



Center *for*
Rural Health

University of North Dakota
School of Medicine & Health Sciences

Utilization of Medication Assistants in North Dakota

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*Connecting resources and knowledge to strengthen
the health of people in rural communities.*

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EXECUTIVE SUMMARY

Background

In 1994, the North Dakota Board of Nursing authorized the role of medication administration by a medication assistant as a delegated nursing task, directly supervised by licensed nurses (see Appendix A). To establish this assistive role, the Board of Nursing established standards for two types of medication assistant programs. As of 2006, the Board of Nursing has approved four Medication I Programs and 10 Medication II Programs (See Appendix B).

Between 2000 and 2005, there was more than a 300 percent increase in the number of registered medication assistants in North Dakota from 426 to 1,261 (ND Board of Nursing 2004-2005 Annual Report). According to a 1992 self-report survey of long-term care organizations (North Dakota Long-term Care Association, 1992), the use of medication aides in skilled organizations does not compromise patient safety. This study, funded by the North Dakota Board of Nursing examined the procedures, staffing patterns, delegation process, and administrative perceptions of the safety of medication assistants in a survey of health care organizations throughout North Dakota.

This report includes the results from surveys sent to all North Dakota hospitals, long-term care organizations, regional public health organizations, home health organizations, and clinics in the fall of 2005. Of the 200 facility responses representing 96 percent of counties in North Dakota, 19 percent (38 organizations) indicated that they employ medication assistants.

Survey Results

- **Utilization**

The majority of medication assistants are employed by long-term care organizations with approximately equal numbers of Medication Assistant I and II registrants.

The greatest percentage of Medication Assistant I registrants are employed on the evening and overnight shift and are assigned an average of about 30 patients with Medication Assistant II registrants having the greatest number of patients with 45 patients.

- **Recruitment**

Organizations indicated that Medication Assistant IIs were the most difficult to recruit.

- **Supervision**

The majority of medication assistants are supervised by a LPN and RN team.

- **Training and Orientation**

Most organizations indicated that they train their medication assistants through in-house classes and that a nurse is responsible for orientating the medication assistant on the floor during an orientation that lasts on average between 10 days and three weeks.

- **Safety and Utilization**

The majority of organizations indicated that they perceived the utilization of medication assistants in their facility as very safe.

- **Medication Errors**

When medication errors occurred in organizations, an error report form is the most frequent protocol along with reporting of the error to either a charge nurse or Director of Nursing or through a chain of command/committee including consultants or quality assurance individuals.

Organizations reported that following a medication error, the safety of the patient was first ensured and that subsequent follow-up depended on the severity of the medication error. Many organizations reported that they have a formal evaluation of the process. Also, the cause of the error is frequently reviewed by a task force or a quality assurance committee. Other organizations indicated they handle medication errors on an individual basis including retraining individual employees or conducting audits.

Organizations reported several checks and balances to prevent medication errors. These included checking several items prior to administration (i.e., right patient, right medication, right dose, right route, right time), the use of pre-setup seven or 30 day medication administration systems, daily shift counts, observations/audits of medication administration, in-services and procedures in place to double-check the medication order with the physician and pharmacist before a dose is administered.

Most organizations track medication errors by employees through an incident file that is reviewed on a regular basis by quality improvement individuals or consultants. Almost one-third of organizations indicated that they did not do any employee specific medication error tracking.

INTRODUCTION

Health personnel shortages can negatively impact health care quality through reduced health care access, increased stress on providers, and the use of under-qualified personnel. Also, shortages can contribute to higher costs by raising compensation levels to attract and retain personnel and by increasing the use of overtime pay and expensive temporary personnel. Workforce shortages, while a problem for the entire health care system, are likely to be most severe for rural/frontier regions. North Dakota has 41 federally designated medically underserved areas, and 81 percent of North Dakota's 53 counties are designated as partial or whole county health professional shortage areas. North Dakota also has the highest proportion of residents aged 85 and older, the age group with the greatest need for healthcare services. In North Dakota, this cohort is predicted to double in size by 2020.

Medication assistants serve as nursing assistants who have completed special training in the administration of medication and generally work in assisted living, basic care or long-term care organizations. Medication assistants are responsible for the administration of medication, record keeping and reporting effects of medications on patients (Allied Health Schools, 2005). Between 2000 and 2005, there was more than a 300 percent increase in the number of registered medication assistants in North Dakota from 426 to 1,261 (ND Board of Nursing 2004-2005 Annual Report). In North Dakota, medication assistants are performing this delegated nursing task and are directly supervised by a licensed nurse. There are three levels of medication assistants (I, II and III). Each level differs in the amount of training required and the routes and types of medication they are allowed to administer (see Appendix C). For example, all levels of medication assistants administer oral, eye, ear, and nasal medications whereas only Medication Assistant IIIs may administer intramuscular injections. No medication assistants are permitted to administer medication through central lines or intravenously.

The Medication Assistant Study was designed to obtain information about how medication assistants are currently utilized in health care organizations and whether this utilization provides safe patient care according to the perception of health care organizations. This study was funded by the North Dakota Board of Nursing in 2005.

Ten questions were added to the North Dakota Nursing Needs Study Health Care Facility Survey. Surveys were sent to all North Dakota hospitals, long-term care organizations (basic care, assisted living, nursing home, residential treatment), home health organizations, and clinics in the fall of 2005. Of the 200 facility responses, 22 percent represented urban organizations; 40 percent represented semi-rural organizations; and 38 percent of the responses came from rural organizations. 51 of 53 (96%) counties in North Dakota were represented in the survey responses. Thirty-eight or 19 percent of organizations indicated that they employ medication assistants.

