workload items: age, sex, where graduated, number of doctors in practice and number of locations of practice, number of patients attended (face-to-face and telephone attendances including multiple attendances within an average week), number of prescriptions written within the past week, and number of weeks worked per year in direct patient care.

A report was sent to participants and included comparison benchmarks for GPs. GPs could also request information packages or a practice visit from a risk manager.

Table 1 Characteristics of currently working GPs (non-proceduralist) (n = 572)

Characteristic	n (%)	Median	Mean	SD
Age	568	51.50	52.47	11.11
Sex Male Female	300 (53.5) 261 (46.5)			
Years of experience (since date of graduation)	569	27.00	27.61	10.73
Training undertaken in Australia	401 (72.6)			
Number of locations worked over the last four weeks	572	1.00	1.36	0.62
Number of doctors in your practice	567	4.00	3.48	1.60
Number of prescriptions written within the past week	528	70.00	92.65	93.16
Number of weeks worked per year in direct patient care	560	48.00	45.44	7.40
Number of patients attended in your practice within an average week	558	106.50	109.54	64.63
Patients attended within an average year (number per week \times number of weeks worked)	553	4900.00	5108.59	3186.70

GP – Non-proceduralist is defined as a GP who notes that they do not conduct procedures and/or a GP who did not complete any items in the optional procedural domain in the KYRV2 97 item scale. Procedure was defined as an invasive clinical intervention, where there is an incision and/or the body cavity is entered; procedures may be therapeutic or diagnostic.²⁴ A vaginal delivery is also considered a procedure for the purposes of this data item and/or any procedure that normally requires patients' formal written consent

Ethical issues

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This self-assessment survey represents a quality assurance study under the National Health and Medical Research Council (NHMRC) guidelines not requiring ethical review.²³ Statements relating to the study purpose, participant selection, risks and benefits to participation, confidentiality and anonymity issues and how the information was to be used (research, education and development) were outlined in the survey on the medical insurer's company letterhead, thus complying with the guidelines.

Statistical analysis

Initially, independent *t* tests were conducted for two group comparisons – age groups (<50 years; \geq 50 years), sex (male, female) and workload intensity groups (<5000; \geq 5000 patients per year) – for the various risk-management domains. Second, multivariate analysis of variance (MANOVA), using the robust Wilkes' lambda test 23, examined group differences for main effects and all interaction terms (age × sex; age × workload; sex × workload intensity; age × sex × workload intensity).

Assumptions underpinning MANOVA procedures were satisfied and where difficulties appeared procedures used to manage these problems are noted on Table 3.²⁵

Results

Sample

Of those surveyed, 37.2% responded (617/1657; 572 currently working GPs plus 45 others not working in medicine). The median age of the sample was 51.5 years, with 27.6 years experience (mean; see Table 1), 53.5% being male, and 72.6% Australian trained. Most GPs worked in group practices, usually from only one location.

Differences between participants and non-participants

Participants were slightly older (52.5 years, standard deviation (SD) 11.1 years) than non-participants (mean 51.2 years, SD 10.8 years) and this difference was significant (t = 2.22, degrees of freedom (df) = 1592, P = 0.03). Similarly, there were more females in the participant group (46.5%) than in the non-participant group (33.2%) and this was statistically significant ($\chi^2 = 27.4$, df = 1, P < 0.001). The relevance of these differences to risk-management behaviour is examined further in this study.

Risk-management behaviours

Eleven domains representing key risk-management areas within general practice were examined (see Table 2). For six (practitioner communication, facilitating patient responses, managing adverse outcomes, practice setting, diagnosis, prescribing/treatment) of the 11 domains the mean score for participants was 85% or more of the possible maximum score in selfreported risk-management behaviours of GPs. Three domains had mean scores for participants less than 65% of the possible maximum score: patient management (61%), being aware of risk (44%) (heightened sensitivity to high-risk contexts such as patients seeking multiple opinions) and concern about risk (49%).

The patient-management domain retained only two items and there was considerable variation amongst the scores. Similarly, the being aware of risk domain retained only two items with a standard deviation of 2.86 for a mean score of 7.06. Concern about risk contained four items, although reversed items may have contributed to some confusion for the participants.

Age, sex and workload differences in risk-management behaviours

Age

Independent *t* tests initially demonstrated differences for age groups in five risk-management domains – facilitating patient responses, managing adverse outcomes, keeping up-to-date, practice setting, and concern about risk. Older GPs (\geq 50 years) achieved higher scores in five of the 11 domains (facilitating patient responses, managing adverse outcomes, keeping upto-date, practice setting, and concern about risk; see Table 2).

