

Aged-care nurses in rural Tasmanian clinical settings more likely to think hypothetical medication error would be reported and disclosed compared to hospital and community nurses

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Abstract

Objective: This study aims to determine the likelihood that rural nurses perceive a hypothetical medication error would be reported in their workplace.

Design: This employs cross-sectional survey using hypothetical error scenario with varying levels of harm.

Setting: Clinical settings in rural Tasmania.

Participants: Participants were 116 eligible surveys received from registered and enrolled nurses.

Main outcome measures: Frequency of responses indicating the likelihood that severe, moderate and near miss (no harm) scenario would 'always' be reported or disclosed.

Results: Eighty per cent of nurses viewed a severe error would 'always' be reported, 64.8% a moderate error and 45.7% a near-miss error. In regards to disclosure, 54.7% felt this was 'always' likely to occur for a severe error, 44.8% for a moderate error and 26.4% for a near miss. Across all levels of severity, aged-care nurses were more likely than nurses in other settings to view error to 'always' be reported (ranging from 72–96%, $P = 0.010$ to 0.042 ,) and disclosed (68–88%, $P = 0.000$). Those in a management role were more likely to view error to 'always' be disclosed compared to those in a clinical role (50–77.3%, $P = 0.008$ – 0.024).

Conclusion: Further research in rural clinical settings is needed to improve the understanding of error management and disclosure.

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Introduction

The annual cost of medication error to the Australian hospital system is estimated at \$1.2 billion.¹ While safe systems required by accreditation standards for hospitals and aged care include medication management and error disclosure,^{2,3} very little is known specifically about error management in rural clinical settings.

The Australian Commission for Safety and Quality in Health Care² defines medication error as 'any preventable event that might cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient or consumer'. Near-miss error is defined as 'an incident that did not cause harm, but had the potential to do so'.²

Open disclosure is defined as 'an open discussion with a patient about incident(s) that resulted in harm to that patient while receiving health care'.² Where an incident results in no harm to a patient disclosure might be appropriate dependent upon context, circumstances and potential ramifications. In circumstances where no or minimal harm results from an error that reaches the patient the term 'no harm' might be used to differentiate from near-miss incidents where an error is intercepted before reaching the patient.²

While it is considered that less severe (moderate) and near-miss (no harm) errors offer an opportunity to learn from error and prevent future similar events, such error is often underreported.⁴ Others argue that in addition to reporting error (which measures a lack of safety, not its presence) focus should be directed to understanding what leads to good outcomes.⁵

Non-disclosure of error in health care has been linked to fear of litigation, difficulty in admitting harm has occurred and lack of training in the process.⁶ Research

What is already known on this subject:

- Medication error is an issue in health care environments including acute hospital, aged-care and community settings with the annual cost of medication-related hospital admissions estimated to be \$1.2 billion.
- While studies have been undertaken in relation to error reporting and disclosure, they usually relate to hospital settings with little focus on community, aged care or the rural clinical environment.
- Research relating to nurses and disclosure is particularly limited.
- Error offers an opportunity to learn for future prevention, yet it is often underreported. Many opportunities for learning might go undetected and improving reporting might lead to improved learning and therefore improve prevention.

What this study adds:

- Survey across a variety of rural workplace clinical settings shows nurses in aged care more likely to think error to be reported or acknowledged compared to those working in hospital/multi-purpose or community settings.
- The likelihood that nurses thought an error would be reported or disclosed decreased as severity of harm also decreased with error of the same level of harm more likely to be reported than disclosed.
- Nurses in a management role were more likely to indicate they thought an error would be acknowledged compared to nurses in a clinical role.
- Identifies the need for more research in rural clinical and aged-care settings which might lead to improved understanding of error management and disclosure.

relating to disclosure has mostly considered the physician perspective, and although many such studies note support for this notion what occurs in practice does not always reflect this.⁷ In contrast, few studies exist considering the involvement of nurses in disclosure.^{8,9}

Methods

Invitations for registered (RN) and enrolled nurses (EN) to participate in a secure online cross-sectional survey were distributed through post and emails to rural worksites in Tasmania during March–April 2012. Reminders were also sent to all identified work sites. The emails were distributed by the two Tasmanian nursing unions to their members with the unions being provided with a list of relevant work sites and postcodes enabling them to contact their members directly.

