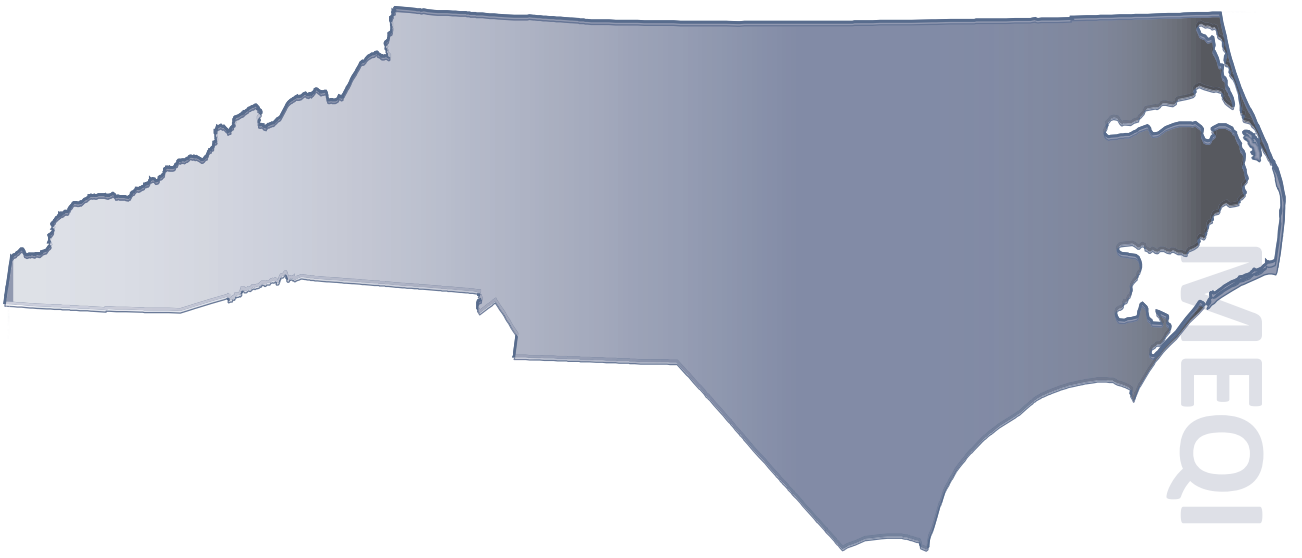
Nursing Home Medication Error Quality Initiative

MEQI Report: Fiscal Year 2009

October 1, 2008 to September 30, 2009



A report on the sixth year of mandatory reporting of medication errors for all state licensed nursing homes in North Carolina.

Prepared by:
The Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill

Funded by:
The North Carolina Department of Health and Human Services
Contract # 07-1151

MEQI FY2009

MEQI Overview

The Medication Error Quality Initiative, or MEQI, is a North Carolina nursing home medication error reporting project, as required by the 2003 NC Senate Bill 1016. All state licensed nursing homes have been reporting medication errors since January 2004, initially using an online annual summary system. Beginning in 2006, nursing homes transitioned to a system where errors are entered individually as they occur throughout the year.

Fiscal year 2009 (October 1, 2008 to September 30, 2009) was the sixth year of reporting, and the first year that all 395 homes used the new system where error incidents are submitted individually. One hundred percent of open and functional nursing homes submitted error incidents and also completed a year end form verifying that submission was complete. Though it is mandatory to report all errors and potential errors, error reporting behavior and completeness of reporting varies. The number of errors for the year range from 1 to 1997, a range which is not correlated with the size of the facility.

In the year end summary form sites were asked to report any medication related liability claim against their facility during the year. Zero nursing homes reported liability claims in FY2009.

Data Summary

Link to Data Summary Table

A total of 14,395 error incidents were reported in FY2009. The mean number of error incidents per nursing home was 36, or an average of 31 errors per 100 beds. The median number of errors was 22 per facility. Of the 14,395 errors, 5,064 (35%) were repeated at least once and there was an average of 11.75 repeats before the error was discovered. There were a total of 59,558 total repeat occurrences of errors including the original error which is an average of 151 repeat errors per nursing home, with a median of 94 repeat errors. An example of a repeated error would be a situation where a physician requests that a drug be discontinued, but this does not get recorded in the Medication Administration Record (MAR), which result in the drug being administered to the resident for 5 additional days. This would be reported by a nursing home in one error incident, but the form would indicate that there were 5 repeat occurrences of the error.