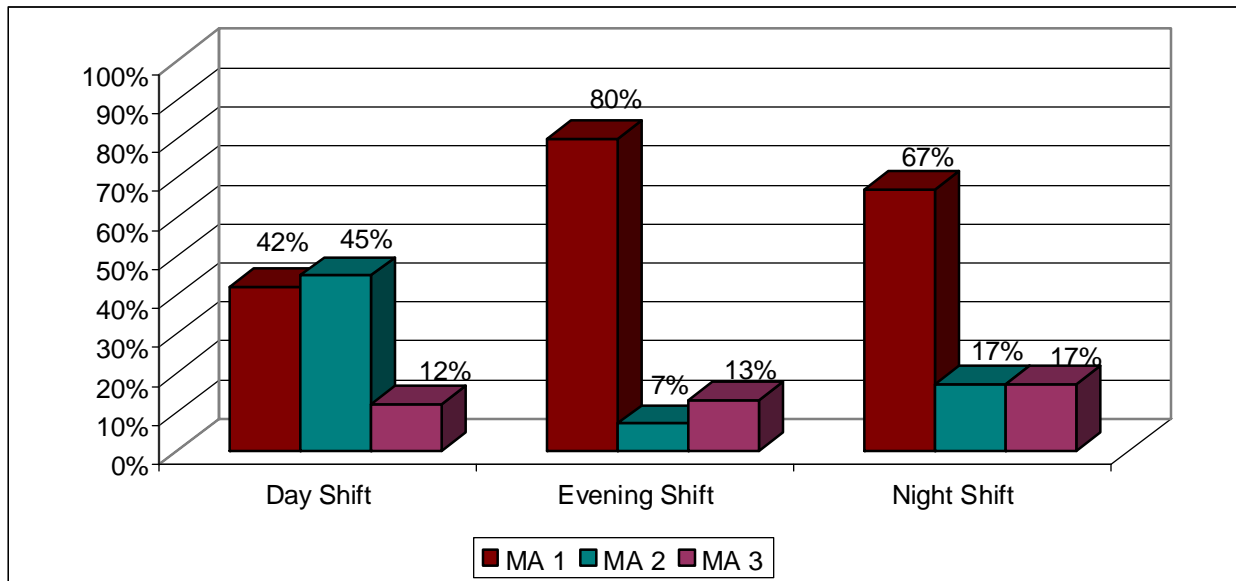
RESULTS

Utilization

The 38 responding organizations (19%) employ a total of 268 medication assistants. Nineteen are employed in a clinic setting (Medication Assistant IIIs) and the remainder are employed in long-term care or residential treatment settings (111 Medication Assistant I, 94 Medication Assistant II and 44 Medication Assistant III).

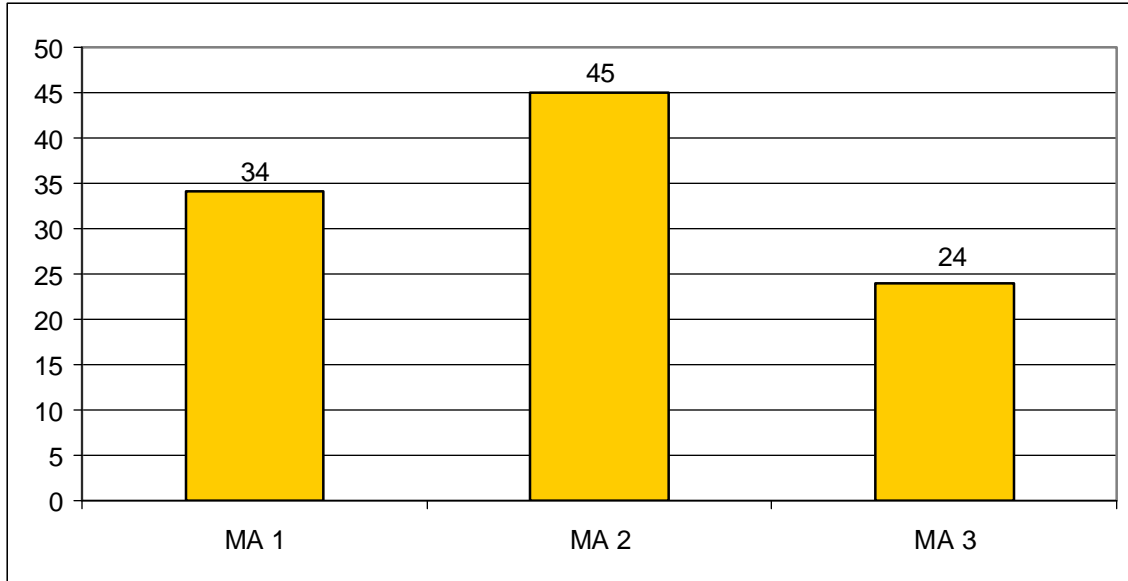
Organizations were asked to report the shifts that were worked by a medication assistant according to type/level of medication assistant employed. The greatest amount of Medication Assistant Is are employed during the evening and night shifts (80% and 67%) (see Figure 3).

Figure 3: Shifts that Medication Assistants Work



Organizations were asked the average number of patients they assign to their medication assistants. Medication Assistant IIs had the greatest number of patients assigned to them (see Figure 5).

