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# Does Medication Error Reporting Increase With Anonymity?

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Does Medication Error Reporting Increase With Anonymity?

By

Kristina McCall

A thesis/project submitted to the faculty of  
Gardner-Webb University School of Nursing  
in partial fulfillment of the requirements for the  
Degree of Master of Science in Nursing

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2010

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## Abstract

Medication errors have been a long and growing problem within all health care areas. Prevention and education is the key to prevent the errors from occurring. All efforts must be made to achieve an overall goal of an error-proof health care society. The purpose of this study was to determine if the anonymity of medication error reporting would make a difference in the amount of medication errors reported. Research has shown that many nurses and health care professionals find it stressful to report an error due to fear of disciplinary action or blame; a no-blame culture must be implemented into our health care society. By making the reporting process anonymous nurses and health care professionals may find it less stressful to report a medication error, Neuman's system model was used as a conceptual framework regarding the feelings of the healthcare professional when the medication error occurs.

Findings from this study showed a decrease in the amount of medication errors reported once the reporting process became anonymous. The study was limited in that the results tallied were from the conception of the new anonymous reporting program. Perhaps the study could have shown different results after the anonymous program had been used for more time than just three months. Reporting of medication errors, whether it is anonymous or not, should be encouraged within the health care system so that we can further educate how to prevent medication errors from occurring in the future.

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## CHAPTER I

### Introduction

Medication errors can be a serious problem in the health care system. Some errors can even become life threatening, as well as prolong a hospital stay for the patient. It is important to find ways to prevent medication errors. While this may not be an immediate goal, it can be something to strive for in the future. Determining causes of errors and how they are made is the key to learning how to prevent them. There are many aspects to consider regarding a medication error, but the purpose of this study is to look at the proposal that the reporting of a medication error may be increased if the reporters name is anonymous. Nurses and health care professionals are often hesitant to report all errors made due to fear of disciplinary action, but it is believed that by making the reporting process anonymous that the process will increase, and by increased reports we can learn from past mistakes to achieve our long-term goal of preventing medication errors all together in the future.

### Statement of the Problem

Studied show that “Medication errors are avoidable actions that may cause or lead to wrong medication use or patient harm” (Madegowda, Hill, & Anderson, 2007, p. 175). Medication errors can be related to a nurse’s personal practice, the available supplies or a breakdown in the communication of prescribing or drug company information. Education and distraction can certainly play a part in a medication error as well. Medication errors are caused from many aspects of care, including the pharmacist, doctor

and student nurses involved; there are many avenues the patient's medication may take before it actually reaches the patient (Madegowda et al., 2007, p. 175).

It is important to recognize the cost caused from medication errors. "Total national costs are estimated to be 37.6 billion to 50 billion dollars for adverse events, and 17 billion to 50 billion dollars for preventable adverse events" (To err is human: Building a safer health system, 1999). The Institute of Medicine (IOM) recently reported that "preventable medication errors injure at least 1.5 million people in hospitals alone and cost a traditional amount of 3.5 billion dollars annually" (IOM, 2006).

Adverse events that are preventable are one of the leading causes of death in the United States. "As many as 98,000 Americans die in hospitals each year as a result of medication errors" (Madegowda et al., 2007, p. 177). Most medication errors happen during the administration of the medication by nurses. The administration of a medicine is the last phase done by the nurse. Because of the increased stress in the role as a nurse it may be more stressful to ensure that the five steps in the administration of medications are performed: (a) the right drug, (b) the right dose, (c) the right route, (d) the right time, and (e) the right patient (Madegowda et al., 2007, p. 176).

Reporting of medication errors is challenging, it causes more time for the nurse to do the paperwork involved. Nurses often take for granted that not making an error is equal with good nursing, and they may fail to report medication errors if no actual harm has come to the patient. Some things associated with medication errors include low staffing numbers, interruptions or distractions by others while passing medications, knowledge deficit (IOM, 1999), and "seasonality" (winter months when daylight is the

least) (IOM, 1999). Environmental stressors can also play a role, such as room temperature, nurses may feel fatigued if the room is too hot, or if there is too much noise in the room. Lacks of sleep and fatigue can also be associated with medication errors (Madegowda et al., 2007, p. 176).

