Patient Safety

Examining the Adequacy of the 5 Rights of Medication Administration

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Purpose: The purpose of this article was to examine the adequacy of the 5 rights (5 R’s) for nurses and for including patients in medication administration while considering patient safety. Patient safety related to medication adverse events will be discussed; the 5 R’s will be examined and critiqued and the importance of patient-centered care and patient participation in care will be presented. A path forward is offered based on the expressive-collaborative model. Suggestions for introduction of the model are outlined, and implications for practice, research, and education are discussed. Background: Nurses have been guided by the 5 R’s of medication administration in both education and practice for many decades. Many have found the 5 R’s to be lacking and proceeded to propose the addition of a variety of rights from right indication to the rights of nurses to have legible orders and timely access to information. Patients are no longer passive recipients of care and are choosing to play increasingly greater roles in the process of care. Innovation: In a collaborative patient-centered environment, an expressive-collaborative model of approaching systems of care is needed. In this model, individuals negotiate with one another to find out what people need to know and to strategize on the means to acquiring the necessary information. Providers are no longer expected to be all knowing. Conclusion: Medication administration is no longer simply the 5 R’s. Medication administration is a process with many interconnected players including patients. We need to collaboratively restructure medication use in this era in which all involved in the process share the responsibility for a safe medication use system.

KEY WORDS: expressive-collaborative model, medication 5 rights, patient centered

Patient safety is a current national and international priority, with medication safety designated as both a widespread and risk-producing area of concern.1–5 Medication safety requires the integrity of a complex series of interrelated steps, such that failure to...
adequately assess, prescribe, dispense, consume, and monitor medications can potentially lead to adverse events and harm. For decades, nurses have practiced the 5 rights (5 R’s) of medication administration: right patient, right drug, right dose, right route, and right time, as a process to minimize risk of error in medication administration. The 5 R’s of medication administration were developed for use by nurses, and consequently, the role of the patient in the medication administration process has only recently been considered. Increasingly, hospitalized patients want to play a greater role in their treatment and care and see a role for themselves in medication administration. The purpose of this article was to examine the adequacy of the 5 R’s for nurses and for including patients in medication administration while considering patient safety. Patient safety related to medication adverse events is discussed. The 5 R’s are examined and critiqued. The importance of patient-centered care and patient participation in care is presented, and a path forward is offered based on the expressive-collaborative model of ethical reasoning. Finally, suggestions on the introduction of the model are offered, and implications for practice, research, and education are discussed.

PATIENT SAFETY AND MEDICATIONS

Compromised safety in medication management can be extremely costly to patients, health care professionals, and the health care system. A recent report on medication safety concluded that approximately 1.5 million preventable adverse drug events occur per year, resulting in a total cost of US $3.5 billion. Similarly, as many as 1 in 5 Canadian patients admitted to the hospital experienced adverse events at the point of discharge home, and 66% of these were medication-related events. Medication-related events are estimated to cost Canadians $750 million. A study of Halifax, Nova Scotia, seniors found that as many as 1 in 11 experienced a preventable drug-related morbidity over a 2-year period. Moreover, patients also recognize problems with the manner in which medications are provided to them. In the 2003 Commonwealth Fund Survey, 11% of patients in Canada reported that they had been given the wrong medication at one time or another.

CRITIQUE OF THE 5 R’S

Nurses administer the majority of medications in hospitals. The standard most frequently referred to guide the medication administration process is that of the 5 R’s as described above. Following the 5 R’s implies that a medication error will not occur. However, clinicians, researchers, and administrators realize that adherence to the 5 R’s is not a stand alone process. Furthermore, a considerable volume of literature exists on the inadequacy of relying on the 5 R’s. Most medication errors occur at the points of ordering (39%) and administering medications (38%).

The 5 R’s were established in an era when the paradigm guiding care delivery held individuals solely responsible in the event of any type of error in care delivery. The context in which care was delivered remained unexamined. Gradually, clinicians and researchers came to recognize that this culture of blame did little to address the occurrence of errors and in fact resulted in a failure to report errors and, as a result, a failure to learn and to understand the cause of many errors.

The limitations surrounding sole reliance on the 5 R’s for medication administration have been recognized for some time, and efforts have proceeded to augment the 5 R’s in 2 ways: first, by adding additional rights and, second, by proposing rights for the nurse administering the medications. Suggestions that have been made in terms of augmenting the 5 R’s include right indication, right documentation, and right equipment. Cook proposed a series of rights for nurses that included the right to have legible orders, correct drug dispensing, timely access to information, procedures in place to support medication administration, the time it takes to safely administer medications, and problems addressed in the medication administration system.