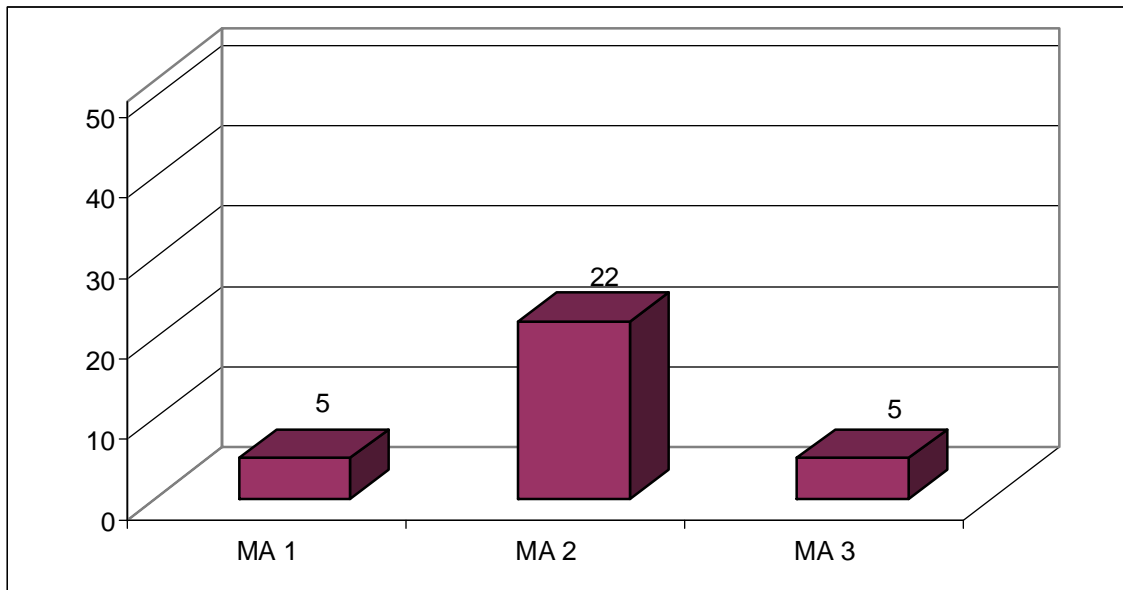
Figure 5: Number of Patients Assigned by Medication Assistant Level



Recruitment

Organizations were asked the number of weeks on average to fill vacant medication assistant positions. Organizations had the most difficulty recruiting Medication Assistant IIs (see Figure 7).

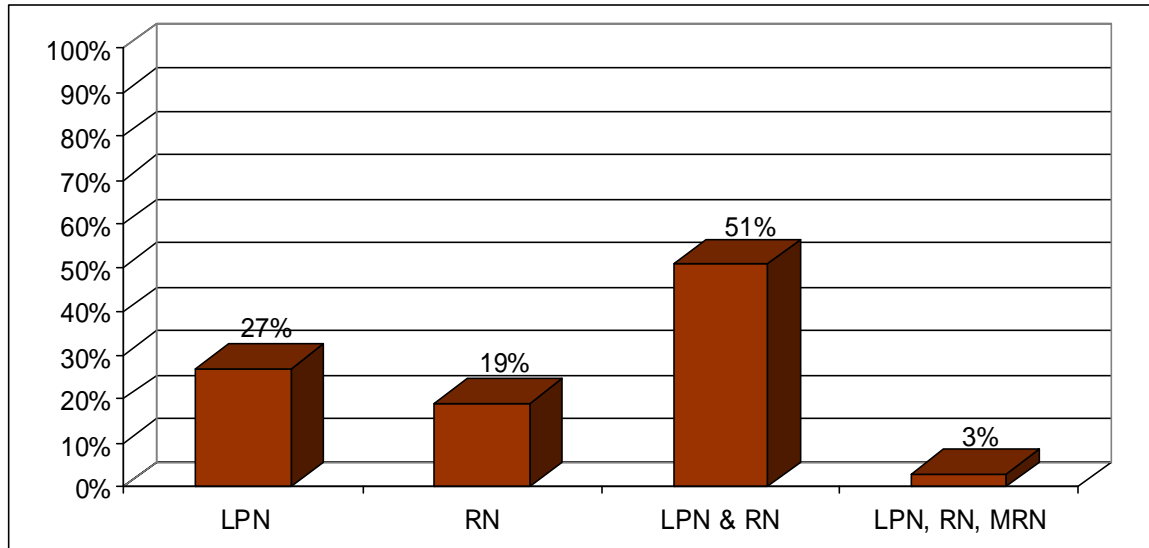
Figure 7: Weeks to Fill Vacant Medication Assistant Positions by Level



Supervision

Organizations were also asked to indicate the level of staff that supervises medication assistants. There was a wide range of responses with over half of the organizations indicating that a LPN and an RN together supervised their medication assistants (see Figure 8).

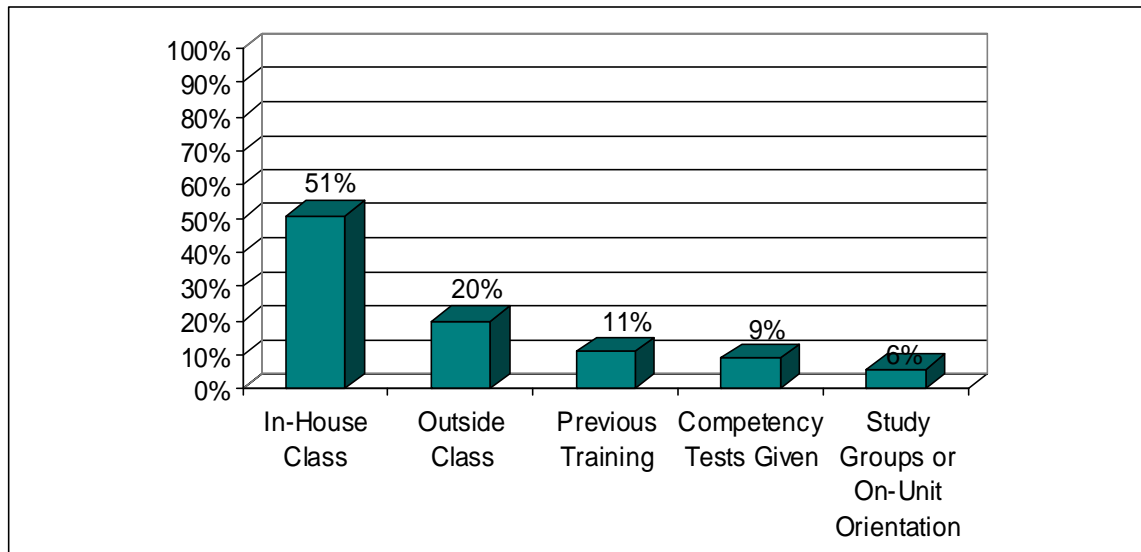
Figure 8: Supervision of Medication Assistants



