POSTGRADUATE MEDICAL
INSTITUTE OF TASMANIA Inc.

JUNIOR MEDICAL OFFICERS AND MEDICAL ERROR

Final Report

Commissioned by the Medical Training Review Panel

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EXECUTIVE SUMMARY

This was a Tasmanian project undertaken by the Postgraduate Medical Institute of Tasmania Inc. investigating Junior Medical Officers (JMOs) and medical error.

The project aimed to:

- Generate a gap analysis of information that is available to, and required by, junior doctors on medical error;

- Explore the communication and management of medical error, including the impediments to effective reporting, within PGY1 & PGY2 contexts.

- Develop recommendations and guidelines for a training programme for postgraduate year 1 (PGY1) and 2 (PGY2) doctors in relation to medical error management

In accordance with the project agreement a Project Officer and Project Manager were appointed, as was a Project Team and a National Advisory Committee.

METHODOLOGY

To achieve the project objectives, the following activities were undertaken during the course of the Project:

- **A Literature Review**

  A comprehensive literature review was undertaken to explore JMO's experience of medical error both in Australia and internationally, and to place it within the current context of medical error.

- **National Scoping Study – gap analysis**

  The aim of this part of the study was to discover the information on medical error that is currently available to JMOs during orientation and ongoing education. The scoping study results were achieved through structured telephone interviews and electronic surveys which were disseminated to Medical Education Officers, Junior Medical Officer Managers and Directors of

Clinical Training throughout Australia. A total of 127 surveys were distributed. A total of 67 completed surveys were returned giving a response rate of 53%.

These methods resulted in a gap analysis of information currently available to junior doctors on medical error compared with information on medical error which junior doctors perceive that they require. The survey also resulted in data about JMOs perceptions of obstacles to the effective reporting and management of medical error, and strategies that might assist in overcoming these obstacles. This data forms the basis of the study recommendations and guidelines for a training program for JMOs in relation to medical error.

- **Survey of PGY1/2 Doctors (Tasmania)**

To ascertain junior doctors' perceptions of their educational needs regarding medical error, PGY1/2 doctors at the Royal Hobart Hospital, Launceston General Hospital and the North West Regional Hospital, were asked via individual interviews, focus groups and scenario based surveys, to consider their educational needs regarding medical error. In total, 93 JMOs participated in the study which represents over 50% of JMOs in Tasmania.

These methods resulted in a gap analysis of information currently available to junior doctors on medical error compared with information on medical error which junior doctors perceive that they require. The survey also resulted in data about JMOs' perceptions of obstacles to the effective reporting and management of medical error, and strategies that might assist in overcoming these obstacles. This data forms the basis of the study recommendations and guidelines for a training program for JMOs in medical error.

- **Structure of the Report**

As outlined above, this study utilised both qualitative and quantitative methods. While direct quotes from individual doctors have been used in the report, they have been chosen because they are typical of the responses of the majority of JMOs who participated in the study. The main participating hospitals in this study used the term JMO to refer to PGY1/2, thus in this report the two terms are used interchangeably.

RECOMMENDATIONS

Based on the data gathered from MEOs, DCTs and JMOs who participated in this project eight recommendations for a training program for JMOs in medical error have been put forward:

1. An explicit approach to the topic of medical error.
2. A clear definition of what is meant by the term 'medical error'.
3. Improved education about the processes and consequences of completing an incident form.
4. A concisely written information sheet detailing the process/expectations of error management.
5. Improved training in the prevention, recognition and reporting of medical error.
6. Greater information about the theoretical aspects of medical error.
7. An opportunity for JMOs to discuss, debate and share their experiences of and attitudes to medical error.
8. Ongoing education in medical error for Registrars so that they can appropriately support JMOs.

LITERATURE REVIEW

A literature review was undertaken during the preliminary stages of the project. Due to the significant number of different terms used to discuss the subject of medical error, the literature search included a number of terms commonly used in the field of medical error. Search terms included: medical error, adverse events, incidents, accidents, mishaps, near misses, patient safety, quality improvement, postgraduate medical education, prevocational training, medical education, junior doctors, house officers, and interns.

Literature was accessed from a number of sources. Databases including Synergy, ProQuest, PubMed and others were utilised throughout the project. Information and relevant reports were also accessed from clinical libraries, pertinent websites and Postgraduate Medical Councils around Australia.

DEFINING MEDICAL ERROR

The project definition of medical error was drawn from the Institute of Medicine's Report 'To Err is Human'. Medical error, for the purpose of this project, was defined as 'the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim' (Kohn et al, 2000).

There is considerable discussion regarding nomenclature used within the field of medical error, and Cuschieri (2003) believes that both the perspective and the background of the author inform the language used to communicate the topic of medical error. Grober and Bohnen (2005) reiterate this point suggesting that what is considered a medical error is influenced by 'differing contexts and purposes'.

A review of the literature revealed that the topic of 'medical error' is communicated via a number of terms. These include: 'adverse events', 'medical mishaps', 'mistakes', 'accidents', 'incidents' and 'near misses'. The terms 'patient safety' and 'quality assurance' are also terms used within the context of medical error.

As this project was not concerned with the classification of different types of error, the term ‘medical error’ was used to encompass all these terms.

THE CONTEMPORARY CONTEXT OF MEDICAL ERROR

Medical error and patient safety have become large and public concerns for every hospital and every medical specialty (McNeill & Walton: 2002). Each year in Australia medical error results in as many as 18,000 potentially avoidable deaths, and more than 50,000 patients become disabled (Weingart et al: 2000). Runciman and Muller (2001) also note that being an inpatient in an Australian acute-care hospital is 40 times more dangerous then being in traffic.

In the United States medical error results in at least 44,000 – 98,000 potentially avoidable deaths each year and 1,000,000 excess injuries (Kohn et al: 2000). In a study of the quality of Australian health care, Wilson and his colleagues (1995) found that 16.6% of admitted patients experienced an adverse event that contributed to longer hospital stays, disability or death. Further, they identified that over 50% of adverse events were considered to have been preventable. However, whilst this study has been widely cited and is considered significant within its field, Bellomo (2002) notes that it was also the source of some debate because of the retrospective research design.

There is a growing recognition that medical errors typically result, not from carelessness or incompetence, but from systems failures that are sometimes difficult to analyse and correct (Leape: 2000; Cuschieri: 2003). Much attention is now focussed on examining the changes that are needed within in medical systems in order to reduce the likelihood of medical error (Helmreich: 2000), and the establishment of a reporting culture within hospitals (Reason: 2000). Adherents to the systems approach strive for a comprehensive management program aimed at the doctor, the team, the task, the workplace and the institution as a whole.

CURRENT APPROACHES TO THE MANAGEMENT OF MEDICAL ERROR

There is an increasing body of research which supports the notion that system responses to medical error have to move away from the traditional ‘name, blame and

shame' approach (Kohn et al: 2000; Waring: 2004; Hannon: 2000; Volpp: 2003), instead focusing on preventing errors and implementing systemic changes which support and promote safer practice, procedures and knowledge. Maintaining a focus on systems holds the greatest promise (World Health Organisation: 2004).

It has been suggested that healthcare professionals habitually focus their energies on individual patients, addressing problems as they occur rather than in parallel. Responding to an incident on the basis of the blaming the individual responsible has limited effectiveness (Anderson & Webster: 2001), and does not provide a strong foundation for prevention or managerial strategies (Runciman and Moller: 2001). Whilst individual care is a critical element of healthcare, without viewing incidents as part of a system, patients are at risk from suffering from a 'faulty service'.

Reason (2001) discusses the problems within traditional organizational responses to error. He comments on the 'person' model, which he describes as the foundation of most conventional occupational safety approaches. The 'person' model is largely concerned with trying to change individuals' behaviours, and utilizes naming, blaming, shaming and retraining as its primary tools (Reason: 2001). He suggests that focusing on the individual decontextualises the incident/error, removing the system context. Whilst it is suggested that human error does play a role in a large percentage of errors arising from complex systems, it should be viewed against a environment of organisational, technical and equipment-interface problems which may actually be the prime causes of the incident or accident, as opposed to merely a causative agent (Runciman & Moller: 2001).

POSTGRADUATE MEDICAL CURRICULUM

At the time of writing there is no standardized Australian curriculum for use in the training/education of junior doctors. In 2004 the Postgraduate Medical Council of New South Wales completed the first stage of a project aimed at assessing and evaluating the current components of junior doctor curriculum. This document details a list of recommended learning outcomes, which contain a Patient Safety, Quality in Healthcare and Risk Management outcome. Medical error is often explored thematically through the use of language such as 'patient safety' or 'quality improvement', and this document follows this pattern. This outcome recommends

that PGY1 & 2 should be able to understand and engage in quality improvement activities, as it relates to the safety and care of patients. It is recommended that content which could lead to achievement of the learning outcome include the capacity of the JMO to be aware of and understand one's potential to make errors, and an understanding of the process of incident investigation.