Work interruptions during medication administration are also known to be a source of medication errors. The number of interruptions is estimated to be 6.7 per hour. A recent review of the literature on interruptions revealed that a more precise definition of interruptions is necessary and that nurses themselves initiated most of the interruptions. Clearly, interruptions need to be reduced.

For a decade, the Institute for Safe Medication Practices has written about the shortcomings of the 5 R’s process and the inadequacy of simply adding rights to the existing process. The Institute for Safe Medication Practices points out that verifying a patient armband does not guarantee that the armband belongs to the person wearing it and that the medication in the bubble pack is what is written on the label. The lesson in this work is that medication administration is part of a complex system of care delivery and that all aspects of the system must be functioning properly to minimize the chance of error during the delivery of patient care.

Nurses themselves realize that the medication administration process is much more than the 5 R’s. The 5 R’s are initiated at the point of medication administration; however, a host of actions occurs well before this step including checking medication orders, following up with pharmacy on missing medications, and assessing the patient. The literature makes it abundantly clear that the process of medication administration is a complex one, one in which all systems of an organization must be properly functioning, and one in which the professionals need adequate time and resources. The ultimate aim in the medication administration process is to safely administer medications to patients. Despite this, there is a lack of consideration of the role of the patient in these processes. Not only has the manner of looking at medication errors shifted from individuals to systems, but also the care provider is no longer seen as solely responsible for the well-being of the patient.

PATIENT-CENTERED CARE

Patients are not passive recipients of health care. In 1998, the Canadian Institute for Health Information spearheaded a consultation process to determine patient health information needs. Consumers were included in this consultation, and one of the priorities advanced from this initiative was the distribution of health information to consumers (www.ciih.ca). Knowing this, the Canadian Patient Safety Institute has included the involvement of patients as a priority area for research. One of the priorities identified by
Canadian Patient Safety Institute related to patients is the patient role in safety.

In 2002, citizens from the United States formed the Consumers Advancing Patient Safety. This organization consisted of patients’ family members who had experienced loss as a result of adverse events. Today, this organization exists to provide consumers a voice regarding health care safety and the ability to serve as a resource for care delivery centers to become more patient centered (www.patientsafety.org).

Within the Canadian context, a 2002 survey of patient views on the patient-provider relationship found that more than 50% of patients believe they have the primary responsibility for decisions regarding their health. An additional 35.6% expect decision making to be shared between themselves and their health care provider.

Canadian patients seek and expect to receive information regarding their health condition. Because safety is an integral part of health care, involving patients in issues related to their own safety presents as one means of reorganizing services so that the power to provide safe health care is shared. In support of this statement, the World Health Organization World Alliance for Patient Safety launched an initiative in 2004 to coordinate global and national efforts to improve patient safety. The World Health Organization World Alliance for Patient Safety stressed that patient, family, and citizen perspectives must be central to patient safety. Most regional, national, and international conference programs now include testimonials from patients and families about individual adverse events.

Further evidence of a shift in thinking from provider-only solutions to consideration regarding patient involvement in safety has come from the literature on patient-centered care. Much has been written about patient-centered care, and 3 robust documents are briefly described here to illustrate this shift in thinking. They are the (1) Registered Nurses of Ontario’s Best Practice Guideline on Patient-Centered Care; (2) American College of Critical Care Medicine’s Clinical Practice Guideline for Patient-Centered Intensive Care Units; and (3) Picker Institute and Commonwealth Fund–sponsored report on patient-centered care.

Many health care delivery centers describe the care they provide as patient centered. Patient-centered care encompasses respect for human dignity, the belief that patients are experts of their own lives, and respect for patient goals. Patient care based on values of continuity, consistency, timeliness, responsiveness, and universal access will also be safe care (Registered Nurses of Ontario). Asking patients and families about what they want and how they see their health care is part of patient-centered care.

The American College of Critical Care Medicine’s Clinical Practice Guideline outlined how providers need to act in relation to patients and families in all aspects of their care. This guideline strongly supports including patient and family perspectives and the inclusion of patients and families in the decision-making process.

The Picker Institute and Commonwealth Fund report on patient-centered care outlined the attributes expected in a patient care environment, one of which is the involvement of patients and families. The author explained that this involvement must be provided at multiple levels from the bedside to developing policy. What is absent from these important documents is the elaboration of the factors that silence the patient voice and how to banish the silence.