Training and Orientation

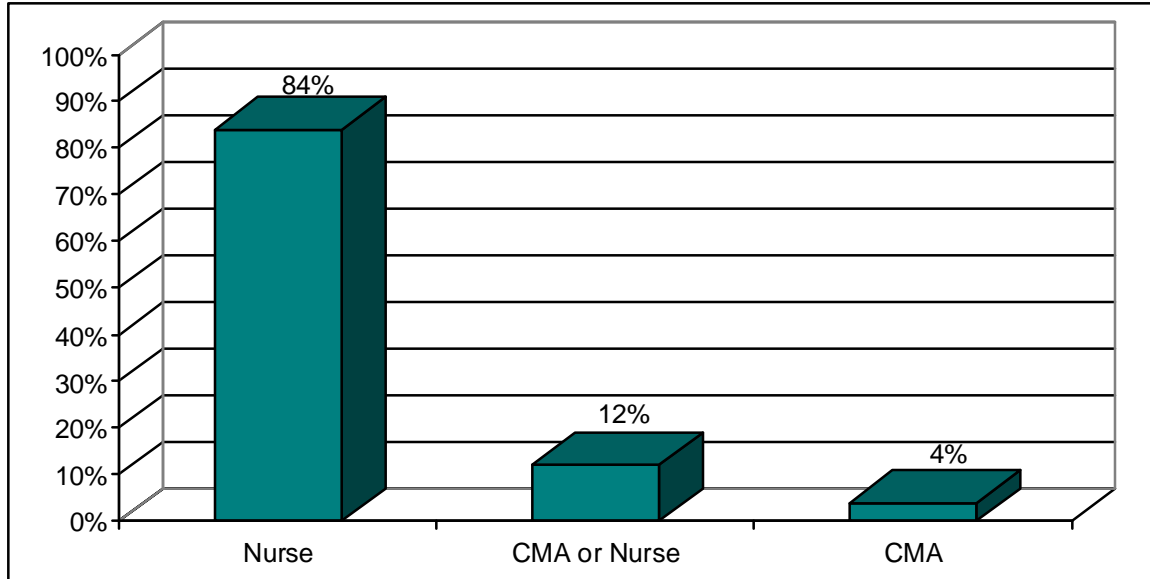
Organizations were asked how their medication assistants are trained. The majority greatest of organizations indicated they offered a class within their facility which was followed by one-on-one mentoring/orientation (see Figure 9).

Figure 9: Training of Medication Assistants



Organizations were asked how the medication assistants are orientated on the floor. Organizations indicated that medication assistants received between 10 days and three weeks of orientation and were most frequently orientated by a nurse (84%) (see Figure 10).

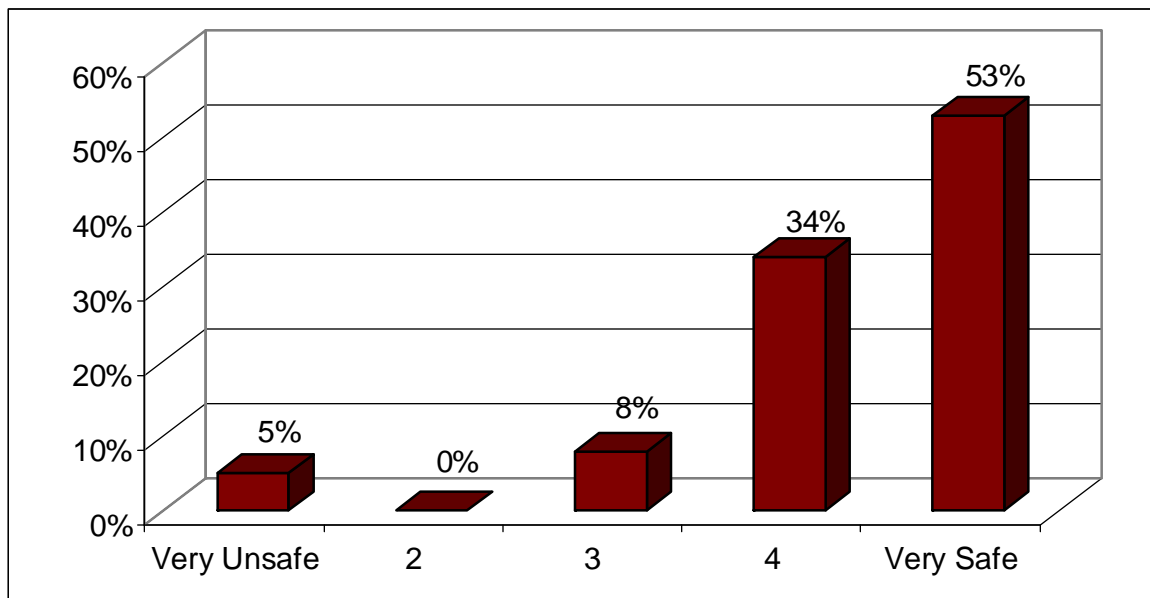
Figure 10: Orientation of Medication Assistants



Safety and Utilization

Organizations were asked their perception of safety using medication assistants from a one for very unsafe to five for very safe. Most organizations indicated that they perceived the utilization of medication assistants as very safe (see Figure 11).