It is clear that medication errors are a significant and growing problem in health care. The American Society of Health-System Pharmacists (ASHP) has conducted and reported results from national surveys over many years. Nursing, however, is primary source involved in medication administration, and this profession has reported inadequate research (Madegowda et al., 2007, p. 176). It has been shown that research reported by pharmacists tends to focus on dispensing of medication instead of medication administration (Madegowda et al., 2007, p. 176). All medication errors should be reported to learn from mistakes that are made and pursue a future of safe medication administration. Some nurses may feel ashamed or too embarrassed to report a medication error; there is even fear of legal consequences. This pattern is changing; open discussion of medication errors allows better analyses to design a system that will be resistant to errors. Many can see the value of reporting medication administration hazards before medications actually reach patients ("Tips for increasing error reporting", 2009).

Because medication errors are a significant and growing problem in health care, action needs to be taken to eliminate medication errors and improve nursing care, reduce hospital costs, and improve patient safety and satisfaction (Madegowda et al., 2007, p. 180). Medication errors can be a significant concern affecting patient safety in the United States hospitals and create dangerous consequences for the patient. Every action a

nurse does when it comes to patient care involves a possible time for error and puts patient safety at risk. However, this is particularly true when it comes to medication errors. We must first understand the cause of medication errors in order to work toward preventive measures. As mentioned before certain things can cause medication errors such as, education deficits, stressors, like time and staffing shortages and these are things that can be corrected. Bailey, Engel, Luescher, & Taylor (2007) did a study to focus on the reporting of medication errors and how anonymity may or may not increase the likelihood of reporting the error. It is the hope that if the nurse who does the medication error can report the error in such a way as to remain anonymous, that the likelihood of reporting will increase so that more can be learned as to the cause of medication errors.

#### Conceptual/Theoretical Framework

The Neuman Systems Model originates from a general systems theory. Its focus is on the client as a system, which may be an individual (such as a patient or nurse), family, group, or group of people and on the client's response to stressors. "The client system includes five variables (physiological, psychological, sociocultural, developmental, spiritual), and is conceptualized as an inner core (basic energy resources) surrounded by concentric circles that include lines of resistance, a normal line of defense, and a flexible line of defense" (Tomey & Alligood, 2006, p. 336). It is considered that each of the five variables is part of the concentric circles. "Stressors are tension-producing stimuli which may be intrapersonal, interpersonal, or extrapersonal in nature" (Tomey & Alligood, 2006, p. 336). The Neuman Systems Model is an open systems model that sees nursing as being mainly concerned with defining proper accomplishment in stress-related

situations or possible reactions of the client, patient, or nurse; since environmental exchanges are shared, both client and environment may be positively or negatively affected by each other (Neuman, 1989, p. 11).

The five variables have unstable degrees of development and wide range of interactive style and prospective. The term, physiological refers to bodily organization and meaning. Psychological refers to mental processes and associations. Sociocultural refers to both social and cultural functions. Life development processes refers to a developmental stage. Spiritual refers to spiritual belief or influence taken by the client. The psychological, sociocultural, and life development variables can be used to determine what a nurse is experiencing when a medication error is committed and if anonymity relieves this anxiety to a point. For this study, the psychological, sociocultural, and life development variables refers to how the nurse will react when a medication error is made and adjust accordingly.

Although no articles regarding Neuman's model related to medication errors could be found, her systems model can be useful in determining how a nurse's anxiety may play a role in the reporting of the error, and the nurse's perception of the importance of reporting medication errors to prevent future occurrences.