Work sites were identified through publicly available information from several web-based sources including the Department of Health and Human Services, Aged Care Accreditation Agency, GP Tasmania database and My Hospitals website. Locality was determined by the Australian Statistical Geographical Classification – Rural Area system with work sites from outer regional (ASGC-RA 3), remote (ASGC-RA 4) or very remote (ASGC-RA 5) areas included.

The survey consisted of a hypothetical medication prescribing error scenario, whereby a patient/client suffering a urinary tract infection was prescribed a medication despite having a known documented allergy. Three different levels of harm were described – severe, moderate and near miss (no harm).

The scenario was adapted from a study undertaken in the United States¹⁰ with minor modifications for the Australian context. These consisted of use of only the generic medication name (trimethoprim) and additional clarification that the near miss (no harm) scenario resulted in no allergy symptoms being evident.

The severe outcome described an acute allergic reaction to the medication which, following treatment, left the patient remaining unresponsive 12 months later. In the moderate outcome, the patient had some breathing difficulty and following treatment recovered with no ongoing harm. The near-miss (no harm) scenario described the allergy being noticed after two days of administering the medication and another medication prescribed. The patient did not suffer any reaction or harm.

Participants were asked how likely it was that each outcome would be formally reported in their work site and how likely it would be for someone in their work site to acknowledge the error had occurred to the patient/client or their family.¹⁰ Options for response in each case were ‘always’, ‘usually’, ‘sometimes’, ‘rarely’ or ‘never’.

Demographic data collected related to registration level, workplace setting, work role, experience in current role and experience in nursing, employment sector (public/non-government) and facility bed numbers. Postcode data were used for locality but not reported to ensure individuals and work sites could not be identified from results.

Responses to each scenario were reduced to two data categories of ‘always’ and remaining responses

(‘usually’, ‘sometimes’, ‘rarely’ and ‘never’) grouped together as ‘not always’. Chi-squared analysis was conducted and Fisher’s Exact Test was applied where cell counts less than five were present.

The 116 eligible surveys included in the analysis represented approximately 6.8% of the nurse registrations across AGSC 3–5 in Tasmania in 2012.¹¹ Of these, 7.8% ($n = 9$) were from enrolled nurses who made up 22% of nurses working in ASGC-RA 3–5 areas in Tasmania,¹¹ suggesting they might be underrepresented in this study.

Ethical issues

This research was approved by the Tasmanian Human Research Ethics Committee. Ethical issues considered in

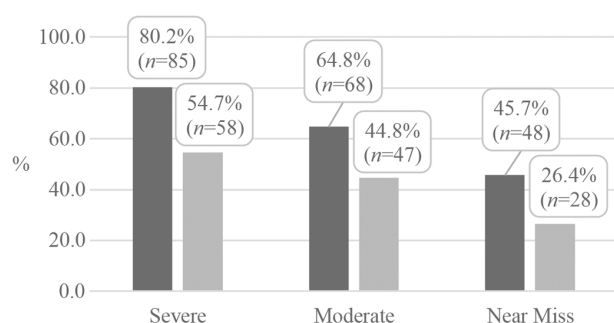


FIGURE 1: Percentage of respondents indicating they thought error would ‘always’ be formally reported or acknowledged to patient/client or their family. (■) Always formally report error; (□) Always acknowledge error to patient/client of their family.