In 2001 the National Guidelines for Intern Training and Assessment for Junior Medical Officers, first published in 1996, was reviewed and updated by the Confederation of Postgraduate Medical Education Councils. In 2003 The National Training and Assessment Guidelines for Junior Medical Officers PGY1 & 2 was subsequently released. This document articulates a number of guidelines pertaining to the training and assessment of junior doctors, specifically within the PGY1 & 2 context. The guidelines offer a comprehensive overview of content that should be included and areas in which JMOs should be proficient in by the end of the two-year period, such as clinical skills, communication with patients and colleagues, and the ability to access relevant organisation policies and procedures. However, given that the Guidelines propose that medical educators should regularly assess clinical skills to allow for emerging themes in medicine, one of which is listed as Patient Safety, there is little indication that the topic of medical error is currently considered a priority in postgraduate medical education.

In 2005 the Foundation Years Curriculum was published in the UK, developed for implementation into the 2-year foundation-training program for junior doctors. Cowan & Kavanagh (2005) suggest that the new curriculum demands more from junior doctors, in regard to medical error, than the previous curriculum. New competencies include the ability to demonstrate knowledge of 'principles of error disclosure' and 'long-term effects of medical errors', and 'local and other stages of complaints procedures'. Other competencies include basic procedures, communication and consent, and safe prescribing and transfusion practices (Cowan & Kavanagh: 2005). In Australia in 2005 The Australian Council of Quality and Safety in Healthcare released the National Patient Safety Education Framework. This framework outlines the skills, competencies and knowledge required by healthcare practitioners in regards to patient safety, and was developed for use with all healthcare workers. This is in contrast with past frameworks that have been specific to professions. The

framework has 7 key learning areas, with 22 learning topics and was developed for use in a wide variety of settings. It is suggested in the document that the framework can be used in the development of curricula and education/training programs in patient safety for hospitals (The Australian Council of Quality and Safety in Healthcare).

JUNIOR DOCTORS AND MEDICAL ERROR EDUCATION

There is a dearth of literature about medical error within the field of postgraduate medical education (Weingart: 2004). There is also a lack of literature that explores the topic of medical error as part of postgraduate curriculum. Flanagan et al (2004) suggests that human error and medical culture will be a focus of health professional education in the 21st century. In 2001 The Australian Council for Safety and Quality in Healthcare also listed the development of curricula for educational modules in 'systems safety, human factors and communication' as a council priority (Barraclough, 2001: 617).

Weingart (2004) comments that whilst there are several noteworthy reports of quality improvement education for undergraduate medical students, there are few reports that detail activities involving junior doctors and quality improvement. A recent article briefly reports on a Quality Improvement Elective that was offered to PGY1 and PGY2 JMOs in a Boston teaching hospital, which had the identification of an incident and subsequent management of error (Weingart: 2004). In 1998 Pilpel et al reported on a teaching program in Israel, developed to communicate to medical students a tolerance toward medical error. The curriculum encouraged students to view medical error as both 'reducible and inevitable', and fostered a culture where students realised their uncertainties were common amongst all their peers (1998).

Taylor and Chudley (2001) report on a project undertaken by a Canadian university aimed at developing a core curriculum for approximately 360 JMOs. Although the paper contained a comprehensive listing of tutorial topics there no mention of the topic of error. Results reveal a high attendance at Medico-legal sessions. Pilpel et al (1998) also discuss the importance of conveying to medical students a tolerance of medical error, however they suggest that cultural, cognitive and emotional barriers may be encountered whilst trying to actuate a change in present attitudes toward

error. Lester and Tritter (2001) also suggest that it is important to recognize the role that undergraduate training in medical error has in medical thinking about error.

PRACTICE FRAMEWORK OF JUNIOR DOCTORS

Hamilton (2000) suggests that the rate of clinical errors is highest in the first postgraduate year, and that stress levels of junior doctors are elevated because of the fear of making errors. Historically, one of the most significant pressures facing junior doctors consists of the working hours required to meet the demands of postgraduate training.

There have been strategies to reduce the amount of hours which junior doctors work. In Australia, over the last decade, the Australian Medical Association has been researching and raising awareness of the risks associated with the working hours of junior doctors. In 1999 the National Code of Practice - Hours of Work, Shiftwork and Rostering for Hospital Doctors was developed through consultation between doctors, state health administrations, medical and regulatory organisations, doctors, and all Australian hospitals (Australian Medical Association: 2005). This is a voluntary code, designed to act as a practical guideline for attempting to minimise the risks associated with extended working hours and shift work. However, whilst the Federal Council of the AMA adopted this code of practice, there still exists no national regulation of working hours (Australian Medical Association: 2005).

In their project investigating the effects of reducing interns working hours on serious medical errors in the intensive care environment, Landrigan and colleagues (2004) note that during 'traditional' rostering (that included extended work shifts of 24 hours or more), interns made 36% more medical errors, including more serious diagnostic and medication errors. This is in comparison to the work schedule designed for the study, which excluded extended shifts and stipulated a maximum of 16 consecutive work hours at any time.

It has also been widely documented that 'doctors in training' (PGY1 doctors) have had a reduction in working hours because of the growing understanding that working hours were unacceptable for both JMO and patient welfare (Carr: 2003). However, Carr (2003) adds that the reduction in hours spent at work has meant that the

intensity of work hours has increased dramatically, thus leaving less time for education with colleagues and personal reflection (p: 622). In keeping with this argument, Baldwin and colleagues (1998) comment on findings from a 10 year UK study indicating that medical error from JMOs are likely to be attributable to lack of knowledge and expertise, opposing the assumption that errors are caused by lack of sleep and long working hours.

Chow et al (2005) report on a study conducted in a metropolitan teaching hospital in Hong Kong. This study involved a review of voluntarily reported ‘near miss incidents’. It was found that interns were twice as likely to have a ‘near miss incident’ during their first month of practice than in the remaining 12 months. It was also revealed that these near miss incidents were more likely to occur whilst interns were on-call, or working extended shifts.

Jagsi & Surender (2004) comment on a study undertaken with junior doctors and consultants to investigate their attitudes toward how reduced working hours would affect patient care, quality of life for junior doctors, and medical education. Doctors from the UK and USA revealed that they believed medical education would suffer, both from reduced exposure to the clinical environment, and reduced time spent with patients and supervisors.

INTEGRATING MEDICAL ERROR INTO POSTGRADUATE EDUCATION

The management of medical error is a complex issue for postgraduate medical educators to address. Culturally, both within and external to medicine, medical error still has connotations of failure. Reason (2001) suggests that there needs to be an end to treating errors as a moral issue. ‘Fallibility’, he suggests, ‘is the norm, not the exception’ (Reason, 2001: 9).

The training of junior doctors has received much comment in recent years (Gibson & Campbell: 2000). However, whilst it is suggested that medical error may be more common when clinicians are inexperienced (Weingart et al: 2000), little attention has been given to how junior doctors can be effectively educated to understand strategies to reduce the incidence of medical error and to enhance the management and reporting of medical error. Cowan & Kavanagh (2005) consider that junior

doctors need to be educated about medical error from those not directly involved with patient care. They propose that professionals, who are cognizant of current developments in patient safety and safe practice, including the management of a serious event, should provide education.

Wu and his colleagues (1991) undertook one of the few studies in this area with a survey of 114 junior doctors in America. They concluded that junior medical staff may be more likely to make medical errors than experienced medical staff, and that these mistakes ‘may be particularly distressing for physicians in training’ and that the latter may, in fact, become what Wu calls ‘the second victim’ of medical error (1991:2089). Wu et al highlight the importance of appropriate training for junior medical staff about medical error and suggest that ‘ideally, mistakes would be used by medical educators as teaching tools…physicians can learn from their mistakes even as they strive to minimise their occurrence’ (Wu et al 1991:2094).

MEDICO-CULTURAL ATTITUDES TOWARD MEDICAL ERROR

There is extensive research relating to medical culture. Much of the contemporary reporting on medical error points toward the fact that whilst change needs to be addressed at a systemic/organisational level, changes also need to be implemented which are aimed at changing the culture of medicine. Kingston et al (2004) reiterate this sentiment, suggesting that in order to transform the current system, change needs to occur on a cultural level. Hamilton (2000) also comments on culture, suggesting that healthcare professionals practice in an environment that demands perfection.

In 2004 Rosenbaum et al reported on their research with medical residents, investigating sources of ethical conflict. The authors’ use the example of a resident witnessing inappropriate behaviour by a colleague, suggesting that fear of the consequences for themselves or their colleagues, combined with lack of knowledge or support about the process affects the residents’ management of that situation. Rosenbaum et al (2004) suggest that given the increasing focus on medical error, attention needs to be paid to how the concept of professional self-regulation can be integrated into education programs.

Kohn at al (2000) comment on the culture of healthcare organisations, suggesting that whilst the culture instilled during training is valuable in that it encourages personal responsibility, this also leads to a 'culture of hierarchy and authority in decision making' coupled with 'the belief that mistakes should not be made' (p: 179). This is further enforced by the fact that doctors often train in isolation from other health professionals, thus losing the opportunity to learn to share authority.

Dean et al (2002) comment on a study that was undertaken at a UK teaching hospital where prescribers of potentially serious prescribing errors were interviewed. 34% of the interviewees were junior doctors. The authors indicated that their results reveal a culture within medical teams that dissuades junior doctors from seeking clarification if needed, or questioning the decisions of senior doctors.