### Purpose and Rationale

The purpose of this study was to determine if anonymity affects the reporting of medication errors. It is believed that most medication errors are under-reported due to fear of disciplinary action. It is possible that the reporting of medications errors will

increase with anonymity and that more education can be learned from the errors that occur to prevent and reduce medication errors in the future.

## CHAPTER II

### Literature Review

A limited literature review was accomplished using the Cumulative Index to Nursing Allied Health and Literature (Cinhal) and Health Source Database. The keywords used were medication errors, anonymous medication error reporting, medication error reporting, and preventing harm to patients during medication administration. The amount of research is abundant concerning medication errors and the reporting of medication errors. This review is particularly interested in the research of anonymous reporting of medication errors.

#### *Medication Errors*

Madegowda (2007) did a retrospective, non-experimental descriptive study comparing and contrasting three nursing shifts in regards to the number of reported medication errors, the units on which they occurred, and the types and severity of errors. The study was conducted over a 12-month period in a 100-bed rural Midwestern hospital. One hundred, thirty-three errors occurred over a 12 month period. There were several findings in this study: one being that most errors happened on Friday during the second shift and in the month of January; the greatest number of medication errors occurred during the winter months when there is the least day-light. The route most often reported was with IV administration. The majority of medication errors found in this study were omissions. Another finding of the study showed that a medications error was due to no pharmacist availability after 9:00 pm on the evening or night shift to check medication orders.

The purpose of a qualitative study by Potylycki et al., (2006) was to recognize the practice and attitude toward medication error incidents and the practice of reporting them. The report was done at a Pennsylvania Hospital that consisted of three campuses that treated over 40,000 inpatients a year. A team was developed to help produce a nonpunitive culture toward the reporting of medication errors. A baseline survey was conducted to determine underlying practices and attitudes on medication errors and medication error reporting. Based on the findings, an implementation to modify clinical and administrative processes was developed. To measure the findings a pre and post test questionnaire was developed to determine staff practices and attitudes on medication error reporting. The baseline survey took about ten minutes to complete and had 45 questions using a five-point Likert scale. The post-survey questionnaire was similar, but had an additional three questions regarding the nonpunitive patient safety policy. The questionnaire was given to all staff members who prepare, administer, transcribe, educate, or oversee medication administration. A total of 665 staff members completed the survey over a three-year period. The findings showed that medication errors with more serious injury to the patient are more likely to be reported than those with less severe outcomes. A primary barrier to medication error reporting was the fear of disciplinary action. The results of the post-survey after education and communication were offered by administrative staff showed an improvement. Reporting a medication error was done without fear of disciplinary action by the supervisor, and the staff felt they could openly discuss and learn from the incident after attending an educational workshop (Potylycki et al., 2006).

Low and Belcher (2002) did a retrospective comparative design study in which they compared medication error rate for each one thousand medication dosages before and after the implementation of the bar code administration system (BCMA) to determine the error rate for the BCMA system. The study was done on two medical units at a Midwestern government hospital over a 12-month period. The study explored the difference in a medication error rate 12 months after implementation of the BCMA (Low & Belcher, 2002, p. 179). The Technology Assessment Model was used; it is a five-step model which includes need, safety, efficacy and effectiveness, economic appraisal, and social impact. Evaluating the effect of new technology as it relates to medication errors was the focus of the study. The participants used in the study included a total of 38 registered nurses and 13 licensed practical nurses; this was unchanged during the 12-month periods of the study. The medication error rate was expected to be lower after the BCMA implementation, but the results showed a slight increase (18%). This may be explained by many factors: the variation in the reporting system, the staff may have been unfamiliar with the technology, medication errors are not correctly reported, or the BCMA did not make a difference in the medication error rates. Before the implementation of the BCMA, the nurses were responsible for reporting a medication error, but after implementation, the computer system did the reporting. The findings suggest that an increase in medication error rates may be due to a difference in how medication errors are reported. The results probably do not indicate an increase in medication errors, but instead an increase in the number of the errors reported (Low & Belcher, 2002).