Sex

Female GPs also reported more frequent risk-management behaviour in the domains of facilitating patient responses, concern about risk, and documenting, than their male counterparts (see Table 2).

Workload intensity

GPs with lower workloads (fewer than 5000 patients per year) demonstrated increased performance of selfreported risk-management behaviours, with higher scores in patient management, facilitating patient responses, being aware of risk, and documenting.

Interactions

Statistically significant main effects for age, sex and workload were slightly diminished within the MANOVA

KYRV2-GP – NP domain (maximum score possible)	All non-	Age (years)		Sex		Workload intensity	ensity
(example item)	proceduaranist GPs $(n = 572)$, mean (SD)	<50 $(n = 242),$ mean (SD)	\geq 50 ($n = 326$), mean (SD)	Male $(n = 300)$, mean (SD)	Female $(n = 261)$, mean (SD)	Low $(n = 285)$, mean (SD)	High $(n = 268)$, mean (SD)
Patient management (16) (<i>I review the list of patients who do not attend</i>)	9.71 (3.77)	9.65 (3.57)	9.77 (3.94)	9.45 (3.99)	9.98 (3.52)	10.12 (3.75)	9.21 (3.78)**
Practitioner communication (48) (I discuss the management plan with patients)	43.30 (4.00)	43.31 (4.03)	43.33 (3.95)	43.22 (3.96)	43.37 (4.06)	43.33 (3.92)	43.31 (4.06)
Facilitating patient responses (32) (I encourage my patients to express their feelings about their health problems)	27.39 (3.74)	26.89 (3.98)	27.74 (3.53)**	26.95 (4.01)	27.87 $(3.40)^{\star\star}$	27.68 (3.71)	27.00 (3.81)*
Being aware of risk (16) (I can identify patients who have sought multiple medical opinions) (reversed)	7.06 (2.86)	7.22 (2.75)	6.95 (2.91)	6.91 (2.89)	7.25 (2.84)	7.33 (2.99)	6.79 (2.66)*
Managing adverse outcomes (56) (I deal with patients who have suffered an adverse outcome)	50.36 (5.89)	49.38 (6.73)	51.07 (5.10)***	50.40 (5.59)	50.24 (6.30)	50.11 (6.38)	50.63 (5.38)
Keeping up to date (48) (I compare my patient outcomes with my peers)	; 32.82 (8.30)	31.07 (8.30)	34.14 (8.05)***	33.23 (8.13)	32.29 (8.55)	32.60 (8.56)	33.04 (8.09)
Practice setting (56) (I ensure practice staff obtain current contact details from my patients)	49.69 (5.88)	49.05 (5.77)	50.20 (5.87)*	49.94 (5.77)	49.37 (6.03)	49.22 (5.86)	50.09 (5.94)
Concern about risk (24) (I change my treatment regime to avoid the possibility of litigation) (reversed)	11.83 (5.16)	12.59 (4.91)	11.29 (5.26)**	11.45 (5.22)	12.31 (5.06)*	12.08 (5.11)	11.71 (5.26)
Diagnosis (24) (I use a systematic approach to obtain my patient's clinical history)	21.15 (2.54)	21.01 (2.53)	21.25 (2.55)	21.20 (2.64)	21.07 (2.45)	21.13 (2.54)	21.21 (2.48)
Documenting (32) (I record details of telephone conversations where I give clinical advice)	26.35 (4.48)	26.59 (4.14)	26.14 (4.72)	25.75 (4.93)	27.03 (3.77)***	26.89 (4.16)	25.73 (4.76)**
Prescribing/treatment (56) (I check my patient's current medications with those I am prescribing for potential drug interactions)	48.98 (5.26)	48.56 (5.09)	49.33 (5.36)	48.91 (5.55)	49.00 (4.96)	48.97 (5.41)	48.97 (5.17)

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Table 3 *F* values for the multivariate comparisons of risk-management behaviour domains: age (< 50 years, \geq 50 years), sex and workload (<5000 patients, \geq 5000 patients a year) (*n* = 520)