TABLE 1: Percentage of respondents in different workplace settings and overall sample indicating they thought the error would ‘Always’ be formally reported

	Hospital/Multi-purpose	Community	Aged care	% Overall
Always formally report error				
Severe error ($n = 106$, $P = 0.061^*$, Fisher’s Exact = 0.042)	77.2% ($n = 44$)	70.8% ($n = 17$)	96.0% ($n = 24$)	80.2% ($n = 85$)
moderate error ($n = 105$, $P = 0.007$)	62.5% ($n = 35$)	45.8% ($n = 11$)	88.0% ($n = 22$)	64.8% ($n = 68$)
near miss error ($n = 105$, $P = 0.010$)	37.5% ($n = 21$)	37.5% ($n = 9$)	72.0% ($n = 18$)	45.7% ($n = 48$)

*Two cells (33.3%) have expected count less than five. The minimum expected count is 4.75.

TABLE 2: Percentage of respondents in different workplace settings and overall sample indicating they thought the error would ‘always’ be acknowledged by someone in their workplace to the patient/client or their family

	Hospital/Multi-purpose	Community	Aged care	% Overall
Always acknowledge error to patient/client or family				
Severe error ($n = 106$, $P = 0.000$)	49.1% ($n = 28$)	33.3% ($n = 8$)	88.0% ($n = 22$)	54.7% ($n = 58$)
Moderate error ($n = 105$, $P = 0.000$)	37.5% ($n = 21$)	20.8% ($n = 5$)	84.0% ($n = 21$)	44.8% ($n = 47$)
Near-miss error ($n = 106$, $P = 0.000$)	14.0% ($n = 8$)	12.5% ($n = 3$)	68.0% ($n = 17$)	26.4% ($n = 28$)

this study included use of a survey to ensure anonymity of respondents and their worksite and the use of a hypothetical scenario. Nurses were asked what they thought might happen in relation to the hypothetical situation in their workplace rather than asking about actual error reporting and disclosure practices. This approach ensured respondents were not placed in any conflict with their legal and professional obligations in relation to these matters.

Results

Views that the severe error would ‘always’ be reported were highest at 80.0% and views of the near-miss error ‘always’ being disclosed were the lowest at 26.4% (Fig. 1). As severity decreased so did the likelihood that the error was thought to be reported or disclosed. The opinion that an error scenario would ‘always’ be reported was higher than that of the same severity of harm being disclosed.

Nurses in aged-care settings were more likely to indicate the error both formally reported (Table 1) and acknowledged to the patient/family (Table 2). This was the case across all levels of harm.

Those indicating they worked in a management role were more likely to think that acknowledgement would occur compared to those in a clinical role (Table 3), indicating differences in relation to workplace role. However, when comparing manager and clinician responses in relation to error reporting, no such difference was found nor were there from comparing report-

TABLE 3: Percentage of respondents in different workplace roles and overall sample indicating they thought the error would 'always' be acknowledged by someone in their workplace to the patient/client or their family

Always acknowledge error to patient/client or family	Clinical role	Management role	% Overall
Severe ($n = 114$, $P = 0.024^*$, $\Phi = -0.233$)	47.8% ($n = 44$)	77.3% ($n = 17$)	53.5% ($n = 61$)
Moderate error ($n = 112$, $P = 0.019^*$, $\Phi = -0.243$)	37.8% ($n = 34$)	68.2% ($n = 15$)	43.8% ($n = 49$)
Near-miss error ($n = 114$, $P = 0.008^*$, $\Phi = -0.276$)	19.6% ($n = 18$)	50.0% ($n = 11$)	25.4% ($n = 29$)

*Computed only for a 2×2 table.

ing and disclosure responses other demographic data (including RN and EN responses).

Discussion

The number of nurses in this present study that perceived error as unreported and unacknowledged is concerning. Other studies also suggest nurses do not believe error is always reported. An Israeli study showed that less than 16.9% of nurses indicated they felt all errors were reported.

However, results of a recent direct observational study of nurses administering medication in two Australian hospitals found that only 1.2 per 1000 incidents were formally reported and of the 218.9 per 1000 prescribing errors only 13 per 1000 were reported.¹² This suggests the responses in this present study might reflect what is actually happening in practice.