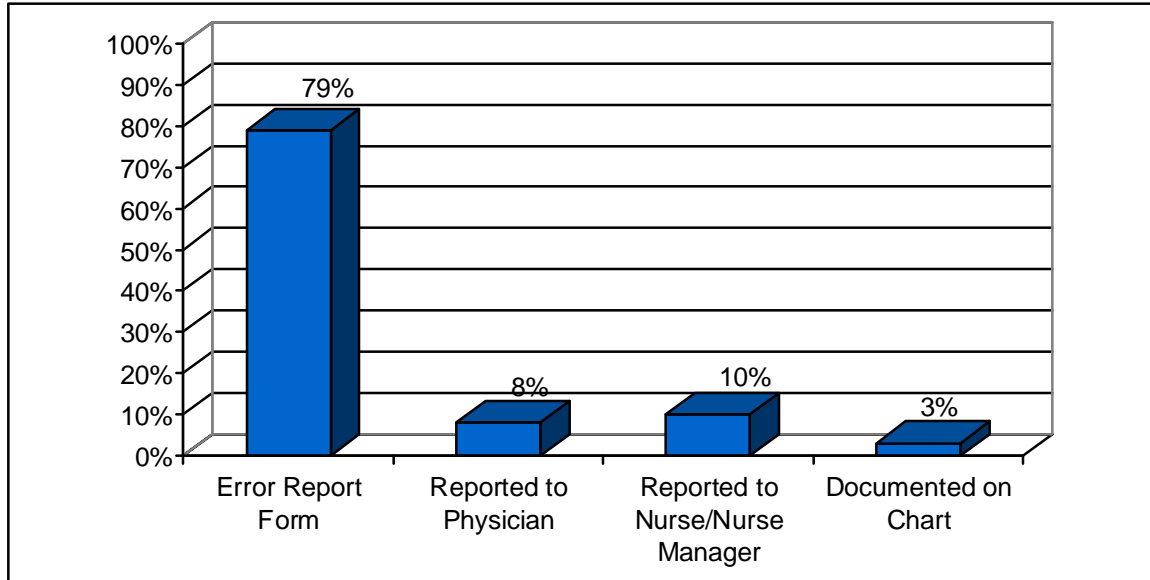
Figure 11: Perception of Safety



Medication Errors

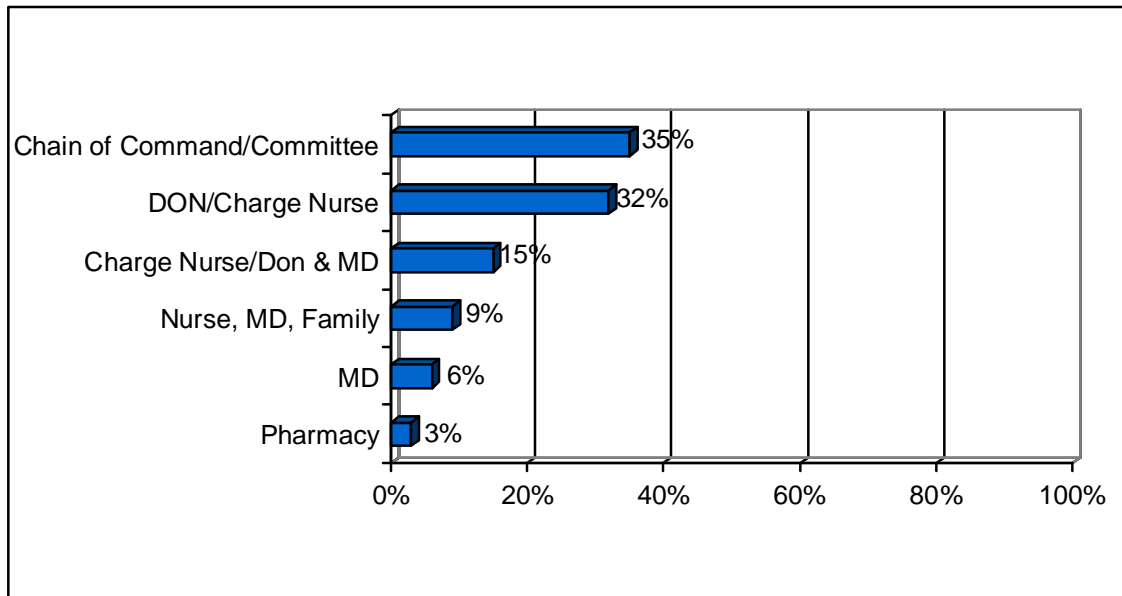
Forty organizations answered questions regarding medication errors. Organizations were asked what protocol was used to report medication errors. Most organizations indicated that an error report form was completed (see Figure 12).

Figure 12: Medication Error Protocol



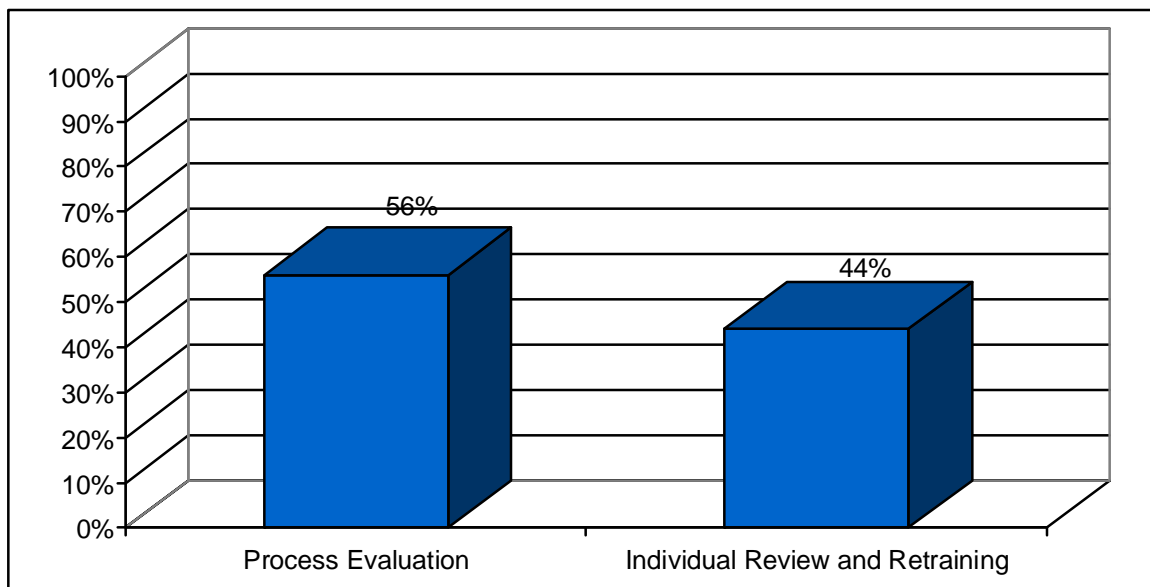
The greatest percentage of organizations utilized a chain of command such as Charge Nurse, DON, MD, Quality Assurance or Risk Management, or a committee such as the DON, MD and the Pharmacist (35%) (see Figure 13).