KYRV2-GP – NP domain (<i>example item</i>)	Age group	Sex	Workload intensity	Age × sex × workload intensity
Patient management (16) (<i>I review the list of patients who do not attend</i>)	0.35	0.68	5.68*	0.04
Practitioner communication (48) (<i>I discuss the management plan with patients</i>)	0.15	0.51	0.05	0.17
Facilitating patient responses (32) (<i>I encourage</i> my patients to express their feelings about their health problems)	11.36***	9.99**	0.53	0.45
Being aware of risk (16) (<i>I can identify patients</i> <i>who have sought multiple medical opinions</i>) (reversed)	0.82	0.01	6.48*	0.19
Managing adverse outcomes (56) (<i>I deal with patients who have suffered an adverse outcome</i>)	6.47*	1.71	1.91	0.29
Keeping up to date (48) (<i>I compare my patient outcomes with my peers</i>)	9.70**	0.00	0.04	1.15
Practice setting (56) (<i>I ensure practice staff obtain current contact details from my patients</i>)	2.00	0.00	2.42	0.58
Concern about risk (24) (<i>I change my treatment regime to avoid the possibility of litigation</i>) (reversed)	3.77*	1.65	0.01	0.14
Diagnosis (24) (I use a systematic approach to obtain my patient's clinical history)	0.44	0.07	0.33	0.02
Documenting (32) ^a (<i>I record details of telephone conversations where I give clinical advice</i>)	0.13	4.40*	4.35*	0.03
Prescribing/treatment (56) (I check my patient's current medications with those I am prescribing for potential drug interactions)	1.03	0.21	0.08	0.31

 $*P \le 0.05, **P \le 0.01, ***P \le 0.001$

Workload has been calculated from the number of weeks scheduled work and the number of patients attended within an average week. The scores have then been placed in two groups (low, <5000; high \geq 5000)

^aNote: MANOVA revealed statistically significant differences for the main effects for age group (Wilks' $\lambda = 0.90$, F(12, 501) = 4.56, P < 0.001), sex (Wilks' $\lambda = 0.96$, F(12, 501) = 1.82, P = 0.04) and workload intensity groups (Wilks' $\lambda = 0.94$, F(12, 501) = 2.64, P = 0.002) on risk-management domains. For the documenting domain Levene's test confirmed a violation of homogeneity of variances and the Mann–Whitney non-parametric test for two independent samples was also performed with similar results

procedures (controlling for type I error possible with multiple *t* test procedures) and of the interaction of these aspects.

Four of the five domains previously identified as differing significantly in the bivariate analysis, remained significantly different for age groups within MANOVA – facilitating patient responses, managing adverse outcomes, keeping up to date, and concern about risk (see Table 3). For sex differences, female GPs retained statistically significant higher mean scores in two of the three domains identified as different in the *t* tests – facilitating patient responses, and documenting – using MANOVA procedures. For workload intensity (<5000 patients per year) GPs with lower workloads still retained statistically significant higher scores in the patient management, facilitating patient responses, being aware of risk and documenting domains (see Table 3) using MANOVA procedures. Although there was no overall significant main effect for two-way (age \times sex; age \times workload; sex \times workload) or three-way (age \times sex \times workload) interactions, an examination of the interactions between age by sex and age by workload intensity revealed that the area of facilitating patient responses was interesting. The facilitating patient responses score converges in the following manner: for female GPs from younger to older increases the behaviour, for male GPs from younger to older increases the behaviour, for younger GPs low to higher workload increases the behaviour and older GPs from low to high workload decreases the behaviour.

Discussion

An educational strategy which assessed risk-management behaviours and provided benchmarks for GPs was developed and implemented by the education unit of a large medical insurer. A simple self-reporting risk-management education approach has evolved. Study participants were slightly older (52 years) than the national average age of Australian GPs (48.8),² with a higher proportion of females (47%) than the Australian GP labour force (36.2%). Statistical differences in age and sex existed between participants and non-participants, and the response rate was relatively low (37.2%). Despite these issues, this study does present findings of a unique study of risk-management behaviour from a large group (572) of Australian GPs.

GP risk-management behaviour: measurement, education and activity

The KYRV2-GP – NP has been found to be a valid and reliable measure of medicolegal risk amongst Australian GPs, capable of measuring differences between groups, and should be tested further in other national and international studies. The KYRV2-GP – NP is a selfassessment instrument, based on principles of adult education, which delivered an educative message regarding key risk-management behaviours, and this strategy provided a report on behaviour relative to peers and was linked to an education service supplied by the insurer when participants identified gaps in knowledge. This is an approach to risk management that could be applicable to sole practitioners, groups of practices, divisions of general practice, or trusts, requiring further application and evaluation.

