The development of medication management practice guidelines for nurses working with palliative care clients

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Abstract

Aims: To develop a medication management practice guideline to support quality care for rural clients and nurses in the community with a focus on palliative care.

Methods: The development of the guidelines included a sequential mixed methods design which involved the following steps; 1 gathering of vignettes from practice situations, 2. an Interprofessional collaboration forum, 3. literature review and draft guidelines prepared by the project team based on the literature, 4. an online survey for community and district nursing working in rural areas, 5. Semi-structured interviews with rural general practitioners, pharmacists and consumers and/or their carers, 6. Revision of the guidelines based on findings from the surveys and the interviews, 7.Revision of the guidelines based on stakeholders opinions and obtaining endorsement of guidelines by key local organisations.

Results: The guidelines were developed for nursing staff involved in caring for adult clients who received palliative care in rural areas. A total of 13 principles underpinning the guidelines with an explanation of what each principle were included. The main principles were; information resources, medication administration, medication orders and supply, syringe drivers, dose administration aids, medication storage, medication disposal, risk management and adverse events, transport of medications and cytotoxic medication administration.

The establishment of the guidelines led to a few recommendations to positively change the activities of the organisations regarding medications management. Examples of these recommendations were creating online educational resources addressing specific aspects of medications administration such as syringe drivers and cytotoxic medication handling and disposal.

Relevance: Rural community and district nursing practices form an integral part of delivering health services to palliative care clients. Provision of palliative care in the rural community has its unique challenges such as; varying perceptions of palliative care, professional issues and challenges of providing care in the community and system barriers. Medication administration is a key responsibility of community nursing staff assisting palliative care clients in their home. However, there is lack of clarity around their roles and obligations in the Australian rural context. Specific issues such as medication administration roles and responsibilities, medication disposal and ensuring accurate records of clients are not clearly defined by health service organisations. The formation of these guidelines addressed those needs.

Conclusion: Engaging multiple stakeholders in the rural community to draft the proposed medication guidelines resulted in identifying the scope of the proposed guideline. The development of these guidelines has the potential to promote the quality use of medicines in the rural community. Community health organisations require development of policy and procedure to support the implementation of the guidelines.
Introduction

Medication related errors consist of up to 3% of all hospital admissions. Moreover, it is estimated to cost the Australian health care system up to $1.2 billion annually. Medication-related adverse events could be the result of clients either experiencing adverse events or as a result of drug administration or medication errors. Reducing medication errors in order to improve client safety is, as a consequence, a government priority in many economically developed and underdeveloped countries, including the United Kingdom (UK), the United States (US) and five African countries. Ensuring client safety in the community is a challenging priority due to many reasons such as increase in the number of service providers involved with clients’ delivery of health care and rise in their case complexities.

An error in palliative care is defined as a failure of a planned action to be completed as intended in the use of an incorrect plan for achieving the aims and controlling the pain and sufferings for palliative care clients. Medication errors are relevant to the palliative care setting as they can have a significant impact on clients’ lives and their families as well as health care costs implications. Provision of palliative care in the community has also its unique challenges such as; perceptions of palliative care, professional issue and system barriers. Community nurses are faced with the limited resources such as access to a doctor, specialised nurses and pastoral support that a palliative care organisation would normally access. Added to this complexity is the lack of research around medication related adverse events in the palliative care setting. One study audited a total of 65 palliative care clients in hospital and found that 11% experienced on admission and up to 30% had a drug administration error. Only one small study reported on clients receiving community based palliative care found that 2.2 problems per person was identified to have been untreated. In general practice, the current literature suggests that between 8.5-12% of people attending general practice experience an adverse drug reaction and up to 5% required hospitalisation as a result.

Community and district nursing practices form an integral part of delivering health services to palliative care clients. Medication administration is a key responsibility of community nursing staff assisting palliative care clients in their home. However, there is lack of clarity around their roles and obligations in the Australian rural context. Specific issues such as medication administration roles and responsibilities, medication disposal and ensuring accurate records of clients are not clearly defined by health service organisations.