*Preventing Harm to Patients during Medication Administration*

Covell and Ritchie (2009) used a concurrent mixed-method design to explore how nurses react to a medication error to find a plan that nurses believe may help improve reporting of medication errors in a hospital. The study was held at a 1000-bed university health center in a large city in eastern Canada. The health center consists of five hospital campuses and has around 3,000 registered nurses employed. A convenience sample of 50 registered nurses staffed in different clinical settings was used; ten nurses from each campus. Each nurse held a bachelor's degree in nursing. The data collection interview was from 45 to 60 minutes long and then the questionnaire was given to the participant. The nurse was asked to remember a previous medication error, give the scenario of the events and answered five open-ended questions about how they reacted to the incident. The results showed that 71% of the nurses indicated that they believed that less than 60% of medication errors were reported on their units, and expressed that this was mainly due to fear of disciplinary action being taken against them. The participants' responses to the questionnaires and interviews showed that the nurses were aware that medication errors were under-reported and factors within the work environment may have contributed to their decision to report a medication error. The study also found the type of medication error is influenced by the facilities definition of a medication error. The findings suggest that when nurses make a medication error, they will use a decision-making process before reporting the error (Covell & Ritchie, 2009).

### *Medication Error Reporting*

A study by Elnour, Ellahham, & Qassas, (2007) reported the benefits of implementing a computerized medication safety program called “Med Safe Tool” to report all types of medication errors. The MedSafe tool is used to track documentation of medication errors and adverse drug reactions. The MedSafe tool was designed by the Institute of Safe Medication Practices (ISMP) of Canada to encourage voluntary reporting of medication errors and it is hoped that health care providers can learn from past mistakes. The study was done at Al Ain Hospital, in the United Arab Emirates which has 450 inpatient beds and serves as a teaching hospital to nursing students. A random sample of 370 inpatient nursing staff as a control group completed a pre and post, self reporting questionnaire and, in-service, training, and educational materials were offered. The in-services were conducted by a pharmacist with ten nurses per class, the class was held for 1 ½ hours each morning. A new medication safety program (Med Safe Tool) was implemented in all the inpatient nursing stations. The production of medication errors reported was analyzed. There was also a control group of 185 nurses that used the paper incident reporting method during the same time period. The results showed an increase in the number of medication errors reported using the Med Safe Tool, most errors occurred during the administration phase of a medication pass. By using the reporting tool a no-blame culture was noticed toward reporting of medication errors. The findings showed that the main reason for under reporting of medication errors were time constraints and staffing shortages. The total number of medication errors reported using the Med Safe Tool were 98 versus 11 for paper reporting during the same time period.

The results suggested the use of computerized medication systems, bar coding and unit dose dispensing to prevent further medication errors (Elnour et al., 2007).

A descriptive correlational study by Mayo and Duncan (2004) described nurse's perceptions about medication errors. The study was designed to examine what nurses believe constitutes a medication error, what is reportable, and what barriers to reporting exist. A random sample of five thousand registered nurses was selected in several settings. The population and sample were from the United Nurses Association of California practicing in 16 Southern California acute care hospitals. Work settings consisted of private, government, military, and health maintenance organization hospitals. The Modified Gladstone instrument was used to measure the study. A self-report survey method was used to collect data. Five thousand surveys were mailed with the hope of a final sample of 1000 participants. Nine hundred eight-three nurses responded, representing a 20% return rate. The findings revealed that there are differences in the perceptions of nurses about the causes and reporting of medication errors. Causes included illegible physician handwriting and distracted, tired and exhausted nurses. Only 45.6% of the 983 nurses believed that all drug errors are reported, and reasons for not reporting include fear of manager and peer reactions (Mayo & Duncan, 2004, p. 209). It is estimated that 95% of medication errors are not reported due to the staff fearing punishment (Mayo & Duncan, 2004, p. 210). The study called attention to the need to clarify with nursing staff what constitutes a medication error.