The data summary table also shows results for FY2007 and FY2008. For these two years we include only facilities that use the new individual incident reporting system, with 203 sites using this in 2007 and 288 in 2008. In 2007, sites reported 5,823 error incidents (25,860 total repeat error occurrences), a mean of 29, a median of 18, and 24 errors per 100 beds. In 2008, sites reported 8,979 error incidents (41,715 total repeat error occurrences), a mean of 31, a median of 19, and 26 errors per 100 beds. The gradual increase in reporting rates is most likely due to an improved patient safety culture and support of reporting, rather than an increase in any actual error rate.

MEQI FY2009

Patient Characteristics*

Link to Patient Characteristics Table

NC nursing home patients affected by medication errors are mostly 80 years of age or older (7,328 error incidents, 50.9%). 32.1% of errors were for residents 65-79 years old and 15.7 % for residents 64 years old or younger. In the 2009 data the age of patient did not seem related to the seriousness of the error. Regarding gender, 67.4 % were female and 31.3 % were male, which is similar to the gender distribution of the national nursing home population of 71.2% female and 28.8% male (National Nursing Home Study 2004).

Nursing home staff members recording the errors are asked to identify whether the patient is able or unable to direct their own care. 32.7 % of residents are identified as those able to direct their own care and 67.4% were unable to direct their own care.

Whether the error occurred while the patient was transitioning into the nursing home from their home or another facility was also recorded, and such a transition is noted in 1 out of 10 errors (10.8% of all error incidents). A total of 1,560 errors occurred in transition, 59 from home (0.4%), 1,441 from hospital (10%) and 60 from another facility (0.4%). Errors in transition are slightly more likely to end with more serious patient outcomes. While 7.7% of non-transition medication error incidents were serious, over 11% of errors in transition were serious.

Type of Error

Link to Type of Error Table

Nearly half of all errors, 7,052 (49%) are dose omission errors. This has continued to be by far the most common error reported in the nursing home setting in NC. The second most common type of error with 1,426 errors (9.9%) is overdose errors. Other error types that have a significant number of errors include wrong documentation (809, 5.6%), wrong strength (775, 5.4%), wrong product (590, 4.1%), under dose (592, 4.1%), wrong time (481, 3.3%) and wrong patient (458, 3.2%).

There are five types of errors that are more than twice as likely to have serious outcomes (average 8% serious):

- → 38.0% of **wrong patient** errors were serious
- → 21.4 % of **wrong product** errors were serious
- → 20.6 % of **lab work** errors were serious
- → 16.5% of **wrong technique** errors were serious
- → 16.1 % of **overdose** errors were serious

These five types of errors have consistently been related to more serious results over the last few years. **Nursing homes should continue focusing efforts in these areas – especially if their reports show a high number or increase in these specific types of errors.**

Medications

Link to Medications Involved in Error Table

The most common medications involved in errors—the medication actually given to patient, or not given in case of dose omission—continue to be similar to those in prior years. Insulin (705) is the most common medication involved in errors, followed by warfarin (684), lorazepam (509), hydrocodone combinations (434), and oxycodone combinations (423). Many of the common medications are also consistently included on lists of dangerous medications and on lists of medications that are cautioned for use in the elderly.

The Medications Table includes the 30 most common types of medications involved in error incidents in NC. These 30 medications account for nearly one-half (46.7%) of all error incidents. Within this list there are four medications that are more than twice as likely to have serious outcomes (average 8% serious):

- → 23.2 % of **warfarin** (Coumadin) errors were serious
- → 18.2 % of **insulin** (all types of insulin) errors were serious
- → 18.1 % of **divalproex** (Depakote) errors were serious
- → 16.0% of **clonidine** (Catapres) errors were serious

The table of most common medications involved in error does not include some commonly submitted items such as acetaminophen, which though common is an ingredient in too many medications to be effectively counted. Also excluded were other nutritional supplements and multiple vitamins, which are a catch-all category for nutritional supplements and multi-vitamins not found in the medication database. Blood stick tests where the error was made with the follow-up rather than the drug itself are also excluded.