The lack of role clarity is even more prominent in rural areas where there are a range of unmet needs in terms of access to specialist health professional and educational requirements. A significant number (30%) of the Australia population live in rural areas. It is well established that people living in rural and remote areas have higher levels of chronic illness and disease risk factors and less access to health care services. Similarly, rural palliative care clients and their families have a range of unmet needs in terms of specialist health professional access and their educational requirements.

Therefore, primary health care providers are critical of palliative care provision in rural areas. Community based nursing is a key component in the multidisciplinary approach to meet the complex needs of individuals and their families/carers facing life limiting illnesses. Education and relevant guidelines are necessary to support nurses practicing in the community to provide quality support and care for clients.

Clinical practice guidelines can be used as an educational resource for health professionals, contribute to quality assurance processes and may assist in the resolution of legal disputes or ethical dilemmas. There is also evidence to suggest that implementing clinical practice guidelines can result
in improvements of care in many settings. Examples of such improvements include; reduced emergency departments’ admissions, decreased length of stay in hospital admissions and timely referral to community care services.\textsuperscript{14}

Currently medication management guidelines exist for both the acute and aged Care sectors. There are no guidelines developed for the community sector which also encompasses palliative care and cancer medication management. Given this background of less than optimal support of nursing staff to assist with medications management, we aimed to develop a local evidence based clinical practice guidelines for nurses working in the community setting on the management of medications for clients receiving palliative care, to inform and support nursing practice, establish policy and improve clients’ outcomes.

Methods

The development of the guidelines included:

- gathering of vignettes from practice situations
- an interprofessional collaboration forum
- literature review; draft guidelines prepared by the project team based on literature review
- an online survey for community and district nursing working in rural areas
- semi-structured interviews with rural general practitioners, pharmacists and consumers and/or their carers
- revision of the guidelines based on findings from the surveys and the interviews
- revision of the guidelines based on stakeholders opinions and obtaining endorsement of guidelines by key local organisations.

Ethics approval for the project was obtained from Monash University Human Research Ethics Committee of the Faculty of Medicine, Nursing and Health Services.

Results

Gathering of ‘vignettes’ from practice situations

Gathering of vignettes from practice situations supported identification of the current state of medication issues in the community setting and the issues that the nursing staff within the organisation are facing. Issues such as medications that were not taken or changed following a period of hospital admission caused confusion and distress for clients, carers and nurses whose role was unclear when medication management had been altered and communication between stakeholders had not occurred. Other issues such as the client or carers ability to administer medication and to organise resupply were issues that nurses in the community had to deal with regularly. When a person was deceased and medication was remaining nurses expressed moral distress over a lack of clarity as to who was responsible for disposal of the medication.

Interprofessional collaboration (IPL) forum

A total of 37 participants took part in an interprofessional collaboration forum where they were asked to consider these vignettes and discuss their experience regarding medications safety in the
community. Presentation of incidents recorded in the community health service risk database also informed the consultation. Stakeholder responses were analysed and emerging themes formed the basis for the literature review and survey. A list of the questions raised in the forum is listed in Table 1. The main themes obtained from the forum were the following; responsibility for medication supply, storage and disposal, the role of the carers/nursing staff in assisting clients with their medications, knowledge about cytotoxic medications handling, the need for nursing education and knowledge about the types of medications used and their administration and risk management for unforeseen medications incidents.

**Literature review**
A wide literature search was conducted (Cochrane library, Cinahl +, Medline, JBI database library and Google Scholar) and employed the terms; medication, product packaging, dose administration aids, medication review, S2 and S3, community health nursing, medication administration, nurse initiated, cytotoxic medication, medication systems, drugs, medications safety, management, guidelines, storage, disposal, administration, drug therapy, waste management, palliative, end of life, primary care, medication errors/prevention and control, polypharmacy and adverse events. The review identified gaps in the literature about any description of medication safety guidelines used by clinicians in rural community health care settings and any description of medication safety programs to support practice for nurses delivering palliative care in the home.