Figure 13: Medication Error Reporting



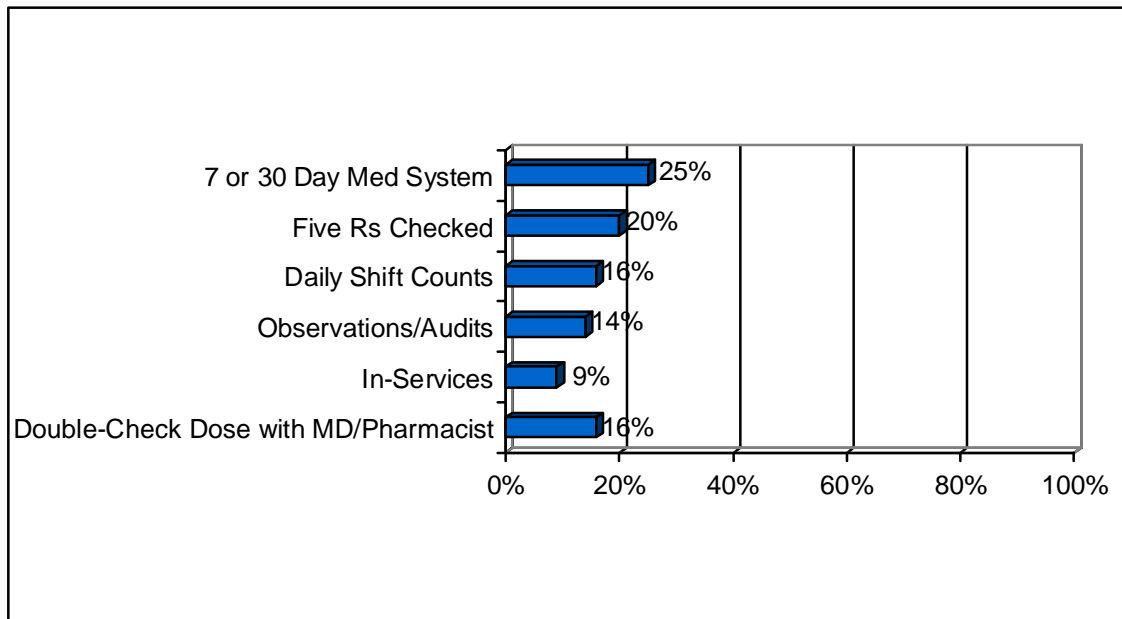
Organizations were asked what action was taken following an error. Organizations reported that first they ensured individual patient safety which sometimes involved reviewing the chart, double checking doses and consulting with the pharmacist. Organizations also indicated that follow-up depended on the severity of the error and whether it was part of a trend of errors. The greatest percentage of organizations indicated that they conduct a formal process evaluation or root cause analysis to determine the reason for the error (56%). This sometimes involved a medication error task force or a quality assurance committee. The remaining organizations (44%) indicated that they conducted individual review and retraining which sometimes included a research paper, in-services, retesting and audits. Several organizations indicated that they have a procedure for repeat medication errors, for example following three errors, the employee would repeat training (see Figure 14).

Figure 14: Medication Error Follow-up



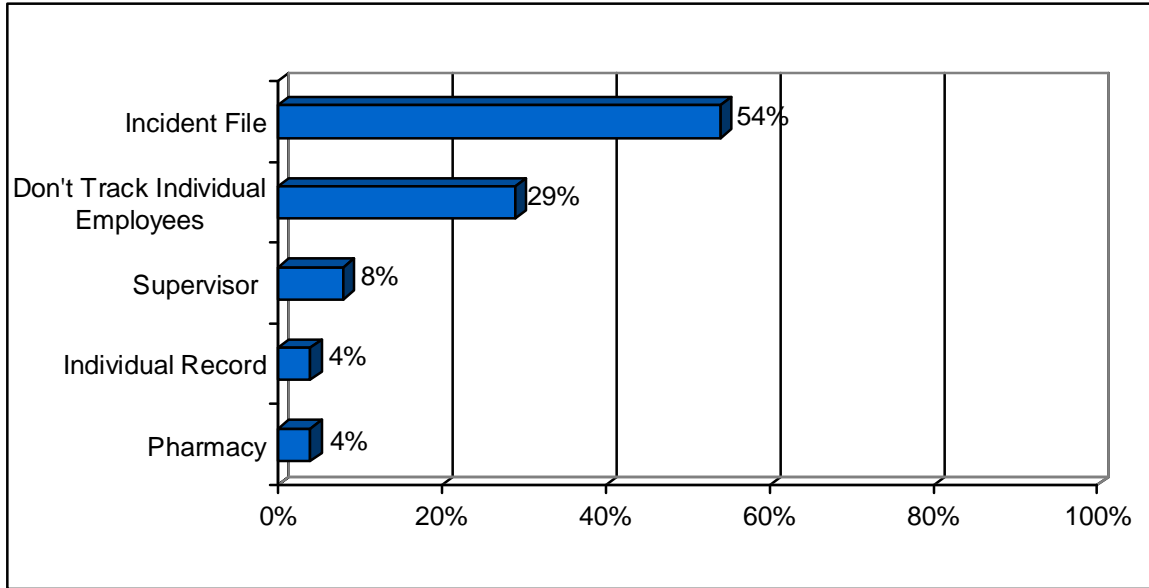
Organizations were also asked what checks and balances are used to prevent medication errors which resulted in a wide range of responses. Twenty-five percent indicated that they used a seven or 30 day system which could include the use of pre-set up blister packs (unit doses). Twenty percent emphasized the use of the five, six or seven R's (i.e., right patient, right medication, right dose, right route, right time). This also included double-checking of infant medications by two nurses and using two patient identifiers to ensure that the medication is given to the correct patient. Other methods included daily shift counts of medications, observations and audits by nurses, along with regular in-services and methods to ensure that the medication order from the medical provider is correct (repeat back and written orders) (see Figure 15).