An optional question in the incident reporting form asks how many medications the patient takes per day. This question has been left optional as it is not necessarily available to the person submitting the incident form. In 41.7 % of error incidents, sites reported the number of daily medications. Most patients in this group receive between 6-10 medications per day (14.4% of incidents, 31 % of those reporting medications) or 11-15 medications per day (15.5 % of incidents, 34% of those reporting incidents).

Patient Outcomes

Link to Patient Outcomes Table

All submitted errors were reviewed by patient outcome and categorized into a minor or serious outcome category. Consistent with prior years' data, 92% of errors were in the minor outcome categories and 8% were in the serious outcome categories. Of the 92% minor errors, 8.5 % were either a situation where there was a capacity for error, or the error was stopped before it reached the patient. The additional 83.5 % were errors that reached the patient, but caused no harm. Of the 8% serious outcome errors, nearly all were errors that required monitoring and/or intervention to preclude harm, but no temporary or permanent harm was done to the patient. While these errors are classified by national standards as no harm events, we consider them harmful to the nursing home because they require additional nursing home resources to prevent harm, and may indirectly affect the quailty of patient care Only 114 errors (less than 1%) were errors which lead to temporary or permanent patient harm. This was the first year we had more than one error reported in the two most serious categories; 2 medication errors were reported that led to permanent patient harm and 2 patient deaths were reported. **Though this could be indicative of more serious errors occurring in the population it could also be related to a greater awareness of medication errors, and trust in the confidentiality of reporting—the reflection of a "reporting culture" or a marker of a "patient safety culture"—rather than an actual increase in serious errors.**

Patient Outcome Definition	
Minor Error Outcome	1 Capacity to cause error; no patient involved
	2 Error occurred; but did not reach the patient
	3 Error occurred and reached the patient, but did not cause harm (dose omission with no effects should be included here)
Serious Error Outcome	4 Error occurred and reached the patient and required monitoring and/or intervention to preclude harm
	5 Error occurred and reached the patient and resulted in temporary patient harm
	6 Error occurred and reached the patient and resulted in temporary harm, requiring a trip to the Emergency Room
	7 Error occurred and reached the patient and contributed to permanent patient harm
	8 Error occurred and reached the patient and resulted in intervention necessary to sustain human life
	9 Error occurred and reached the patient and contributed to the patient's dealth

Effects

Link to effects table

Nursing homes are also asked to report the effect of the error on the patient. 89.3% of errors had no injury or effect, which is consistent with the 92% of errors in the minor (no injury to patient) categories. Most of the errors reported in the more serious categories did list at least one effect. The most common reported effect, with 782 errors, is an inadequate effect of medication. Other effects that are commonly reported are change in blood pressure (68 errors), change in blood sugar (85 errors), excessive side effects (58 errors) and somnolence (58 errors).

Causes

Link to Cause of Error Table

The most commonly reported cause of error is basic human error, with 56.9 % of errors reporting this as a cause. Other common causes include transcription error (3,178 reports, 17%), distractions on floor (884 reports, 4.7%), poor communication (741 reports, 4%), following policies of nursing home led to error (620 reports, 3.3%) and medication unavailable (499 errors, 2.7%).