General risk-management behaviour

Key specific domains and behaviours reflect aspects of errors found in numerous studies and legal precedent:

diagnosis,^{10–15} patient management,^{13,16} practitioner communication,^{10–15} facilitating patient responses,^{10–} ¹⁵ practice setting,¹³ prescribing and treatment.^{9–15} Most GPs reported performing risk-management behaviours frequently (85% of the possible maximum mean score) for five domains (excluding patient management), suggesting GPs 'adequately' manage their risk within their practice. This result is consistent with other Australian self-report surveys of practitioner behaviour by Andrews and Barrett.¹⁶

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Patient management

Patient management - relating to patients' attendance and follow-up - defined through legal precedent, was of concern (61% of possible maximum score) and may reflect domain design issues or the controversy surrounding to what extent follow-up should occur. Andrews and Barrett indirectly propose that patient follow-up on two occasions is widespread practice, and recommend recording actions taken relating to patients who do not attend.¹⁶ It may be that precise recommendations on the number of times (2) further contact should be made and how to document that process are key risk-management educational messages in general practice. Computerised prompting systems are used by many practices, and this domain and behaviours are most likely improved through system re-engineering similar to the work of Poon et al,¹⁹ and the AHRQ.¹⁸ We also acknowledge the need for additional items to be developed and trialled in this domain.

Managing adverse events

Managing adverse events has been a critical area for medical insurers. This domain originated from a group of studies relating to post-adverse-event doctor-patient relationships and consequent litigation.⁹ The specific behavioural statements such as 'I am willing to talk to patients who have made a complaint', and the high level of performance of these behaviours suggest that the educational messages have been received.

Documenting

Documentation and the keeping of accurate written records have been emphasised, particularly in relation to diagnostic errors.^{26,27} Practitioners who experience a medicolegal event become aware of the importance placed by the legal system on documentation: documenting of discussions with colleagues, telephone patient attendances and key decisions and their origins. The use of computerised patient notes has reduced the onerous nature of this task. These findings do suggest

that educational messages relating to this aspect within medicolegal defence have been understood and acted upon. Detailing of the consequences of non-adherence to a regimen remains difficult for many practitioners,¹⁶ and further items could enhance the scale.

Defensive behaviour

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Being aware of risk (heightened sensitivity to high-risk contexts such as patients seeking multiple opinions) and concern about risk represent the evolving area of defensive medicine.¹⁷ The scores in these domains may reflect ambiguity about the merits of positive and negative defensive behaviour.⁷ We believe this initial domain could be improved with additional items and avoiding negative items (reversed) when referring to defensive behaviour.

In this study, risk-management behaviour varied little by age, sex and workload intensity, particularly when the interactions of age, sex and workload were examined. There were some initial differences within bivariate analysis that were not sustained within the interaction analysis. For the facilitating patient responses domain the interaction of age and sex, and age and workload is noteworthy. Educators should consider these findings when delivering information relating to facilitating patient responses: for older GPs, management of workload may enhance performance of risk-management behaviours relating to this domain, while for younger GPs this may not be the case. Only further studies can confirm these findings. A binary workload measure has been used in this study, and incremental levels relative to performance require further investigation. A longitudinal study of changes in behaviour over time is proposed.

Limitations

The KYRV2 does not measure clinical risk management, which is perceived by the insurer to be appropriately addressed by professional colleges. Also the use of behavioural statements limits the nature and scope of items that could be included. Items must reflect psychomotor behaviour and also require that an individual can be responsible for the behaviour. Many systems issues are beyond the scope of the practitioner, but are nonetheless implicated in medical errors.

These findings should be interpreted with the understanding that self-reporting of behaviours may result in under- or overestimation of the frequency of the behaviour. In addition, the relationship between an insurer and the insured has implications. We acknowledged this issue and prominently displayed the following statement on the survey: 'Achieving a low or high score on any or all the items of this scale will bear no direct or indirect relationship to your premium and will not affect it in any way'. Only observational studies of GPs in practice could confirm or refute the reported scores. The KYRV2 represents only one approach to risk management within primary care, and objective examination or audit of practitioner behaviour within the defined domains may also be appropriate.

The generalisability of these findings to other GP populations is debatable given the response rate to the survey and differences in age and sex compared to the population of GPs and non-participants.

Conclusion

Most GPs frequently perform preventive medicolegal risk-management behaviours. Some behaviours varied by age and sex, although when considering age, sex and workload, these differences were not sustained. The KYRV2-GP – NP is a simple self-administered scale outlining behaviours derived from major areas of medical error. It is easily administered to GPs in sole or group practices and represents a unique approach to risk-management education in primary care. This education initiative focuses on self-assessment and peer comparison, and allows the GP to request further focused educational support. Computerised tools supporting patient follow-up and documentation are recommended. Research into the relationship between workload intensity and performance of riskmanagement behaviour is suggested.

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ETHICS

Ethical considerations are outlined in the paper. Formal statements are included in the paper regarding NHMRC guidelines for quality assurance projects and how they were fulfilled.

CONFLICTS OF INTEREST

This project was conducted by persons employed by UNITED Medical Protection noted in the authorship listing.

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