MEDICAL ERROR REPORTING

Australia has no national reporting system for medical error. However there are programs in use, such as The Australian Incident Monitoring System (AIMS) that are becoming increasingly popular in organisations within Australia. AIMS uses a single generic form to collect the data for both reporting and monitoring (Australian Patient Safety Foundation).

Junior doctors often find themselves in clinical situations where they know that the standards of care they are giving are inadequate, or where they witness or participate in an error. However, cultural barriers and uncertainty often stop junior doctors from reporting (Cowan & Kavanagh: 2005). There is a perception that reporting unsafe practice may hold adverse professional and personal ramifications (Cowan & Kavanagh: 2005). Other reasons for failure to report include feelings of shame or guilt, fear of punishment and membership of a profession that values perfection (Selbst: 2003; Kohn et al: 2000). There are also a number of system factors that prevent or discourage doctors from reporting incidents (Rosenthal: 2004). These include inadequate feedback, time constraints, failure to respect and have faith in the process, doubt regarding the ramifications, and fear of retribution (Rosenthal: 1995; Rosenthal: 2004).

In Australia, a recent study looked at attitudes of medical staff to medical errors and barriers to reporting them. The authors found that common barriers to reporting errors included time constraints, unsatisfactory processes, deficiencies in knowledge, cultural norms, inadequate feedback, beliefs about risk, and a perceived lack of value in the process (Kingston et al, 2004). A recent UK study involving 2500 doctors found that only 15% of serious incidents resulting in death or serious disability were reported to existing schemes. In this study, 97% of respondents felt that a reporting system would improve patient care, but eight out of ten said they did not trust their employing NHS trust or the Department of Health to run it (White, 2004).

CONCLUSION

Junior doctors enter an environment that is burdened with subtext, expectation, and the chaos of a changing system. As demonstrated by current literature, junior doctors are faced with enormous pressures.

Pilpel et al (1998) suggest that because error is rarely discussed during undergraduate medical courses, there is an assumption that proficient doctors do not make errors. Because of this, junior doctors commence their postgraduate training with a well-established belief system about the implications of medical error. However, there still exists a dichotomy in the medical error debate, because despite the incidence of errors and belief that there is a degree of inevitability about error in medicine (Al-Assaf et al: 2003), there still exists a firmly entrenched idea that only incompetent doctors make mistakes. Reason (2001; 9) suggests that healthcare systems have to account for 'real human beings –with all their failings – rather than for some angelic and omniscient ideal'.

Higgins et al (2005) comment that many doctors believe that non-clinical skills are a vital component of successful practice. These non-clinical skills include the topic of patient safety, and more particularly, medical error. Research also supports the need for patient safety to be addressed within postgraduate medical curriculum as a topic that is explored candidly.

NATIONAL SCOPING STUDY

METHODOLOGY

A National Scoping Study of Medical Education Officers (MEOs) and Directors of Clinical Training (DCTs) was conducted to determine the information regarding medical error that is currently available to JMOs during orientation/ongoing education. Contact details of MEOs and DCTs were obtained through Postgraduate Medical Councils in each State, conference lists and in some cases via contact with individual hospitals.

The scoping study was initiated with six structured telephone interviews with Medical Education Officers. This allowed the Project Officer to familiarise herself with the current context of postgraduate medical education, specifically in regard to medical error and the language educators use to communicate the topic of error.

The data obtained during the telephone interviews formed the basis of a 1-page survey (Appendix 3). The survey was first distributed to the Project Team for consideration, and was then piloted with 2 MEOs and 2 DCTs. After some refinement, it was distributed via email to the broader group of MEOs and DCTs across Australia. A total of 127 surveys were distributed.

Initially participants were asked to return completed surveys within 6 weeks. However, after two months had elapsed, less than 30% of surveys had been returned. In order to achieve a level of return that would accurately reflect how medical error is being addressed within JMO orientation/ongoing education, the survey return period was extended to four months. In addition, non responding MEOs and DCTs were followed up by the Project Officer via email and telephone contact and encouraged to respond to the survey. This strategy resulted a total of 67 completed surveys returned which gave a return rate of 53%. This percentage is a conservative estimate as it is impossible to ascertain if all surveys reached the intended recipients.

The following section documents the results of the MEO/DCT survey returns.

Question 1

Do you include the following topics, in regard to medical error, in your orientation/ongoing education program for Junior Medical Officers?

	Yes	No
Prevention of medical error	75%	25%
Recognition of medical error	67%	33%
Reporting of medical error	77%	23%
Management of medical error	74%	26%
Other	19%	

Responses to question one indicate that approximately seventy five percent of organisations represented in this survey currently address medical error in JMO orientation and education programs.

However, despite the encouraging results, most respondents indicated that the inclusion of topics relating to medical error was often not addressed in an explicit way, or was addressed during sessions on other topics.

Respondents made the following comments

Medical error is not discussed as a specific topic – but it is included during the medico-legal 30 minutes session during orientation and in the 3-hour education sessions for interns. The focus of these sessions best fits under prevention of error (in regard to clear documentation), and a very small amount of time spent on the management of error (hospital reporting of serious error)…

JMOs have weekly tutes where there is some emphasis on common 'mistakes' and how to avoid them; how human nature can contribute, and approaches through which to minimize… however, this said, there are no explicit sessions on systems based approaches to error or reporting of error…

There is no specific session on medical error at our organisation; however we do run sessions that incorporate medical error including risk management, adverse drug reactions and reporting and drug charts

From the results it appears as if medical error is addressed via the exploration of other topics. It was also evident within the results that there exists within this topic debate around the terminology surrounding medical error, a fact also illustrated within the literature review. Many respondents also included a note at the end of this question that stated that they worked to avoid the term 'medical error', preferring to use terms such as 'patient safety'. One respondent described this as a 'less frightening' manner through which to explore the topic of medical error, taking the focus away from individuals and making the focus about patient safety.

The majority of respondents who marked the 'other' category also included at least two other topics in their response. Respondents who marked the 'other' category indicated that the following topics were included in medical error education at their organisation: communication with patients, disclosure of error, the emotional aspects of error (described as the psychological/emotional aspects of dealing with medical error), dealing with common medical problems and medication errors.

Question 2

How is the medical error component delivered?

88% of respondents answered question 2.

Orientation & JMO tutorials	53%
Simulation based education	19%
JMO lunchtime forum	14%
Powerpoint presentation and/or video	14%
JMO handbook	8%
Discussion with MEO	5%
Handouts	5%

When the survey was developed, it was intended that this question would be used to identify the format of medical error education currently incorporated into JMO

orientation and education programs. In retrospect, this question should have perhaps given respondents the choice of modes of delivery, for example: case studies, tutorials, and video presentations. Respondents, however, answered this question with information more appropriate to Question 3, which asked respondents to identify which groups were involved in the delivery of a medical error component.

Based on the returns, it was evident that the most common format used to address medical error was via JMO tutorials. 53% of respondents indicated that medical error education was delivered via JMO orientation and ongoing education sessions, specifically during tutorials and lunchtime discussions.

A large proportion of respondents indicated in this question the specific groups that they used to deliver medical error education. These groups included pharmacists, medico-legal representatives, and members of the Quality and Safety/Risk Management Unit. Whilst this was not exactly the question that we wanted answered, respondents did also indicate that these were delivered via lectures at orientation, and during tutorials. Some described ‘medico-legal hypotheticals’, whilst others commented on ‘round-table discussions’ held during lunchtime meetings.

Generally, the information provided by respondents suggested that medical error is a topic that is largely addressed using an informal style of communication, as opposed to utilising a more formal approach. One respondent described medical error sessions as descriptive and didactic whilst another considered the although medical error was ‘not discussed directly’ it was something that underpinned the majority of JMO education. One MEO described medical error as a ‘flavour added to clinically focussed tutorials’. Many respondents also included additional comments, which suggested that medical error was a subject that was implicit in all topics that were addressed.

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About 10% of respondents indicated that medical error was addressed through JMO attendance at Grand Rounds, Case Reviews and Serious Incident and Morbidity and Mortality Reviews. Another ten percent of respondents indicated that Senior Medical Staff (including Chief Medical Officers and Directors of Clinical Training) and administrative staff were involved in the delivery of medical error education. Less than 10% of responses identified JMO handbooks as the mode of delivery for medical error information.

A large number of respondents in this project also indicated that their organisations were addressing medical error through simulation based teaching, or were currently developing or investigating the integration of simulation based methods into their JMO education programs. Simulation based teaching offers junior doctors the chance to practice skills, both clinical and non-clinical, in realistic, non threatening situations. Although medical error was not specifically addressed in simulation activities, MEOs and DCTs considered these activities to be a critical component in addressing medical error. As one MEO stated

> *JMOs attend Simulation sessions – where the mission of the centre is to improve patient safety - however the sessions are not didactic. Patient Safety*

messages are embedded in the Crises Resource Management Training based around participation in the clinical scenarios.