Luk, Ng, Ko, & Ung (2008) used a qualitative approach to evaluate medication errors in clinical areas of a general hospital in Macau, China hospital. Seven registered

nurses who were involved in a medication error were asked to participate in an in-depth interview. The interviews were taped, transcribed and analyzed using content analysis. Each interview lasted between one and two hours. During the interviews the participants were asked about their history of medication errors. Questions such as: (1) a short explanation of the incident, (2) reactions of the participants with regard to the reaction of the patient, (3) staff and senior staff members feelings about the incident, (4) an explanation of patient supervision after the incident, (5) the consequences and education learned from the incident, (6) an opinion of the incident reporting system, and (7) suggestions for improving the system. All seven participants were female, with working experience between one to five years; workers in different areas include medical-surgical, pediatric, outpatient, and emergency departments. All participants were counseled afterwards by both their immediate supervisor and nursing administrators regarding their feelings and attitudes about medication error reporting. The findings of the study showed that no serious harm was done in the reported medication errors and patients were managed well after the incidents, with no related complaints from the patient's families. The nurses experienced fairness and respect during the examination of the incidents by administrative staff.

#### *Anonymous Medication Error Reporting*

Grant and Larsen (2007) did a comparative study by evaluating a voluntary, anonymous medication error reporting system. This system looks mainly at reporting of near-miss and patient harm events, and an assessment of patient harm by the bedside nurse in a pediatric intensive care unit (PICU). The study was conducted in a 32-bed

combined medical and surgical PICU located in a university-affiliated tertiary care facility. The Patient Safety Report (PSR) was developed which is an anonymous method for collecting when medication errors, near-misses, or patient harm occurs. This tool was developed from review of past PICU-based incident reports and clinical experience from a group of PICU providers. The PSRs are color-coded cards in six different categories that are related to different areas of PICU patient care. The categories are laboratory, medications, equipment, patient care/dietary, patient transport, and respiratory care. The study occurred during an 18-month time frame and before beginning the PSR the PICU staff received a one-on-one education program, which defined levels of patient harm and the need to report near-miss events. A series of educational sessions was given for all patient care providers giving them the goals of the PSR.

After nine months of data collection, the health care providers realized there were frequent reports of patient harm so the PSR was modified to assess the degree of patient harm. The assessment scale used was “mild harm”, “moderate harm”, and “severe harm” depending on the error type. The incidents collected in the PSR were compared with the traditional error reporting that was done on paper, which is not anonymous and is entered into a database for comparison. During the total 18-month study period, a total of 1,119 PSRs were reported and 590 paper incidents reported. Staff completed the paper report with the PSR 27% of the time. There were 698 near-miss events reported in the PSR system and no near-miss events reported in the traditional paper system (Grant & Larsen, 2007, p. 217).

The main findings in this study are that anonymity in the PSR system stresses problems with communication, patient identification, and patient transportation, and the PSR does capture near-miss events. The study showed that the PSR is more beneficial than the traditional paper format in that near miss events were reported, patient harm was known at the time of the event, more events are reported, and the two are different in frequency and category of event (Grant & Larsen, 2007).

A study by Patrician and Brosch (2009) examined nurse's reasons for medication errors, reasons for not reporting the error, and the perceived practice of reporting on a medical unit. The study compared anonymous medication error reports with those from institutional reporting mechanisms. Quality of the work environment, staffing ratios and workload were evaluated to determine the relation with perceived error-reporting practices. The study was descriptive and correlational and included surveys, formal unusual incident reports, and actual staffing data. The data was collected in a large military hospital over a four-week period.