**Online survey**
An online, voluntary and anonymous survey was created using Qualtrics and completed by 21 nurses across Gippsland Community Health and Bush Nursing services. Participants details are shown in Table 2. The aim of the survey was to understand the main issues associated with medication administration and challenges in community practice.

Nurses were asked to respond to questions about their role and their perception of the client role in client self-administration, supervision of self-administration, the use of Dose Administration Aides (DAAs), syringe drivers and locked boxes. Requirements of documentation on medicines were questioned as were the nurses’ perceptions of support available from GPs, Pharmacists and their organisation in medication management issues. Incidents related to self-administration, use of medication lists, change of formulation and storage of medication were elicited in free text responses.

Dosage Assistance Aides (DAAs) were reported to be the most used method of oral medication administration (87%) and nurses found that multiple issues related to DAAs contributed to issues with medication management for clients and carers in the community.

Questions in the survey revealed that most respondents understood the variation of role in medication management as self-administered, nurse administered or as nurse supervised. Regular review by the GP at 3 or 6 months was recommended by the majority of respondents and all supported the use of Home Medication Reviews, particularly following discharge from hospital.

The survey results also revealed that 33% of nurses were unaware of their organisation’s medicine disposal policy or even if one existed. A total of 30% of nurses reported that their organisation did not provide any training in use of DAAs, handling and disposal of cytotoxic medication and syringe drivers. Moreover, role clarification about medication administration and role responsibilities in situations where clients are experiencing cognitive decline were highlighted as areas of concern for these nurses. Responses were divided equally in their knowledge of nurse-initiated medications. The capacity of clients to fill prescriptions and access medications from the home and issues with
medications disposal were all cited by nurses as pathways to adverse outcomes for management of medications in the community.

**Semi-structured interviews**

A total of 11 semi-structured interviews with consumers and/or their carers, general practitioners and pharmacists were conducted and key themes and concepts derived from the interviews aided in the development of the guidelines. The thematic analyses are represented in Table 3.

Client and carers were asked about their perception of their role in medication management and their relationships with health professionals in the community. The roles of the visiting nurse, the local pharmacist and the GP were all mentioned as questions issues related to medication administration, storage and disposal. The main themes identified by consumers were education about their medications from health professionals, support from health professionals with administration and medications supply issues.

General Practitioners were asked to define their role in medication safety in the community, their understanding of issues faced by clients and other professionals and what strategies would they recommended to support improvement. The results from the general practitioners’ interviews highlighted issues such as ensuring medication safety, the importance of medication reviews by pharmacists and emphasised the importance of communication between health providers.

Interviews with pharmacists explored their role in medication management in the community and what they perceived were the role of the other stakeholders. Pharmacists were asked to share issues of concern and strategies for improvement. The pharmacists’ interviews mainly stressed issues such as client education, communication and compliance in addition to interprofessional collaboration for better clients’ outcomes. Pharmacists agreed with GPs that the pharmacist’s role would be to educate clients on medication management issues related to duplication, storage, drug interactions and potential need for disposal of unused medications.

**Revisions of guidelines based on responses from the online survey and interviews**

A summary of the findings from the online surveys and the interviews were presented to the project investigators, the local palliative care organisation and staff from the study organisation. They then discussed the findings and further amendments were made to the guidelines. Areas amended included the incorporation of mandatory education for community nurses in the areas of use of dosage administration aides, syringe drivers and cytotoxic medications.