Figure 15: Medication Checks and Balances



Organizations were also asked if they tracked medication errors by employees. Most organizations indicated that they keep medication errors in an incident file which is reviewed by quality improvement or consultants (54%). Twenty-nine percent of organizations indicated that they do not keep track of medication errors by employee (see Figure 16).

Figure 16: Medication Error Tracking



CONCLUSIONS AND POLICY IMPLICATIONS

Nineteen percent of organizations indicated that they employ medication assistants, although this is a small percentage, it appears to represent the utilization of medication assistants in North Dakota organizations in that few organizations are utilizing this type of employee- largely long-term care organizations. This may change in the next few years as the numbers of registered medication assistants continues to rise. The use of the lowest education level medication assistants (Medication Assistant I) during evening and overnight shifts when fewer health care professionals are available during medication crisis is problematic. The safety of this practice should be examined in conjunction with the staffing of other employees during these shifts (Are they predominately LPNs vs. RNs?). Medication assistants are assigned a large number of patients, although organizations have several mechanisms in place to avoid error and to enhance patient-safety including the use of pre-set up medication administration systems and shift counts of medications.

Sufficient data regarding the impact of medication assistant utilization on patient outcomes is unavailable. According to a 1992 survey of long-term care organizations (North Dakota Long-term Care Association, 1992), the use of medication aides in skilled organizations does not compromise patient safety. Fifty-three percent of organizations indicated that they felt that the use of medication assistants in their facility was very safe. Comments on the survey also indicated that medication assistants help by passing out medications so nurses can concentrate on patient care thereby taking a burden off the nurses and providing a valuable service. One facility indicated that the medication assistants have discovered more potential errors before they occur. However, all of these results are based on the perceptions of facility administrators and not on patient outcome information.

The wide variety of medication error reporting protocols indicates that some organizations have well-developed procedures in place for medication errors, whereas others do not. For example some organizations indicated elaborate protocols involving several levels of personnel through a chain of command, the use of a quality improvement/assurance committee and following up medication errors with process or cause analyses in order to mitigate future problems. Other organizations simply indicated the error in the patient chart, reported the error to the charge nurse and largely tracked errors and follow-up at the individual employee level.

Policy Implications

- Future studies should examine the impact of increased utilization of medication assistants on patient outcomes by tracking readmissions or unplanned clinic or emergency room visits that might be associated with a medication error.
- Future studies should also examine the effect of the utilization of different levels of medication assistants on evening and overnight shifts.
- Organizations should be encouraged to set up formal medication error reporting protocols and tracking of system-wide errors in order to facilitate quality improvement. This tracking should occur within in a non-punitive environment. A tracking system (such as Medmarx) could be suggested as a state-wide quality improvement effort.

Recommendations for the Board of Nursing

- Examine the possibility of the development of a formalized medication assistant program with standardized testing through a model forwarded by the National Council of State Boards of Nursing.
- Review the current standards and requirements for the three levels of medication assistant.
- Provide education seminars for organizations on the utilization of medication assistant according to level of training.
- Examine a continuing education requirement for medication assistants.

METHOD

The Medication Assistant Study was designed to obtain information about how medication assistants are currently utilized in health care organizations and whether this utilization provides safe, quality patient care. Ten questions were added to the North Dakota Nursing Needs Study Healthcare Facility Survey. To better understand current nursing workforce and medication assistant utilization a survey was sent to the Nursing Directors at all hospitals and long-term care organizations (nursing homes and basic care organizations) in North Dakota. A survey was also sent to the administrators of all regional public health organizations, home health organizations, and clinics in North Dakota.

Mailing lists for the organizations were derived from the 2005-2006 North Dakota Medical Services Directory. Participants received the survey by mail and were asked to mail the survey back to the Center for Rural Health in a postage-paid envelope. The survey was accompanied by a cover letter outlining the purpose of the study. The surveys were sent in October, 2005 and respondents were asked to return the survey within two weeks. Those participants that had not returned their survey within one month were given two more opportunities to respond.

- If the response contained a range of numbers, the response was converted to a median number (example: the range 2-4 was reported as 3)
- Organizations that did not employ a certain category of medication assistant or did not provide a response to the survey question were excluded from analysis on items relating to that specific category.

REFERENCES

Allied Health Schools. (2005) Become a Medication Assistant. Internet site
http://www.allalliedhealthschools.com/faqs/medication_assistant.php. Accessed on 8/1//2005.

North Dakota Board of Nursing (2005). 2004-2005 Annual Report

North Dakota Long-term Care Association (1992). Medication Aide Demonstration Project: Preliminary Report of Results of Research.

North Dakota Nurse Practices Act 43-12.1 and North Dakota Administrative Code Title 54.

APPENDIX A

DEFINITIONS CHAPTER 43-12.1 Nurse Practices Act

43-12.1-02 Definitions.

9. Unlicensed assistive person means an assistant to the nurse who regardless of title is authorized by the board to perform nursing interventions delegated and supervised by a nurse.