The cross-sectional survey had two instruments: the Medication Administration Error (MAE) survey and the Revised Nursing Work Index (NWI-R). The MAE survey is a 77-item instrument that measured nurses' perceptions of reasons for medication errors, the extent of the unreported medication error, and reasons for not reporting the medication error. The nursing work environment was measured with the NWI-R survey. Each nurse answered whether they agreed with the statement "This is present in my current job situation" using the Likert Scale. The longitudinal surveys consisted of coupon books that were developed to coincide with anonymity of the medication error or

near-miss reporting process. The nurses could complete the coupon anonymously and place in a locked box on the unit. There was a number or code on each coupon to determine which unit the coupon originated from, no attempt was made to match the coupon with the nurse so that anonymity was observed. The overall response rate for the cross-sectional survey was 16% and 11% for the longitudinal survey using the coupon books. It was noted that the response rates for the coupon books steadily declined over the four-week period. The number of coupons returned (462) showed that 108 had reports of errors, nurses committed 75 of the errors, while doctors and pharmacists committed the other 33 errors (Patrician & Brosch, 2009).

#### Summary of Literature Review

The previous studies reviewed show that it is a serious and detailed problem. The literature review found that tools have already been put into place by many facilities in the hopes of preventing medication errors. Computer order entry and bar coding are among the newest technologies designed to prevent medication errors since communication and patient identification have been found to contribute most to medication errors. If the reporting of a medication error can be increased to show more accurate results of how serious the problem is, it is hopeful that education can be put into place to eventually prevent medication errors in the future. One of the most common issues when it comes to reporting an error is fear; a no-blame and non-punitive culture has been applied to many areas of the health care system. It is believed that by making medication error reporting anonymous, that there will be less fear of blame and disciplinary action. The overall goal is to reduce the occurrence of medication errors, not

to place blame. The findings of this study can help guide future endeavors to reduce medication errors.

## CHAPTER III

### Methodology

#### Research Design

A descriptive survey design was used in this study to determine if changing medication error reporting to an anonymous report would cause the reporting of the medications errors to increase. Data used by the researcher in this study was retroactive data collected by the hospital using a Medmarx computer system called “Risk Master”.

#### Setting

This researcher used retroactive data from medication error reporting in 2009 and compared to that of 2010 in the same time period, March to May. The data was obtained from a trauma hospital in Western North Carolina that has over 800 medical beds and employs over 1,800 registered nurses and over 650 medical staff. The inpatient units include medical, surgical, women’s services, mother/baby services, orthopedics, trauma, and four large ICU units. The average daily consensus of the units can range from 15 to 40 beds.

#### Sample

The data was collected using a Medmarx computer system called “Risk Master”. The entire hospital medical staff including physicians and nurses reports their medication errors using the Medmarx computer system. The data was collected with specific areas of concern as to when the errors occurred: During prescribing, dispensing, documentation, or administering of the medication.

## Instrument

No instrument was used to measure this study, as retroactive data was compiled to notice differences in medication error reporting once it became anonymous. All staff were notified of the change in the reporting of a medication error and it was stressed that all error reporting would be anonymous in hopes that this method would increase reporting of errors so that healthcare providers can learn from past mistakes and prevent them from happening in the future.

## Ethics and Procedure

Permission to use the data was granted by the Institutional Review Board (IRB) of the studied hospital (Appendix B), along with the approval of the IRB of Gardner-Webb University (Appendix A). Before making the medication error reporting system anonymous, staff were invited to attend a short in-service explaining the differences between the old and new method of reporting medication errors. It was noted that the method remained the same with the exception of anonymity being added. The medication error reporting using the anonymous feature went “live” on March 1, 2010. Data was analyzed to determine what statistical differences are noted from the same time period during the previous year, March to May.

## Data Collection

A comparison of the data from the year of 2009 to the year of 2010 was compared to see if by adding anonymity, the medication error reporting would increase. The staff reports a medication error using the Medmarx computer system. There are several aspects of the report: (1) cause of error, (2) type of error, (3) medication process node (when in

the medication administration process did the error occur), (4) staff type, and (5) day of the week the error occurred. The results are tallied on a monthly basis. The study looked at the overall numbers of the total of medication errors reported, and when during the medication process that the error occurred.