**Revisions of guidelines based on responses from stakeholders’ feedback**

The draft guidelines were further reviewed with stakeholders in order to further refine them and ensure their ability to be implemented by nurses working in the community. Specific aspects about nursing staff responsibilities on medication administration and supervision of clients taking their medication were clarified. Such areas included the addition of “Medication Supply” to the guiding principles to ensure clarity in role responsibly of nursing staff and carer in the supply of medications in the home and that adequate supply of medications is maintained within the home for all clients. Amendments to the ‘Medication List’ principle were made to support nurses in determining appropriate timeframes for updating client medication lists.
The guidelines

The final version of the guidelines incorporated introduction and background, scope, methods, group meetings, guiding principles, references, authors’ names, disclosure of potential conflicts of interest, review group and appendices. A total of 13 principles underpinning the guidelines with a brief explanation of what each principle entails is shown in Table 4. The main principles were: information resources, medication administration, medication supply, dose administration aids (DAA), syringe drivers, nurse initiated medications, medication list, medication storage, medication disposal, medication orders, risk management and adverse events, access and transport of medications and cytotoxic medication administration.

Discussion

This project was initiated after observing a trend in the number of medication issues and risks being identified and documented in the risk register by the community health service’s District Nursing and Palliative Care service. By involving pharmacists, general practitioners, community and bush nurses, clients and carers in the research we were able to address the issues from each different groups’ perspectives. Developing practice guidelines for medication management in the community will enable nursing staff to have a foundation on which to understand and guide practice and ultimately improve clients’ safety in the community.14, 15

We found a paucity of high quality evidence on guidelines addressing medications management in the community sector including palliative populations. Obstacles to conducting high quality research such as randomised controlled trials in palliative care are well documented and include ethical concerns about vulnerability and consent, and practical difficulties such as recruitment, attrition and compliance.16 The current project design which involved a sequential mixed method prospective design allowed us to overcome those difficulties by combining several research methodologies to collect relevant data that significantly helped to develop the guidelines. The research design has allowed us to formulate evidence based recommendations where evidence was lacking. Moreover, the developed guidelines were comprehensive in that various stakeholders were consulted in each step of their development.

The interprofessional collaboration forum in which 37 participants took part resulted in not only providing a wealth of information to the project team but also was a starting point for education and strengthening the importance of documenting any medication issues through the risk management system for ongoing monitoring. Further, the steering group brought together not only academics, but also clinicians (nurses, general practitioners, pharmacists) and community representatives. This has ensured the guidelines captured the medication issues identified by the different stakeholders to guide practice.

The establishment of the guidelines led quality improvement recommendations in the community health service regarding medications management. Examples of these recommendations were creating online educational resources addressing specific aspects of medications administration such as use of syringe drivers and cytotoxic medication handling and disposal. These online modules were suggested to be mandated to complete as part of nursing staff competency standards. The use of medication reconciliation forms by nursing staff was recommended to ensure up to date information about the clients’ medications and that these are accessible by all nursing staff involved in the care of clients. The form would be updated regularly by visiting nurses and communicated to pharmacies and treating general practitioners and upon any changes such as hospital admissions. Such
recommendations would be supported by organisational policy and procedure. Finally, locked boxes were recommended to be used by clients to store their medications and to increase medication safety in the community. A combination lock was recommended where the individual client (where appropriate) and those caring for them, including nursing staff have knowledge of the combination.

There were few limitations associated with the development of the guidelines. Firstly, the length of the online survey may have been a hurdle for some nurses. This may have impacted on the response rates received. Secondly, we acknowledge that in some circumstances, it may not be possible for all health care professionals to practice in accordance to the practice guidelines.

In light of the limitations discussed above, there is a need for further evaluation of the guidelines and additional research into medication errors and adverse events experienced by clients and their carers as a result of implementing the guidelines into the organisations. Use of the practice guidelines will also require develop of organisational policies and procedures to ensure adherence and evaluation of their use. Trialling the use of guidelines by other organisations with different business models of health care delivery is also recommended. This will aid in their validation and evaluation of their broader scope at reducing medications errors in the community setting across rural areas.

Conclusion

A rural community need was established by community consultation. Stakeholder experience was synthesised with current literature with specific emphasis on the context for practice.

Engaging multiple stakeholders to draft the proposed medication guidelines resulted in identifying the relevant scope of the proposed guidelines. The development of these guidelines has the potential to promote the quality use of medicines in the community and protect and support the rural community; the patient, their carers, nurses, pharmacists and doctors.

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Author disclosure statement

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References