Most respondents suggested that medical error was addressed through formalised teaching methods, such as tutorials or case studies; however there were several respondents who indicated that medical error was addressed on an individual level. One respondent suggested that their organisation had a 'pretty simple' approach to the management of medical error JMO education, stating 'I say to JMOs, talk to me ASAP if you think a medical error has occurred'. Another respondent suggested that JMOs were encouraged to discuss 'any areas of concern with term supervisor/DCT '.

Question 3

Which of the following groups are involved in the delivery of a Medical Error component during JMO orientation and education?

Pharmacy	63%
Quality and Assurance	53%
External Agencies (eg AMA)	32%
Medico-legal	31%
Other	23%

Pharmacists were the most frequently indicated group in this question. One third of respondents indicated that medico-legal groups were involved in JMO orientation and education programs.

Most respondents did not specify which external agencies were involved in the delivery of medical error education. However, of those who did respond, several identified representatives from the State Coroners Office and Medical Defence organisations. Interviews with Tasmanian JMOs also revealed that Medico-legal information was the only aspect of orientation, relating to medical error, that most JMOs could remember.

Almost a third of respondents answered the ‘Other’ category for this question. Groups and individuals who were indicated under this category included Medical Administration, MEOs and DCTs, Chief Medical Officers and Senior Medical Officers, and Registrars. Respondents who marked ‘other’ also tended to include one or more of the other groups in their answer. Most often, the ‘other’ groups were from Pharmacy and Quality and Assurance.

Question 4

How much time is allocated to a Medical Error component per year?

15 minutes	3%
30 minutes	23%
1 hour	11%
2 hours	17%
More than 2 hours	46%

Based on the respondents who indicated a time spent on medical error during JMO orientation and education, organisations involved in this survey are dedicating an average of 6 hours a year to the topic of medical error. In saying this, however, it is important to note that most respondents indicated that medical error is addressed implicitly rather than explicitly. Even those respondents who indicated a time spent on medical error per year included a note suggesting that it was problematic to quantify the amount of time spent on medical error.

Almost 50% of respondents answered ‘other’ to this category. The impression that respondents gave in this category was that they considered it a difficult task to quantify the time devoted to medical error. During this question respondents again raised the issue of implicit versus explicit teaching on medical error. For example

> *one hour a year explicit, 30 minutes a week implicit*

there is only 1 hour specifically set aside for an explicit session on medical error – during orientation. However there is a flavour of medical error to at least half the tutes.

This topic {medical error} is integrated into many tutorials as part of the overall perspective. There are also several specific tutes on the legal aspects & interpersonal and team work perspectives of dealing with medical error

We do 2 hours directly, but it {medical error} is a component of many other topic areas discussed over the year

Other respondents described more informal sessions. One MEO stated that they had ‘informal but regular discussions/sessions on safety and error each term’ and another stated that the topic {of medical error} was integrated throughout year. Other respondents also stated that feedback and discussion about medical error occurred as incidents arose, either individually or as part of a group discussion.

Question 5
Are there any resources on medical error available to JMOs at your organisation?

Intranet	58%
Handbook	49 %
No response	16 %
Handouts	13%
Unsure	6 %
Miscellaneous	26 %

Most respondents indicated that they had one or more resources on medical error available to JMOs at their organisations. Of those respondents, who reported that their organisation had a handbook with information regarding medical error, most also indicated that they utilised the hospital intranet. Almost 50% of respondents indicated that handbooks and the hospital intranet were medical error resources used at their organisation.

Whilst some respondents specified that the handbooks were specific to JMOs, other responses indicated that handbooks were generic, supplied to all new staff. Respondents who indicated that the handbook contained information specifically pertaining to JMOs also indicated that information on medical error was not explicit and did not directly address medical error.

Other responses included a variety of resources, including videos, handouts, JMO survival guides, orientation manuals, policy and procedure manuals and electronic incident reporting forms.

Almost 10% of respondents indicated that they did not know of any resources regarding medical error at their organisation, with another 10% stating that they had no resources at their organisation.

Question 6

From your experience, what specific areas of Medical Error are important to include in a JMO education program?

Creating a ‘no blame’ culture	31 %
Documentation – eg drug charts	29 %
Prevention and Reporting of medical error	26 %
Risk management process Incident reporting	19 %
Communication i.e. handover etc	18 %
Theoretical context of medical error	14 %
Clinical procedures	8 %
Medico legal	5 %

Respondents identified a number of topics that they thought were important to include in JMO education. However, there were three topics that respondents identified as particularly significant, including the prevention and reporting of medical error, documentation, and fostering a no-blame culture. Other topics that were identified were communication, theoretical understandings of medical error, hospital protocols and procedures, electronic incident reporting, and medication errors.

The identification of people whom JMOs could report to and discuss errors with was also felt to be important by a number of respondents. Other responses included:

- information about the processes of reporting error needed to be available and transparent
- clear reporting responsibilities need to be known by all.
- strategies to prevent and minimise risks including best practice regarding patient handovers, drug administration, and the effects of working hours and exhaustion.
- being proactive, not just reactive
- need to highlight defensive versus good medicine within JMO orientation and education.

Approximately a third of respondents stated that clear and accurate documentation was a priority within medical error education. Respondents listed examples including drug charts, consent forms, labelling of bloods, blood transfusions, and pathology and x-ray referrals.

A similar number of respondents commented on the need to communicate to JMOs an understanding of the current culture regarding medical error, more specifically, the need to implement change. Most respondents used the terminology of no-blame, suggesting that fostering a culture of no blame was critical in JMO ongoing education. Respondents indicated that it was vital to convey the importance of placing the emphasis on a system-based approach to error, as opposed to the 'blame and shame' individualised approach. Comments included that JMO education needed to highlight the importance of remaining objective and not personalising medical error and that it was imperative to emphasise a hospital culture of collective responsibility; it was important to implement strategies for prevention, rather than

blame. Another respondent stated that 'remediation rather than the concept of blame' had to be a focus for JMOs.

Other topics which respondents felt were important included communication, clinical procedures, and a theoretical approach to medical error. Communication was identified by almost 20% of respondents and referred to issues such as communicating with patients, medical colleagues and members of the multidisciplinary team. Approximately 10% of respondents also suggested certain clinical procedures that needed to be included in medical error education. These included the insertion of nasogastric tubes, intercostal catheters, pleural taps and peritoneal drainage.

Some respondents expanded on the topic of integrating a theoretical overview of medical error into education programs. This included topics such as the national and international incidence of medical error, common causes and types of error and prevention and management of medical error. Others suggested that models of error management, such as the James Reason Model, needed to be utilised.

JMO INTERVIEWING and SURVEYS

DATA COLLECTION STRATEGIES

The aim of this phase of the project was to ascertain the information that JMOs perceive they require about medical error, their perceptions of obstacles to the effective reporting and management of medical error, and strategies that might assist in overcoming these obstacles.

Permission to contact JMOs to seek their involvement in the Project was given by the CEOs from the three major hospitals in Tasmania – The Royal Hobart Hospital, Launceston General Hospital and the North West Regional Hospital. JMOs from these hospitals were then invited to participate in the study via individual letters outlining the project aims (Appendix 2). There was a great deal of interest in the project and the response from both JMOs and each hospital administration was extremely positive.

An interview guide was developed by the Project Officer and distributed to the Project Team and National Advisory Committee for comment. The questions that were developed initially were as follows:

- Has medical error been addressed in your orientation/education program?
- Why is it important to have an understanding about medical error?
- What information do you think JMOs need about the reporting and management of error?
- What are the obstacles to the effective reporting of medical error?
- What are the obstacles in the management of medical error?
- What strategies can assist in overcoming these obstacles?

As the response rate for mailed questionnaires was found to be extremely low in previous studies conducted with JMOs at these hospitals (Yee, DC & Hemmings, LC) it was decided that JMO data collection would be best managed through individual interviews conducted by the Project Officer. After completion of three interviews with

JMOs the Project Officer noted that while rich data was gained during the individual interviews with JMOs, a constant difficulty was that they disclosed medical errors that had been made either by themselves or by their colleagues. Thus the focus of the interviews tended to be on disclosure of errors, and not on the information the project sought to achieve. In addition, it was felt that the level of disclosure posed ethical issues for both the JMOs and the Project Officer. After consultation with the Project Team and National Advisory Committee, it was agreed that focus group interviewing may provide a more appropriate data gathering strategy and reduce the level of medical error disclosure. Focus groups are recognised as a valuable tool for investigating sensitive issues which may be problematic to explore on a one-to-one basis (Gribich: 1999). Further, as Barbour (2005: 742) asserts, in relation to medical education research, they allow the 'voice' of participants to be heard. A focus group was trialled with JMOs at Royal Hobart Hospital and proved to be an effective strategy as valuable data was obtained but the level of disclosure was minimised. Thus, with the exception of four additional individual interviews undertaken with JMOs, focus group interviews replaced individual interviews for the remainder of the project.

A further difficulty that arose during the course of individual interviews and focus groups was that the responses of some JMOs seemed to be based on what they felt they *should* do in regard to the reporting and management of medical error, rather than what they *would* do. Although this seemed to only occur in isolated incidents, the Project Team agreed that an additional data collection strategy was needed to ensure that there was no ambiguity in the data collected.