CHAPTER 54-01-03 DEFINITIONS

Section

54-01-03-01 Definitions

"Delegation" means the authorization for the performance of selected nursing interventions from a licensed nurse to an unlicensed assistive person.

"Medication administration" means the delivery of medication by a licensed nurse or an individual delegated to and supervised by a licensed nurse, to a client whose use of that medication must be monitored and evaluated applying specialized knowledge, skills, and abilities possessed by a licensed nurse.

"Medication assistant" means an individual who has a current registration as an unlicensed assistive person, has had additional training in administration and possesses a current registration from the board as one of the following medication assistants:

- a. Medication assistant I is a person who has completed all the requirements for a medication assistant program I. A medication assistant I is limited to employment in a setting in which a licensed nurse is not regularly scheduled.
- b. Medication assistant II is a person who has completed additional training past the medication assistant program I and met all the requirements for a medication assistant program II. A medication assistant II may be employed both in a setting in which a licensed nurse is regularly scheduled and a setting in which a licensed nurse is not regularly scheduled.
- c. Medication assistant III is a person who has completed two semesters of an approved nursing education program, each of which must have included a clinical nursing component, or a graduate of a board-recognized medical assistant program. A medication assistant III may be employed both in a setting in which a licensed nurse is regularly scheduled and a setting in which a licensed nurse is not regularly scheduled.

"Medication assistant program" means a program of study and clinical practice in the administration of routine, regularly scheduled medications which meets board requirements.

"Regularly scheduled presence of a licensed nurse" means that a licensed nurse is present a minimum of eight hours in a twenty-four hour period of time in a setting where nursing care is continuously delivered

"Routine, regularly scheduled medication" means the components of an identified medication regimen for an individual or groups of individuals with stable conditions which are administered on a routine basis and do not require determination of need, drug calculation or dosage conversion.

"Unlicensed assistive person registry" means a listing of all persons who are authorized by the board or included on another state registry, which has been recognized by the board to perform nursing interventions delegated and supervised by a licensed nurse.

APPENDIX B

Board Approved Medication Asst I Programs

Minot State University
ND Center for Persons with Disabilities
500 University Ave W
Minot ND 58707
(701) 858-3580
1-800-233-1737

Sunrise Assisted Living
Karrington Assisted Living
114 N 3rd St
Bismarck ND 58501
(701) 223-9505

The Evangelical Lutheran Good Samaritan Society
4800 W 57th Street
PO Box 5038
Sioux Falls, SD 57117-5038

ND Department of Corrections and Rehabilitation
3303 E Main PO Box 1898
Bismarck, ND 58502-1898
701-328-6390

Board Approved Medication Asst II Programs

Bismarck State College
1500 Edwards Ave
PO Box 5587
Bismarck, ND 58506-5587
(701) 328-9841

MCI Health Systems
300 N 7th Street
Bismarck, ND 58501
(701) 663-4267

Grafton Developmental Center
Department of Human Services
W 6th St
Grafton, ND 58237
(701) 352-4200

Hi-Acres Manor
1300 2nd Place NE
Jamestown, ND 58401-3709
(701) 252-5881

Minnesota State Community and Technical College
1900 28th Ave S
Moorhead, MN 58560-4899
1-800-426-5603

Missouri Slope Lutheran Care Center
2425 Hillview Ave
Bismarck, ND 58501
(701) 223-9407

ND State College of Science Distance Education
Skills & Technology Training Center
1305 19th Ave N
Fargo, ND 58502
(701) 231-6905

Minot State University - Bottineau
105 Simrall Boulevard
Bottineau, ND 58318-1198
(701) 228-2277

Baptist Home, Inc
1100 E Boulevard Ave
Bismarck, ND 58501
(701) 223-3040

St. Luke's Home
242 10th St W
Dickinson, ND 58601
(701) 483-5000

APPENDIX C

MEDICATION ASSISTANT I AND MEDICATION ASSISTANT II DISTINGUISHING BETWEEN THE PROGRAMS

REQUIREMENTS	MEDICATION ASSISTANT PROGRAM I	MEDICATION ASSISTANT PROGRAM II
Time Frame	No designated time frame of course study	Minimal time frame of 80 hours 40 hours Theory 8 hours Laboratory 32 hours Clinical
Setting	The Medication Assistant Program I is applicable to settings in which a licensed nurse is not regularly scheduled.	The Medication Assistant Program II is applicable to settings in which a licensed nurse is not regularly scheduled.
Instructor	The registered nurse is responsible for the development of the theory, laboratory component, and supervision of the program. All medication administration as a part of the clinical learning experience must be supervised by a licensed nurse.	The registered nurse is responsible for the development of the theory, laboratory component, and supervision of the program. All medication administration as a part of the clinical learning experience must be supervised by a licensed nurse.
Curriculum	<ol style="list-style-type: none"> 1. Medication concepts 2. Roles, responsibilities, legal aspects, and limitations of medication assistant I and licensed nurse 3. Methods of medication packaging 4. Storage of medication 5. Administering and charting medications 6. Standard precautions for infection control 7. An overview of the major categories of medications and body systems 	<ol style="list-style-type: none"> 1. Medication concepts 2. Roles, responsibilities, legal aspects, and limitations of medication assistant II and licensed nurse 3. Methods of medication packaging 4. Storage of medication 5. Administering and charting medications 6. Standard precautions for infection control 7. Major categories of medications and body systems, including: <ol style="list-style-type: none"> a. Cardiovascular b. Endocrine; c. Gastrointestinal d. Integumentary e. Musculoskeletal f. Nervous; g. Reproductive h. Respiratory; i. Sensory; and j. Urinary.
Clinical	Medication assistant I students shall demonstrate satisfactory performance of medication administration as evidenced by satisfactory completion of the clinical skills checklist.	Medication assistant II students shall demonstrate satisfactory performance of medication administration as evidenced by satisfactory completion of the clinical skills checklist.