Partnering with patients to conduct research about patient safety is congruent with a patient-centered philosophy and with the tenets of primary health care and health promotion outlined in the Ottawa Charter. Central to the Charter is the message that health systems must reorganize in such a way as to “share power with other sectors, other disciplines and most importantly with people themselves” and that health is not the sole responsibility of the health care provider and the health care system. Recently, in a study on the perspectives of patients and nurses on the role of the patient in medication administration safety, participants confirmed that they saw a role for patients in medication administration even if the role was limited to the patient (who is able) verifying with the nurse that the medications about to be ingested were in fact what they usually take.

A medication reconciliation safety initiative is under way across North America. This initiative involves the verification of a patient’s medications upon admission or at triage in an emergency department and at every care transfer point. This initiative is a good example of a strategy to engage patients in their care. The only way that reconciliation will work is if the initial medication history is accurate, and this means the person interviewing the patient (who is able) verifying with the nurse that the medications about to be ingested were in fact what they usually take.

INCONGRUENCE BETWEEN 5 R’s AND PATIENT-CENTERED CARE

The 5 R’s were introduced to the medication administration process at a time when the health care provider was deemed the expert in illness and treatment related matters. Learning about medication administration following the 5 R’s is no longer adequate. Nurses take the medication administration process much further than simply following the 5 R’s. Nurses have identified the importance of teaching patients about their medications and the need for patient involvement in the medication administration process when possible. Nurses collaborate with physicians and pharmacists on an ongoing basis regarding medications. Many patients want to be more involved in the decision making around their medications as well as all aspects of care. Nurses, physicians, and pharmacists have an opportunity to explore with patients, approaches to medication administration that incorporate a systems approach, and interprofessional patient-centered medication administration. A variety of theories were considered to guide such an initiative, and a theory based in ethics was selected for its relevance to all involved.

FROM 5 R’s TO PATIENT CENTEREDNESS

Traditional ethical models such as the theoretical judicial model of thinking predominated throughout much of the 20th century. Our society is stratified by sex, class, race, age,
education, and many other layers of power and status. Because of these layers, members with health and medical backgrounds perceive situations differently from those without a health care background. According to the theoretical judicial model, those with power and status were considered to be all knowing and decided what was best for all involved, in this case, health care. In the past, the views of patients and families were largely discounted, as well as the context of their lives, in decisions regarding care and medication administration.

EXPRESSIVE-COLLABORATIVE MODEL

An ethical model that embraces patient-centered care is the expressive-collaborative model.37 This model is a philosophical model that takes a moral view of life, with a particular focus on sharing responsibility among human beings. The skills necessary to enact the model are perception, discussion, and ability to respond. This model invites individuals to examine the moral view of life that we hold and to what extent we expect patients to act in a particular way, and how patients are judged if they fail to do so. Moral equilibrium is the goal, related to beliefs, perceptions, expressions, judgments, actions, and responses. Tolerance will not do; ultimately, mutual respect is desired via a consensual process. Patients need to be considered as full moral agents, and traditional moral understandings such as the complete authority of providers over medication administration are questioned.

This model advances that all human beings carry moral identities shaped by the lives we have lived, and these identities are imbued with moral judgments. These judgments may extend to how we believe the patients we care for should look, act, be, and do. The model encourages us to examine the moral view of responsibility that we hold, to reflect on the extent to which we expect patients to act in a particular way, and to recognize provider tendencies to locate failure in patients forgetting there is a level of shared responsibility. Patients need to be considered as full moral agents; traditional practices such as health care providers having complete control over medication administration are questioned. Moral order is necessary and always present. It is the disequilibrium in the order that the model seeks to address. In this model, individuals negotiate with one another to find out what each other need to know and how to go about finding out what they need to know. In this model, one size does not fit all; rather, each person is considered to have a level of knowledge and understanding that is valued, and health professionals will tap into this and work with the person collaboratively to determine how a course of treatment is to unfold.

Application of the model was not found in the nursing and health-related literature but rather in the education literature,38 where the administrative and educational challenges as well as the strategies for implementation were discussed. A central administrative challenge was the existence of the theoretical judicial model and the enactment of a certain “moral” order in schools. Educators and administrators spent significant amounts of time determining a code of conduct for students. Introducing the expressive-collaborative model necessitated broad consultation with all involved, increasing the likelihood of students self-managing the agreed-on behaviors and leaving administrators and educators time for doing direct administrative and educational activities.

The major challenge to model implementation identified was the engagement of all involved, to trust in the process and to be willing to keep working at the process to get it right. This means entry into a process of creation of a different way of being and doing. This process is not efficient in the short term, and this is particularly challenging for individuals who seek early results.