After consultation with the Project Team and National Advisory Committee, two medical error scenarios were developed by senior clinicians and Directors of Clinical Training. These scenarios outlined situations where medical error occurred and questions were posed to JMOs about what they thought *most* PGY1/2s would do in the given situation, as opposed to how they themselves would respond.

In summary, three complementary data collection methods were utilised with JMOs at the three participating Tasmanian hospitals (Royal Hobart Hospital, Launceston General Hospital, North West Regional Hospital) in this phase of the project:

- Individual interviews;
- Focus group interviews;
- Scenario based surveys.

The JMOs who participated in the above were PGY1 or PGY2 doctors and included doctors who had undertaken their medical studies in Tasmania, on mainland Australia and overseas. Given the participating number of JMOs it was not appropriate to compare or contrast the responses of JMOs based on their place of training.

At the completion of the project the following numbers of JMOs had participated in the study:

- 7 JMOs undertook individual interviews with the Project Officer;
- 64 JMOs participated in focus group discussions;
- 43 JMOs completed scenario based surveys.

In total, 93 JMOs participated in the study. Some JMOs were involved in more than one collection method, but as all responses were de-identified, it was not possible to accurately quantify this. This represents over 50% of JMOs in Tasmania.

Although the agreed scope of the study was limited to surveying JMOs in Tasmania, the Project Team decided to collect a small amount of data from two interstate hospitals in order to provide a brief insight into whether Tasmanian JMO responses reflected responses from JMOs employed at interstate hospitals. Accordingly, JMOs in two public hospitals in Victoria were invited to complete the scenario based survey. Surveys were administered through the MEOs at these hospitals who distributed and returned completed surveys to the Project Officer. A total of 80 surveys were distributed with 14 completed surveys returned, giving a response rate of 17.5%. Due to the low response rate, the results from this survey cannot be meaningfully compared to the Tasmania data. However, they are included as Appendix 7. Similarly, the Project Team decided to extend the scope of the study to include a small number of Registrars. Early in the project it became apparent that Registrars played a significant role in the life of JMO participants and that the

relationship between the JMO and the registrar influenced the way in which JMO's approached the issue of medical error. The scenario based survey for JMOs was modified slightly (Appendix 5) to investigate how Registrars viewed JMO management of medical error. These surveys were distributed to a convenience sample of 6 Registrars and the results are shown in Appendix 6.

RESULTS

Quantitative data is presented in simple table form and where appropriate, percentages are provided. Much of the qualitative data from the three data collection strategies is presented in the words of the JMOs to give a clearer insight into the experiences of JMOs and medical error. As previously outlined where direct quotes from individual doctors have been used in the report, they have been chosen because they are typical of the responses of the majority of JMOs who participated in the study. This method of analysing and presenting data works to piece together emerging thematic patterns within the data, until a meaningful collective picture of the participants is captured (Aronson: 1994).

The scenario-based survey invited JMOs to list topics that they felt were important to include in a training program on medical error. While some JMOs offered specific suggestions in their replies, there was a poor overall response rate to this question and this issue was much more fully addressed and explored during the focus groups. Thus, their comments have been incorporated into the descriptive information in this chapter rather than in table form.

- **BEING A JMO**

Much of the initial part of the interview was spent discussing what it is like to be a junior doctor. The nature of the discussions led JMOs to question the causes of errors, which in turn led to descriptions and accounts of their working lives. JMOs described their working life as complex, difficult and often frustrating. However they also described these scenes with an air of resignation, as if they somehow believed that this was part of their enculturation that they had to accept.

The feelings of the JMOs were summed up by a participant who stated:

> *JMOs are often left to deal with and manage situations that are outside our scope of experience. Our workload is too heavy, and we literally do not have enough time in the shift to see everyone. I am often working 2 or 3 hours past my finish time – my Reg doesn't really care if I am still here at seven o'clock. There are misconceptions about timeframes, unrealistic expectations from the general public.*

Another recounted an experience from the early months of his internship:

> *I made an error that was missed by everyone from my team to pharmacy – we gave a patient a discharge med that he was allergic to. He came back to clinic and said 'why did I get this when I am allergic to it'. I then had to apologise to him… It's mainly JMOs who have to front up and apologise for things – even when we are not responsible.*

JMOs also discussed their relationships with members of the multidisciplinary team. One JMO stated 'I think that there is a certain level of intern bashing that occurs – where staff think it's OK to give attitude to the interns'. Another JMO talked about how the desire to be liked by members of the multidisciplinary team influenced his decision-making, stating 'I think I get bullied into making decisions that I know I shouldn't be because I want to be liked… mainly by nurses and Allied Health'.

One JMO believed that the reason the first postgraduate years were extremely difficult was because 'you are just expected to know – not just about error, about everything'. The majority of JMOs agreed with this opinion, saying that there is a certain degree of inevitability about making an error at some stage. JMOs considered the attempt to control every outcome futile, however they believed that education was a key ingredient in reducing errors and managing risk.

- **JMO UNDERSTANDINGS ABOUT MEDICAL ERROR**

One of the objectives of interviewing JMOs was to discover why JMOs thought it was important to include medical error within JMO orientation and education programs.

JMOs believed that errors were always going to occur, given what they described as 'the human factor' of medicine. Given this, the JMOs were emphatic about the need

for all staff to possess an understanding of medical error. Primarily, JMOs believed that it was important to use errors as learning experiences, both individually and for systems. In the words of one JMO, it was crucial to discuss and reflect upon errors 'so you can learn from them, for next time' whilst another suggested that it was important because 'we don't want to repeat mistakes in the future'.

JMOs also considered medical error from an organisational perspective, suggesting that it was crucial to get an understanding of the processes leading to error in order to try and implement change. JMOs believed that it was critical that organisations engage in processes that reflect on errors, because the effects of medical errors were so extensive.

One JMO stated:

> *Understanding errors is really about patient management. It needs to be addressed/understood because it affects everything from length of stay, to the health outcome of the patient…*

Whilst litigation has featured strongly in other areas of our inquiry, the safety and wellbeing of patients was a recurring feature in the interviews about why it is important to understand error, particularly within the context of organisational and system frameworks. JMOs were adamant that errors have to be 'deconstructed within an organisational framework' in order to reduce the potential of errors reoccurring, and ultimately to uphold patient safety.

Most JMO participants had minimal understandings of how to report and manage errors, however, they engaged in animated conversations about why it is so important to discuss and reflect upon errors.

As one JMO stated:

> *It's particularly important in medicine to understand about error, because of the serious consequences. Error is inevitable, however it's what you do from the error. To make the error once is OK, to make it twice makes you a fool.*

➢ DEFINITIONS OF MEDICAL ERROR

Focus groups usually commenced by asking participants to discuss their definitions of medical error. After the preliminary interviews it was evident that, before we could obtain an overview of current JMO understandings of medical error management, we first had to explicate their understandings of what constituted a medical error. There was no consensus between any of the project participants as to what constituted a medical error. One JMO summarised the opinions of all the participants by stating that 'medical error is a grey area'.

The majority of JMOs referred to the litigious aspect of error when asked for their definitions of medical error. Some JMOs felt that medical error was negligence while others said medical errors are primarily about litigation. One JMO said that a medical error could be anything that compromises patient care whilst another stated 'it just means any mistake which occurs in the medical field… it could be administrative or management or anything'.

JMOs were divided in their opinions as to how to define a medical error. One JMO stated that 'a mistake is only a medical error if it creates a problem with an adverse outcome'. Another JMO suggested that 'an error is an error regardless of whether it creates a problem'.

In one of the focus groups a JMO provided an example of a recent event from clinical practice. The JMO described a scenario where a patient had received postoperative intravenous fluid replacement over a weekend, when it was only intended for the evening after surgery. The weekend JMO did not review the fluid orders or the patient, and fluid continued until Monday. On Monday the patient was reviewed, and no harm had been done, but the fluid was ceased. This story led to an animated discussion by all the JMOs present of whether this particular incident could be deemed a medical error. Some JMOs suggested that it was an error, while others described it as 'only a bit of water', suggesting that it was unimportant and not significant enough to be classed as an error.

The broadest definition provided of medical error was offered by a JMO who suggested:

It {medical error} can mean anything. It can be where something that needed to be done was done differently – a deviation from the plan. Or it can also be an omission – not doing something that should have been done is as much an error.

- **JMO ORIENTATION & ONGOING EDUCATION**

The majority of JMOs could not remember if medical error had been addressed during orientation programs or ongoing education. Some JMOs said that they had not had any formal medical error education whilst others said that they did not remember ever being told about how to report an error, or how to complete an incident report.

Once prompted, however, most JMOs appeared to only remember one aspect of medical error that had been addressed, and this concerned the medico-legal aspects of medical error such as medical defence and litigation. They spoke of this aspect of medical error with mixed sentiment, with one JMO stating that the focus was on how not to get sued rather than patient safety. Others agreed with this statement, with one JMO suggesting that whilst avoiding litigation had been addressed by medico-legal representatives, even then, the focus was on how to protect the hospital, not the interns. JMOs agreed that whilst medical error was addressed, it was done so primarily from the perspective of medical error as a precursor to potential legal action.