It has been identified that nurses support both physicians and patients through error disclosure but that they are not properly prepared to undertake the disclosure themselves if indeed they are even included in the process.⁸ Barriers to disclosure include lack of training, hierarchical practice, fear, blame and punitive action.⁸ In relation to error disclosure and patients in the rural context, it has also been noted that there might be unique elements such as resources, delays, travel distance and the situation in small rural towns where patients are treated and services are managed by people personally known to the patient.¹³ Further research is therefore warranted with respect to specific issues relating to error disclosure in rural clinical settings.

Work role

Differences in views of reporting and disclosing error among senior hospital staff using scenarios across different levels of harm have been noted in a previous study undertaken in the United States.¹⁰ It has also been noted that there are gaps between what managers view they would report in relation to their actions compared to what is actually happening in practice.¹⁴ While this might explain the differences noted between managers

and clinicians, it is also possible that if clinicians are not involved in disclosure they will not be aware when an error is formally acknowledged.

Organisational variables (such as trying to meet the expectations of others) have been noted as elements that can lead to unsafe work practices among nurses in rural Australia with recommendations for training programs, systems redesign and the injection of resources as possible solutions.¹⁵ While increase in cost is likely, this could arguably be offset by savings through improved productivity and better patient outcomes.¹⁵ It has been almost eight years since this study was published yet there has not been any national effort to address safety in rural practice.

Workplace setting

Of particular interest in this present study is the higher frequency of responses among aged-care nurses indicating they thought error would be reported or acknowledged. Little research exists that explains this result. Although one study has identified that aged-care nurses are more likely to disclose to the family of a resident with decreased cognition, little is known of error disclosure to nursing home residents in the aged-care environment.⁹

Dimensions of safety culture have also been linked to the frequency of event reporting.^{16,17} While little is specifically known in relation to error reporting in rural settings, results in one study suggest staff in long-term care settings have a more positive safety culture compared to acute hospitals.¹⁸ This might assist in determining the reasons why aged-care nurses are more likely to view error to be both reported and disclosed. More research in this area is therefore needed.

Others suggest there is a high level of stress in the community sector coinciding with high level of risk due to emotional demands and the pressure of work.¹⁹ This might be why nurses in community workplaces were less likely to view error to be disclosed compared to aged-care nurses. Further research is therefore needed in order to determine the situation for the Australian context.

Where a group performs more positively compared to another in an area of safety, it is regarded as 'positive deviance'.⁵ When such positive deviants are identified they should be studied, hypotheses developed and tested and work undertaken with stakeholders in partnership to disseminate evidence.⁵ It might be time to look to aged care in order to identify the factors that assist nurses in how they manage error.

Nurses have to balance duty to the patient with duty to team, organisation and their personal interests.⁸ It might be that nurses in aged care manage this balance differently. Maintaining accountability at the organisational level has been identified as a factor that enhances disclosure.⁸ It might also be possible that aged-care facilities manage accountability at an organisational level differently to other settings. With different approaches to accreditation in hospital and aged care existing in Australia,²⁰ it might be worthwhile exploring whether elements of each enhance or hinder error reporting and disclosure.

Limitations and conclusion

There are limitations to this research which might have impacted upon the results. These included asking nurses what they think might happen with regards to a hypothetical scenario, the use of a survey where social acceptability might influence responses and subsequent self-selection of participants. The study is also limited to the Tasmanian context, and the response rate of 6.8% of the study population was low.

Keeping the limitations of this present study in mind, it is evident that further research is needed in order to understand the different views of error reporting and disclosure among nurses in rural clinical settings. The high cost of medication error to the Australian health system¹ along with recent research demonstrating a high level of medication error by nurses goes unreported,¹² then more research is clearly needed if things are to improve. A focus on aged-care settings, where nurses in this present study were found more likely to think a hypothetical error would be reported and disclosed, might be beneficial towards improving reporting and disclosure and therefore lead to increased prevention of medication error.

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