#### Data Analysis

Data was taken from the original study data and entered into a personal computer by the researcher of this study. The Statistical Packages of the Social Sciences (SPSS) was used for the analysis of the data. The data showed a decrease in the amount of errors reported in 2009 to that of 2010. Data of when the error occurred in the medication administration process (prescribing, administering, documenting, or dispensing) was also analyzed.

## CHAPTER IV

### Results

The purpose of this study was to determine if anonymity would increase the reporting of medication errors. The study was aimed at the amount of medication errors and if the cause during the medication process of the error changed between two consecutive years during the same time frame of three months.

#### Descriptive/Demographic Data

The data consists of medication error reporting from March to May of 2009 compared to that of 2010. The reporting of medication errors became anonymous beginning in March of 2010. The results consist of a total number of errors reported in the above mentioned time frames. The data also includes at what point during the medication process that the error occurred; during prescribing, documenting/transcribing, dispensing, administration, or does not apply (Table 1). Although this data is relevant, the overall/total number of errors reported was analyzed to support or disprove that medication error reporting will increase once the reporting process became anonymous.

The data collected by the researcher of this study was entered and analyzed using the Statistical Package for the Social Sciences, version 17. Table 2 below shows the mean and standard deviation for the total number of medication events as well as for each type of medication event for the three months of each of the years included in this study. The data showed a decrease in the amount of errors reported in 2009 to that of 2010. Other data like when the error occurred in the medication administration process was also analyzed.

Table 1

*Number of Errors by Method*

<b>Method</b>	<b>March</b>	<b>March</b>	<b>April</b>	<b>April</b>	<b>May</b>	<b>May</b>
	<b>2009</b>	<b>2010</b>	<b>2009</b>	<b>2010</b>	<b>2009</b>	<b>2010</b>
<b>Prescribing</b>	23	21	10	13	25	11
<b>Transcribing</b>	12	9	6	14	10	10
<b>Dispensing</b>	22	35	7	10	8	15
<b>Administering</b>	86	51	73	51	64	36
<b>Does Not</b>	11	8	15	3	9	1
<b>Apply</b>						
<b>Totals</b>	154	124	111	91	116	73

Table 2

*Mean number of medication errors by method*

<b>Method</b>	<b>Year</b>	<b>N</b>	<b>M</b>	<b>SD</b>
<b>Total</b>	2009/2010	3/3	127.00/96.00	23.516/25.865
<b>Prescribing</b>	2009/2010	3/3	19.33/15.00	8.145/5.292
<b>Documenting</b>	2009/2010	3/3	9.33/11.00	3.055/2.646
<b>Dispensing</b>	2009/2010	3/3	12.33/20.00	8.386/13.229
<b>Administering</b>	2009/2010	3/3	74.33/46.00	11.060/8.660
<b>Does Not</b>	2009/2010	3/3	11.67/4.00	3.055/3.606
<b>Apply</b>				

The data showed that there was some statistical significance to the cause of the error during the medication administration process while there was minimal significance in the overall amount of the reported errors. Particularly in the category of dispensing (8% increase), administering (30% decrease), and those reports that do not apply (70% decrease). No significance was found with the other listed variables in the study.

An independent samples t-test was conducted to evaluate the hypothesis that error reporting will increase once the reporting becomes anonymous. The test was not significant at an alpha level of .05 for the total number of errors reported between 2009 and 2010,  $t(4) = 1.536$ ,  $p = .0995$ . The associated 95% confidence interval for the difference in means indicates the same results since zero is included within the interval: (-25.036, 87.036). Though it would seem intuitive for there to be an increase in error reporting once it became anonymous, the results show otherwise.