Most JMOs could remember addressing what they labelled 'patient safety' during their final undergraduate years, but many stipulated that it was not from a medical error perspective.

All JMOs believed that medical error should be a part of orientation or ongoing JMO education. Most believed that it should be part of initial orientation. However, some JMOs felt that medical error should not be addressed during orientation week as there are many other more important topics and that medical error is best addressed during the term as it could get lost during the initial week.

➢ REPORTING AND MANAGEMENT OF MEDICAL ERROR

The scenario based surveys (Appendix 5) provided an insight into what the participants felt that *most* JMOs would do in a given situation involving medical error.

70 distributed surveys
43 returned surveys
Response rate = 61 %

SCENARIO 1

Not tell anyone	6 %
Talk to Peers	16 %
Talk to Registrar	91 %
Talk to Consultant	12 %
Tell the Patient	12 %
Write in the notes	32 %
Complete an Incident Report	12 %
Take no action	9 %
Other (please give details)	

SCENARIO 2

Not tell anyone	5 %
Talk to Peers	14 %
Talk to Registrar	91%
Talk to Consultant	16 %
Tell the Patient	12%
Write in the notes	30 %
Complete an Incident Report	7 %
Take no action	5 %
Other (please give details)	

As can be seen from the tables over 90% of JMOs involved in the project said that their Registrar would be their first contact if they made a medical error. For many this would be the only action they would take in the event of an error.

JMOs depicted Registrars as influential and significant, particularly in regard to how they would manage a medical error. JMOs also described their idea of a ‘good Registrar’. It was someone that they felt was approachable, someone who you could ask questions, and someone that you could speak to about an error.

The data shows that only a small percentage of JMOs indicated that they would complete an incident report in the event of a medical error. During focus groups JMOs reported that if they made an error that was 'minimal' (one which was resolved quickly) then most would not document an error; rather they would inform their Registrar.

Typical quotes from JMOs in the focus groups included:

> *If I made an error I would sort out the immediate things, and then talk to the 'boss' – my Reg… because a supportive Reg can make all the difference. You need support and good lines of communication.*
>
> *I have been really lucky in that I have always had a supportive 'Reg'. Knowing that you can always ask a question really helps…*
>
> *I have no support from my team. My Registrar will make mistakes and then I am left to pick up the pieces. I have been thinking about putting a complaint in, but haven't yet… So I think that having a supportive team can make all the difference.*

Approximately 15% of JMOs also indicated that discussing the incident with peers or the patient would also be an action taken by most JMOs in the event of a medical error. The only people who did not include telling the Registrar in their answer were those respondents who indicated that they would not tell anyone.

The medical error scenarios were proposed as a way of obtaining additional information, as well as testing some of the issues that had been raised by JMOs during focus groups. What these surveys added, in terms of the information gathered during the project, was the evidence that most JMOs consider that their reporting responsibilities lay primarily with their Registrars.

During the interviews and focus group discussions JMOs identified a number of obstacles in the reporting and management of medical error. There were 5 key themes that JMOs identified as obstacles in the reporting and management of

medical error: apprehension and uncertainty, no blame, feedback and follow-up, time constraints, and medical culture.

- **Theme 1: APPREHENSION & UNCERTAINTY**

Many JMOs stated that they would not report a medical error because they were unsure of what the consequences would be. Most JMOs described their uncertainty over how their particular hospitals responded to and managed a medical error, and most believed that a system specific response to medical error needs to be made explicit.

JMOs discussed, quite candidly, the apprehension regarding taking responsibility for a medical error. This seemed to be based around the fear of potential litigation, and their uncertainty about the process. One JMO suggested the permanency of Incident Reporting was frightening and that the lasting nature of error reporting was likely to put some people off.

Many JMOs talked about fear when discussing error reporting. One JMO discussed 'the fear of the unknown', whilst another described his thoughts as the 'fear factor element of error reporting'. When questioned further, this JMO stated:

> *It's frightening, not knowing what's going to happen if I report an error, and what it means for me. Am I going to get in trouble?*

JMOs also discussed the 'no blame' approach to medical error in depth, indicating a sceptical view of this approach. During discussions around this topic JMOs discussed the culture of medicine suggesting that part of the messages that had been passed onto them, was to 'keep quiet about mistakes'. JMOs were reluctant to acknowledge error for fear of consequence, which they stated was because they were afraid of what it meant for their careers to have to take responsibility.

JMOs talked in detail about fear of error reporting, with some suggesting that the fear was also associated with a lack of knowledge about the process and outcomes of reporting. These factors were identified as a significant barrier in the reporting and management of medical error.

Typical comments included:

> *'I don't know the process of what happens after the reporting of an error – I don't want to get someone into trouble'.*
>
> *We have a general lack of knowledge about the process of incident reporting. We don't know where the form goes, or what happens next.*

JMOs also discussed the documentation surrounding medical errors suggesting that they did not really understand when to fill out a report, or how the system managed the error once it had been documented.

JMOs agreed that they had a lack of education about the process and the outcome of medical error reporting, which contributed to feelings of fear and uncertainty in regard to JMO management of medical error.

- **Theme 2: LACK OF FAITH IN 'NO BLAME' APPROACH**

Although JMOs were aware of the 'no blame' approach to medical error, the majority did not believe that the concept of no blame existed in reality. Instead, they felt that the no blame approach that many organisations have in place is actually working to impede the management and reporting of medical errors by junior doctors.

This was consistently demonstrated throughout focus groups and interviews, with most JMOs admitting that fear of consequences of medical error was a significant factor when choosing to report medical error.

This was reflected in the following responses:

> Wh*en you make a blunder, people will always look for someone to blame*
>
> *People don't want to admit error - so how can it be managed effectively when no one wants to admit that it has happened.*
>
> *In theory no blame sounds good. In reality no one wants to take the blame, but people want you to take the blame. People look for someone to blame.*

The culture of medicine can be an obstacle – although you learn [as an undergrad] all about open disclosure and no blame, I don't think it really exists in practice. Error implies mistake, and no one wants to admit to that. People talk about patient safety, but not about error. So I don't think 'no blame' is really happening here...

I don't have any faith in 'no blame' policies – I think when it came down to it, you would be alone

Most participants indicated that the fear of being blamed, and subsequently disciplined, was very pervasive. Despite what they felt was a push by organisations to adopt this approach, they did not believe that this existed within the philosophy of medicine.

- **Theme 3: FEEDBACK AND FOLLOW-UP**

A common theme throughout the interviews was that for JMOs to more effectively manage error, they needed information about what happened after the error was made. They indicated that there is a lack of feedback and follow-up regarding medical errors, which discouraged them from initiating medical error reporting. Appropriate follow-up, from the participants' perspective, would include notification about how the error was addressed from a systems perspective and feedback to the doctor who made the error. The majority of JMOs agreed that a major obstacle in the reporting of error was that there was no follow-up, and a lack of reflection on errors. As a result, most JMOs indicated that they would not initiate error reporting.

This was summed up by the following comments by JMOs:

Lack of feedback is like turning in a piece of work, and not getting any assessment…

I want to know if I have made a mistake, to address it and to improve - to continuously improve… but it doesn't happen.

The Systems approach to error – i.e. the no blame system – has tried to reduce blame, but has actually prevented any feedback getting to the individual

There doesn't really seem to be a point in writing an incident form because you never get any feedback…

It's important to reflect on errors in order to prevent them happening again and again, and to learn from them. Some of the errors that I have been involved in and witness to, resulting in death, have not been explored at all. As a result, nothing has been learnt from them. Someone has died and nothing has been learnt from it.

- **Theme 4: TIME CONSTRAINTS**

Most JMOs considered that they were too busy to report a medical error, largely because the amount of documentation involved made the process too difficult. Many JMOs talked about completing incident reports, and the majority agreed that they considered incident reporting a bureaucratic movement and something that they generally regarded as an activity that took a lot of time, was a low priority in their working lives, produced no outcomes and resulted in no change.

They suggested that in terms of completing the various tasks they had to attend to each day, incident reporting was 'not worth the effort' . One JMO stated:

When an error happens, it depends on the serious risk or the outcome as to whether you would report it, otherwise its just extra paperwork'.

Many of the JMOs did not consider that incident reports were for 'small errors' such as 'extra doses' or 'things that have been missed'. They considered that incident reports should just be for the 'big errors' such as mistakes that had 'adverse or long-term outcomes'.

A JMO summed up the feelings in a focus group, saying:

I don't like to fill in an incident report –it seems a lot of effort, for no outcome.

There was a strong sentiment within all focus groups that incident reporting was part of a bureaucratic process that was not useful in creating changes. The majority of JMOs said that they would be happy to complete incident reports if they felt that it

would lead to a system change. However, most stated that they felt that completing these reports was a 'waste of time' and they would prefer to document in the notes than complete an incident report.

Most JMOs believed that reporting an error was too taxing and time consuming, which was underpinned by the strong belief that reporting the error does not bring about any change. Many JMOs indicated that if they thought reporting an error was managed in a useful way they would make a more concerted effort to complete the documentation associated with medical errors.