EXPRESSIVE-COLLABORATIVE MODEL AND CLINICAL NURSE SPECIALIST PRACTICE

The skills necessary for incorporating this model into clinical nurse specialist (CNS) practice involve perception, discussion, and responding, all of which the CNS role embraces. Practicing within the model necessitates an ability to respond sensitively in feeling and behavior, an ability to clearly describe and explain activities and situations, an appreciation that each person has a level of knowledge and understanding, and the ability to establish some basis of moral equilibrium with patients. The model represents a way of thinking about how we (nurses) are in relation to patients; if we believe that we know best, then disequilibrium results and the likelihood of patient participation in any aspect of their care is reduced.

The CNS is constantly consulted in situations that prove to be clinically and interpersonally challenging and is ideally suited to identifying situations in which the moral wishes of the patient have not been respected. This model offers the CNS a way forward in these situations. The challenges to CNS practice in embracing the model are to recognize that many of the health care providers they work with may be holding firmly to the theoretical judicial model. Engaging everyone involved in a collaborative process means bringing together individuals with dissenting points of view and facilitating a group process that seeks balance over compliance necessitating skills in handling conflict and discord. The CNS as facilitator also needs to be a reflective practitioner and to guard against unduly influencing the process because of a particular personally desired outcome.

INTRODUCING THE EXPRESSIVE-COLLABORATIVE MODEL

This model has the potential to frame the way entire health-related organizations operate. Organization-wide implementation all at once is not recommended because the model is a process of creation and as such needs to happen in one setting at a time. The CNS is ideally suited as the individual to introduce use of the model one situation at a time, and as those involved experience the process, a change in thinking and approach will begin to occur one person at a time. Once the model has been successfully used in a variety of situations and settings and those involved believe in the process, then consideration can be given to wider implementation of the model in other settings.

EXPRESSIVE-COLLABORATIVE MODEL, 5 R’s, AND SAFETY

One can see how the establishment of the 5 R’s for nurses to administer medications made sense in the era of the
theoretical judicial model. Medication administration was seen as a single act performed by a nurse and not as part of a larger system. Today, we know that the main players in medication administration (physician, nurse, pharmacist, patient) are intricately interconnected; each has a stake in making sure that the medication administration system functions effectively. This will require each player respectively and collaboratively identify and articulate the processes necessary to ensure system integrity, and each player needs to know and understand the processes of all players.

Patients are the newest players in this process and as such will need considerable mentoring by those familiar with medication use systems. The health care provider team and the patient will ultimately formulate what the next iteration of the 5 R’s will be; however, small examples of revisions to existing processes may include requiring patients where appropriate to identify the medications they are about to take and the indications for the medications. Pharmacy may consider issuing where appropriate a medication administration record to the patient for their reference and to promote patient self-management of medications.

The challenge is shared by all involved in medication management, and it is 2-fold: first to collaboratively restructure the medication use processes to reflect what each person in the process is required to do and, second, to recognize that patients are partners as, they have knowledge and expertise, and they are why we are here. By taking up this challenge, we will move from the era of the 5 R’s for one player to the era of collaborative patient-centered practice wherein consensus is reached among all involved in medication use on the elements necessary for each player to enact to safely participate in the medication administration process.

The 5 R’s have served to frame the medication administration process in a time when providers of care were considered all knowing. The expressive-collaborative model advances the notion that the knowledge of everyone involved in health-related processes is legitimate and valued and needs to be integrated into care processes. The 5 R’s will need to evolve in a manner that embraces collaborative practice. The CNS is ideally situated to facilitate the process of bringing together the key players in medication administration to revise the 5 R’s so that they reflect the collective knowledge and responsibilities of all involved. The revised process will need to be pilot tested and evaluated. If further refinement is necessary, those who developed the process will reconvene.

Once the revised process is deemed operational, the process will be implemented, first within one setting and then gradually expanded. Health care centers already monitor medication-related errors, and this process will reveal any new trends. Research studies will need to be designed to determine the satisfaction of those involved in the process, as well as the benefits and challenges in the process.

Following successful development, implementation, and evaluation of the revised medication administration process, education will be required for all involved. This education will also need to be introduced into programs for nursing education.

**CONCLUSIONS**

Medication administration is no longer simply the 5 R’s. Medication administration is a process with many interconnected players including patients. We need to collaboratively restructure medication use systems in this era in which all involved in the process understand respective roles and share the responsibility for a safe medication use system. The proposed revision to the medication administration process is not simply adding a step or two to an existing process, but rather, a rethinking of attitudes and actions on the part of each person involved in the medication use system. The hope is that, by each participating person, viewing the medication administration process in a new way that gains can be made in making the process more responsive and safer for all involved.

**IMPLICATIONS FOR PRACTICE, RESEARCH, AND EDUCATION**

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**REFERENCES**