An independent samples t-test was conducted on each of the sub-categories of error reporting. For prescribing errors, the associated t-test was not significant at an alpha level of .05,  $t(4) = .773$ ,  $p = .242$ . For documenting errors, the associated t-test was not significant at an alpha level of .05,  $t(4) = -.714$ ,  $p = .258$ . For dispensing errors, the associated t-test was not significant at an alpha level of .05,  $t(4) = -.848$ ,  $p = .222$ . For administering errors, the associated t-test was in fact significant at an alpha level of .05,  $t(4) = 3.493$ ,  $p = .013$ . The t-test for the errors that were classified under the “Does Not Apply” header was found to be significant at an alpha level of .05,  $t(4) = 2.810$ ,  $p = .024$ .

Overall the results indicate that making error reporting anonymous did not increase the total number of errors reported. However there was an increase in the number of errors reported in two of the sub-categories, namely “Administering” and “Does Not Apply”.

## CHAPTER V

### Discussion

#### Interpretation of Findings

This study examined the total amount of medication errors reported both before and after anonymity was implemented. The study also looked at areas of when during the medication process that the error occurred. There are some limitations to the study, particularly the data was collected for only three months and begun at the conception of the new anonymous reporting process. It is also difficult to determine if the overall amount of medication errors decreased or if the amount of medication error reporting decreased; surveying the staff as to their use of the new computer system would have been beneficial.

#### Implications for Nursing

Medication errors occur every day due to human error, there is no fool-proof way to prevent a medication error. Education must be the main focus to prevent medication errors in the future. If data is collected and analyzed, and education is the focus, then the problem areas can be addressed. There must also be follow-up and accountability without causing the nurse or health care professional to be fearful of reporting the medication error. We must be open to correcting the root of the problem in order to reach the overall goal of prevention. This study showed a decrease in the amount of medication errors reported. This may be due to an actual decrease in the amount of medication errors made, or may be due to a decrease in the amount of nurses and health care professionals making a report of the error. We need to encourage reporting of all errors, no matter how small

they may be so that we can learn from past mistakes. Some small errors reported may help to prevent larger errors occurring in the future. It is important to educate staff to report all medication errors no matter what the degree of the medication error.

#### Implications for Further Research

This study focused on the number of medication errors reported both before and after the reporting process became anonymous. This was implemented in the hope that by changing the reporting process, nurses and health care professionals would perceive a no-blame culture. Further studies will need to be compiled to determine if this is in fact true, as there were limitations to this study. Medication errors have been a growing concern in the health care industry and ongoing research must be done to reach the overall goal of no medication errors in the future. While this study did tally numbers and compare two separate years, it is believed that further research should be done to determine the use of the computer system to report the error. It is possible that medication errors are being made, but not reported, possibly due to time constraints. As a follow-up, more research could be compiled to determine what specific educational needs there are to prevent medication errors from happening in the first place, as education may be the key in prevention. In the future the process of reporting an error will be less time consuming to encourage use of a medication error reporting process.

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## Appendix A

**Institutional Review Board**

509 Biltmore Avenue, Asheville, North Carolina 28801  
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www.missionhospitals.org



**Date:** March 22, 2010

**To:** Kristina McCall, BSN  
**From:** Mission Health Institutional Review Board

**Study Title:** [161425-1] Does medication error reporting increase with anonymity?  
**IRB Reference #:** 10-03-738, NF  
**Submission Type:** Other

**Action:** Determination of Exempt Status  
**Decision Date:** March 22, 2010

On March 22, 2010 the Mission Health Institutional Review Board reviewed your proposed study, **"[161425-1] Does medication error reporting increase with anonymity?"** via Exempt Review and determined that this project is EXEMPT FROM IRB REVIEW according to federal regulation.

We will file a copy of this correspondence in our office.

You must notify the IRB of any changes in this project that may alter the IRB's determination.

If you have any questions, please contact Cherie Stump at 828-213-1105 or [cherie.stump@msj.org](mailto:cherie.stump@msj.org). Please include your study title and reference number in all correspondence with this office.

This letter has been electronically signed in accordance with all applicable federal regulations and a copy of this letter is retained within the electronic study folder and Mission Health System records.

cc: file; Research Institute

## Appendix B