- **Theme 5: MEDICAL CULTURE**

JMOs described the cultural expectations within medicine as being an obstacle to reporting and managing error for junior doctors. Participants described this in several ways including the difficulties in reporting errors made by colleagues, and the personal and cultural complexities in admitting personal failure. The main points raised related to the hierarchical nature of medicine (reporting errors made by senior colleagues), the cultural and professional differences between multidisciplinary team members, communication between teams, and relations within their peer group. For example:

> *JMOs are less likely to report medical errors than nurses. JMOs don't want to be seen to be making a mistake – I mean, nobody does- but it's easier in nursing because there is generally one team leader and then everyone is equal. It's different with doctors.*

> *There are systems obstacles – such as the different groups of professionals {i.e. Docs, nurses and allied health} who find it difficult to find a common ground, and have different expectations and perspectives.*

> *There is a culture of no disclosure. Admitting that you made a mistake is like admitting personal failure. Although mistakes are inevitable, there is definitely a culture that is disapproving.*

JMOs felt that in addition to their reluctance to admit personal failure, they also felt a desire to protect each other. They also referred to the problem of medical error reporting being seen as potentially hostile or vengeful. One JMO suggested that reporting others mistakes can be tricky as it could potentially create a hostile situation. Another JMO stated that ‘incident reporting can be like revenge… you don’t want it to be like that’.

Most JMOs agreed with the often repeated statement during the focus groups that nurses ‘love incident reports’. They believed that it was easier for nurses to report medical error because they were more supported, and actually encouraged to clearly document errors. Some JMOs suggested that this was in contrast to doctors, who were often encouraged not to report, sometimes due to fear of litigation, sometimes because they did not want to get a colleague into trouble.

DISCUSSION

Several influential studies published in the last decade recommended the importance of capturing qualitative data concerned with medical error. Cook et al (2004) believes that in order to transform future behaviours, it is essential to understand current behaviour.

This project has demonstrated the need to undertake further investigation into the area of medical error and junior doctors. JMOs presented a vivid and often conflicting portrayal of medical error. Whilst MEOs and DCTs indicated that medical error was currently being addressed within JMO education and orientation programs, JMOs’ understandings of medical error did not reflect this.

JMOs could address the theoretical aspects of error, but most JMOs were unaware or had little knowledge of how error was being addressed within their own organisations, or the process that they had to adhere to if they made an error themselves. Schenkel et al (2003) support this view, suggesting that although junior medical staff are aware that medical errors take place in hospitals, they appear to be only minimally aware of the various methods of system-based approaches to patient safety. JMOs conducted discussions around the theoretical aspects of medical error, such as systems approaches to error and models of error, except most could not

articulate how their particular organisation would respond to error. Most JMOs were extremely unclear about error management, and what the consequences of errors were.

Kohn et al (2000) believe that the most significant obstruction to improving patient safety is the lack of awareness of errors that occur on a daily basis within healthcare organisations. JMOs discussed this, referring to the fact that staff never heard anything about errors that had occurred. This said they did not want to know who had made the error, rather the factors leading to the error and the outcome.

JMOs demonstrated reluctance to report medical error, and an uncertainty about the processes regarding such reporting. This seemed to be underpinned by genuine lack of knowledge about the actual processes, as well as cultural expectations that they believed were disapproving of reporting errors. Kohn et al (2000) recommend that organisations need to implement a medical error management in which there are no reprisals, and where voluntary reporting of error is encouraged. Leape (1999) suggests that whilst there are a number of reasons given for non-reporting, he believes that there are really only two: fear and a lack of belief that it results in improvement. Leape (2001) also adds that most hospital personnel believe that reporting is used for judgement. JMOs in this study echoed Leape's sentiments, consistently referring to both fear and a lack of faith that reporting led to change.

JMOs regarded error management as a highly bureaucratic process. This is supported by a recent study (Waring: 2005), which explored medical cultural attitudes toward incident reporting. Doctors involved in this project indicated complete disrespect for incident reporting, labelling the process as 'red tape', 'admin' and 'management'.

JMO participants in this project named the lack of feedback as one of the most significant obstacles in the management of error. Kohn et al (2000) reiterate this opinion, advocating for the development of feedback mechanisms which encourage learning from error. JMOs described the lack of feedback as working to discourage them from reporting error, as well as undermining their belief in 'the system'.

Kohn et al (2004) believe that the system management of error has to include the development of ‘non-punitive’ procedures for managing error. JMOs discussed this quite a lot, however this was mixed with strong feelings that the organisational approach to no blame actually worked to prevent feedback and analysis of error in a way that was accessible to the individual who had made the error. Whilst MEOs and DCTs discussed the importance of fostering a no-blame environment, JMOs believed that this actually diffused responsibility and prevented feedback, and subsequent learning from medical errors. This is not a sentiment that is reflected within medical literature. Most authors report that fostering and promoting a culture where doctors are not individually sought out, works to ensure management of error can be managed more effectively and successfully.

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

This project illustrates that the philosophical, cultural and moral issues that are raised by medical error need to be articulated in an explicit way. Halbach et al (2005) also supports the notion that patient safety and medical error education has to be conducted in an explicit fashion. Whilst educators indicated that medical error was being addressed, they also indicated that it was largely a topic that was explored implicitly. However the results from this project would suggest that this approach is not effective with junior doctors. Whilst the national scoping study suggested that medical error is incorporated into the majority of most JMO orientation and education programs, it was consistently suggested throughout the surveys that medical error was often a topic that was not addressed directly. Rather it was depicted as a topic that underpinned JMO education. Respondents themselves depicted medical error as 'implicit', and as 'a flavour' or 'ingredient' in broader JMO education. In contrast, the JMOs involved in this project ultimately suggested that they needed medical error education to be explicit.

JMOs also believed that education concerned with medical error had to include explicit guidelines detailing the processes involved with the system management of an error, and the procedure for the individual response to, and management of, an error.

Both JMOs and MEOs involved in this project believe that education programs need to try to create a culture of learning from errors. JMOs in this project considered that the current 'no blame' approach that many organisations have in place is not effective, and is actually working to impede learning opportunities for junior doctors. JMOs believed that the no blame approach was responsible for the lack of feedback and follow-up that they, and all doctors, received about medical errors. To more effectively manage error, JMOs all agreed that they needed information about what happened after the error was made. They considered that this was a critical change that had to occur in how organisations managed and addressed errors.

RECOMMENDATIONS FOR A TRAINING PROGRAM IN MEDICAL ERROR

Based on the findings of this study, it is recommended that a training program on medical error for JMOs should provide:

1. An explicit approach to the topic of medical error.

It was clear from the study that while issues around medical error were addressed in JMO orientation programs and ongoing education, that this was implicit rather than explicit, resulting in many JMOs having difficulty remembering and/or understanding the topic.

2. A clear definition of what is meant by the term 'medical error'.

There were a range of interpretations of the term 'medical error' by MEOs/DCTs and JMOs. For JMOs to discuss the topic meaningfully, there needs to be a shared understanding of the term.

3. Improved education about the processes and consequences of completing an incident form.

The completion of incident forms following a medical error (or 'near miss') is often a requirement by hospitals and is also considered by MEOs/DCTs to be an important topic to be included in a training program in medical error. However, completion of incident forms had low priority amongst JMOs in this study. If a hospital requires incident forms to be completed, their training program for JMOs should include education about why the form needs to be completed, how to complete the form, what happens to the form once it is completed, the medico-legal implications, and what change results within the system from the completion of an incident form.

4. A concisely written information sheet detailing the process/expectations of error management.

A common theme was the need for a form/pamphlet/information sheet which detailed the process of how the organisation manages medical error

(from the error/incident through to disclosure and completion of documentation of the error). JMOs want an understanding of hospital specific approaches to error, rather than just general system approaches to the management of medical error.

5. Improved training in the prevention, recognition and reporting of medical error.

Although there were different areas of emphasis for training in medical error between MEOs/DCTs and JMOs, there was agreement that training in medical error was an essential component of JMO orientation and ongoing education. MEOs/DCTs highlighted the importance of training in documentation (eg drug charts, and communication)

6. Information about the theoretical aspects of medical error.

This area was only highlighted as important by MEO/DCTs. Thus, it is suggested that a training program needs to ensure that theoretical aspects of medical error are delivered in a way that has practical relevance for JMOs.

7. An opportunity for JMOs to discuss, debate and share their experiences of and attitudes to medical error.

This training should be done in a 'safe' environment where there is a culture of learning from errors. It should include opportunities for JMOs to discuss their fears about reporting medical error. As most JMOs have little faith in the current 'no blame' approach to medical error, any discussion about this should be supported by relevant research which highlights the rationale behind this approach and the positive effects of reporting. JMOs in this study clearly stated that they required individual feedback following a medical error or submission of an incident report. Although this is in contrast to the trend in medical error reporting, their views should be acknowledged and the issue of feedback further explored by medical educators and researchers.

8. Ongoing education in medical error for Registrars so that they can appropriately support JMOs.

As over 90% of JMOs said that they would discuss medical error first with their Registrar, it is essential that a training program for JMOs is complemented by parallel training for Registrars to enable them to gain the necessary skills and knowledge to appropriately support JMOs. This could form part of the MTRP Registrar Development Program currently being piloted by PMCV.

The above recommendations and guidelines for a training program for JMOs in medical error are based on the collective data gathered in this study from the national survey of MEOs and DCTs, and individual/focus group interviews and surveys with JMOs across Tasmania. Some of the recommendations were explicitly stated by participants, others were inferred from their comments.

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APPENDIX 1

Medical Education Officer/Director of Clinical Training Survey

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TERMINOLOGY

A literature review, undertaken during the preliminary phase of this project, has revealed a number of terms that are frequently used to describe medical error. Examples from the literature indicate that the topic of 'medical error' is also communicated as 'adverse events', 'medical mishaps', 'mistakes', 'accidents', and 'near misses'. The terms 'patient safety' and 'quality assurance' are also terms used within the context of medical error.

In this project 'medical error' will incorporate all of the terms that are commonly used to describe medical error. As this project is not concerned with the classification of different types of error, the term 'medical error' can be used without the need to further differentiate what this term means to individual organisations.

Medical error, for the purpose of this project, is defined as "the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim" (Kohn et al, 1999).

APPENDIX 1

Survey Medical Education Officer/Director of Clinical Training Survey

QUESTIONS

1. Do you include the following topics, in regard to medical error, in your orientation/ongoing education program for Junior Medical Officers?

	Yes	No
o Prevention of medical error		
o Recognition of medical error		
o Reporting of medical error		
o Management of medical error		
o Other		
o If ‘other’, please explain –		

2. How is the medical error component delivered?

3. Which of the following groups are involved in the delivery of a Medical Error component?

   - o Quality and Assurance
   - o Pharmacy
   - o External agencies (eg AMA)
   - o Medico-legal
   - o Other
   - o If other, please explain -

4. How much time is allocated to a Medical Error component per year?
   - o 15 minutes
   - o 30 minutes
   - o 1 hour
   - o 2 hours
   - o Other
   - o If other, please explain –
   - o

5. Are there any resources on medical error available to JMOs at your organisation? eg JMO handbook, Hospital intranet

6. From your experience, what specific areas of Medical Error are important to include in a JMO education program?

** Please include any additional information regarding medical error and junior medical officers at your organisation.

For any further information please contact:
Danielle Williams, Project Officer
Postgraduate Medical Institute of Tasmania Inc.
0417 177 310 dwillia2@utas.edu.au

APPENDIX 2

INFORMATION SHEET
Medical Error and Junior Medical Officers

My name is Danielle Williams and I am a Project Officer for the Postgraduate Medical Institute of Tasmania (PMIT). I am currently conducting a project investigating Medical Error and JMOs. The project aims to develop recommendations about medical error for the education of JMOs, and produce a framework for a training program in medical error management, appropriate for use during JMO orientation programs or education sessions.

As part of the project, I will be conducting interviews with JMOs at three sites in Tasmania. I would like to talk to you about information regarding medical error that is available during PGY1/2/3 orientation/protected teaching time, what JMOs perceive to be their educational needs regarding the management and reporting of medical error, and what JMOs consider to be the impediments to the successful reporting and management of medical error.

I will be asking the following types of questions:

- Has medical error been addressed in your orientation/education program?
- Why is it important to have an understanding about medical error?
- What information do you JMOs need about the reporting & management of error?
- What are the obstacles to the effective reporting of medical error?
- What are the obstacles in the management of medical error?

Interviews will be informal, and will take place within each hospital. It is expected that interviews will take between 10 - 30 minutes and will be recorded using on audiotape (with your permission). All information collected during the course of the project will be anonymous and you will be de-identified within all data.

Information collected during the project will be used to generate several documents for national distribution. Reports will be made available to all participating hospitals at the cessation of the project.

For more information about any aspect of this project please contact me:

Danielle Williams
0417 177 310
dwillia2@utas.edu.au

I would like to participate in this project **YES** **NO**

Name: **Pager:**

Contact phone number: **Email:**

APPENDIX 3

JMO Scenario Questionnaire

JMO QUESTIONAIRE
Please answer the following questions, based on two medical error scenarios. Please answer how you think most JMOs would respond, rather than what YOU would do in the given situations.

SCENARIO 1
Mr A is a 65-year-old man who was admitted for an AP resection for carcinoma of the bowel. His operation went well but his post-operative course was complicated by diarrhoea that was difficult to control. Five days post-op Mr A suffers a cardiac arrest, from which he is successfully resuscitated. Blood taken immediately post arrest shows a K of 2.6 and treatment with potassium supplements is started. Mr A makes a full recovery.

On checking the notes, it is seen that the Mr A's K was 2.9 the day previously. Unfortunately, the JMO responsible for the patient mistakenly recorded his K as 3.5 (normal), which was the Mr A's K on admission. As a result, no potassium supplementation was ordered at that time.

What do you think most JMOs would do in this situation?

Not tell anyone
Talk to Peers
Talk to Registrar
Talk to Consultant
Tell the Patient
Write in the notes
Complete an Incident Report
Take no action
Other (please give details) ………………………………………

SCENARIO 2
Mrs B is a 70-year-old female who is admitted because of community acquired pneumonia. She is noted to be in controlled atrial fibrillation on arrival and a drug history reveals that she takes daily digoxin. She is unsure of the dose and the JMO admitting her prescribes 250mcg daily. He makes a note to check the patient's digoxin levels the next day, but this is overlooked on handover.

Five days later Mrs B is complaining of nausea and dizziness. An ECG suggests digoxin toxicity and blood tests reveal chronic renal impairment (overlooked on admission) and a toxic level of digoxin. The digoxin is stopped and Mrs B makes an uneventful recovery.

What do you think most JMOs would do in this situation?

Not tell anyone
Talk to Peers
Talk to Registrar
Talk to Consultant
Tell the Patient
Write in the notes
Complete an Incident Report
Take no action
Other (please give details) ………………………………………

What education/information do you think JMOs need about medical error?

APPENDIX 4

Registrar Scenario Questionnaire

JMOs have identified Registrars as a vital component in their approach to and management of medical error. To help us plan appropriate educational strategies for JMOs we would be grateful if you would answer the following scenario based questions.

SCENARIO 1
Mr A is a 65-year-old man who was admitted for an AP resection for carcinoma of the bowel. His operation went well but his post-operative course was complicated by diarrhoea that was difficult to control. Five days post-op Mr A suffers a cardiac arrest, from which he is successfully resuscitated. Blood taken immediately post arrest shows a K of 2.6 and treatment with potassium supplements is started. Mr A makes a full recovery.

On checking the notes, it is seen that the Mr A's K was 2.9 the day previously. Unfortunately, the JMO responsible for the patient mistakenly recorded his K as 3.5 (normal), which was the Mr A's K on admission. As a result, no potassium supplementation was ordered at that time.

What do you think most JMOs would do in this situation?

Not tell anyone
Talk to Peers
Talk to Registrar
Talk to Consultant
Tell the Patient
Write in the notes
Complete an Incident Report
Take no action
Other (please give details) ……………………………………….

SCENARIO 2
Mrs B is a 70-year-old female who is admitted because of community acquired pneumonia. She is noted to be in controlled atrial fibrillation on arrival and a drug history reveals that she takes daily digoxin. She is unsure of the dose and the JMO admitting her prescribes 250mcg daily. He makes a note to check the patient's digoxin levels the next day, but this is overlooked on handover.

Five days later Mrs B is complaining of nausea and dizziness. An ECG suggests digoxin toxicity and blood tests reveal chronic renal impairment (overlooked on admission) and a toxic level of digoxin. The digoxin is stopped and Mrs B makes an uneventful recovery.

What do you think most JMOs would do in this situation?

Not tell anyone
Talk to Peers
Talk to Registrar
Talk to Consultant
Tell the Patient
Write in the notes
Complete an Incident Report
Take no action
Other (please give details) ……………………………………….

What education/information do you think JMOs need about medical error?

Other comments –

APPENDIX 5

INTERSTATE JMO DATA

80 distributed surveys
14 returned surveys
Response rate = 17.5 %

SCENARIO 1

	Response	%
	Not tell anyone	7 %
	Talk to Peers	29 %
	Talk to Registrar	71 %
	Talk to Consultant	
	Tell the Patient	
	Write in the notes	
	Complete an Incident Report	
	Take no action	
	Other (please give details)	

SCENARIO 2

	Response	%
	Not tell anyone	
	Talk to Peers	43 %
	Talk to Registrar	64 %
	Talk to Consultant	
	Tell the Patient	
	Write in the notes	7 %
	Complete an Incident Report	
	Take no action	
	Other (please give details).	

APPENDIX 6

TASMANIAN REGISTRAR DATA

SCENARIO 1

	Response	%
	Not tell anyone	50 %
	Talk to Peers	17 %
	Talk to Registrar	100 %
	Talk to Consultant	
	Tell the Patient	
	Write in the notes	17 %
	Complete an Incident Report	
	Take no action	
	Other (please give details)	

SCENARIO 2

	Response	%
	Not tell anyone	67%
	Talk to Peers	
	Talk to Registrar	83 %
	Talk to Consultant	
	Tell the Patient	
	Write in the notes	17 %
	Complete an Incident Report	17 %
	Take no action	
	Other (please give details)	