There are eight causes of errors that are more than twice as likely to have serious outcomes, some of these though are indicated in only a few errors:

- 66.7% (only 3 errors) of **pharmacy delivered to wrong facility errors** were serious
- 21.6 % (111 errors) of **shift change errors** were serious
- 20.0 % (30 errors) of **exhaustion** errors were serious
- 20.4 % (152 errors) of **improper training** errors were serious
- 18.2% (641 errors) of **poor communication** errors were serious
- 16.7 % (48 errors) of **emergency on floor** errors were serious
- 16.7% (24 errors) of **abbreviation** errors were serious
- 16.3% (104 errors) of **package design** errors were serious

MEQI FY2009

Phase

Link to Phase of Error Occurrence Table and Chart

Nursing homes also report in which of five different process phases the medication error occurred. Most errors reported are those that occur within the nursing home itself, with 52.6% in administration, 33.4% in documentation and 3.4 % in monitoring. Only 10.7 % of the errors are in the prescribing (1.6%) and dispensing (9.1%) phases. These are the errors that were not caught at the MD or pharmacy level and made it through to the nursing home before being identified. Though errors in monitoring and prescribing appear to be slightly more serious than those in other phases, the small numbers in these two phases might be affecting these results.

Shift

Link to Shift of Error Occurrence Table and Charts

Each error is also attached to the shift in which the error occurred, or if unknown, the shift where it was identified. About half (50.5%) of all errors occur during the day shift (7am to 3pm). Another 39.2% occur during the evening shift (3pm to 11pm). A smaller number of errors (10.3%) occur in the night shift (11pm to 7am). These numbers are reflective of when medications are distributed to the patients. Early reports about shift from prior years showed a higher level of serious patient outcomes on the evening and night shifts, but this is no longer the case in current data. It cannot be determined whether the prior years' result was a temporary artifact due to a smaller number of homes reporting, or a true result that was corrected by continuous education in this area. For FY2009 there was little variation in serious outcomes among shifts. Nursing homes should review their individual home shift charts (in MEQI graphic reporting feature) to see if serious outcome errors are more likely to occur in a specific shift.

Personnel

Link to Personnel table and Chart

Nurses, both RN and LPN, are the primary medical personnel within a nursing home and are therefore responsible for the delivery of most medication. Given this it is not surprising that LPNs are the primary personnel responsible for 67.5% of the medication error incidents and RNs for 22.8 %. If you include medication aides, who are responsible for 4.1% of errors, this accounts for 94.4 % of errors. Use of medication aides, a new type of personnel added in 2006, is increasing, but they are still only represented in 150 (37%) nursing homes and often in small numbers. Pharmacists or pharmacy staff account for another 3.7% of errors.

In 337 errors (2.3%) the primary personnel involved in the error was listed as a temporary, contract, or agency staff. These errors appear to be slightly more serious than those of regular personnel, with 14.8% serious outcomes for temporary personnel compared to only 8.1% for regular personnel.

MEQI FY2009

MEQI Year Highlights

FY2009 was a year of transition and change for the MEQI project. The transition to a single reporting system was completed, and we now collect a detailed set of information on each medication error for all nursing homes. In addition we have made two significant changes to the MEQI system that will both improve data collection and provide more information back to the nursing home on their own error information:

MEQI Version 3.0 Implemented in December 2009

In December 2009 a new version of MEQI was implemented for all nursing homes. This version has changes to improve data collection including improved definitions, changes in some response choices, added response options, more guided data entry by limiting incorrect combinations of responses, and a re-ordered form for smoother data entry.

Graphic Reports Feature Pilot

In 2009 the Sheps Center developed a new graphic reporting feature to provide immediate access to a set of graphs and tables on all data submitted by a nursing home. These reports can be printed or viewed online and are designed to provide information to the sites about which errors are most common or most serious. A pilot was developed to test the reports at 15 nursing homes sites prior to implementation statewide. Data were collected from these pilot sites using key informant interviews.

List of Graphic Reports

- **Number of Errors by Type of Error**
- **Medication Phase Where Errors First Occurred**
- **Personnel Involved in Errors**
- **Work Shift Where Errors Occurred**
- **Work Shift Where Serious Errors Occurred**
- **Medications Involved in Errors**
- **Medications Involved in Serious error**
- **List of Serious Errors**

The graphic reports are available online from the main menu page of the MEQI reporting system. Sites must use their system user ID and password to enter and print reports. Once they click to access the reports they see a list of eight available reports with a choice of time periods. Reports are currently available on a yearly or quarterly basis.

The graphic reports pilot was very successful, with most pilot sites actively using their reports and responding positively to the feature. The graphic reporting feature will be a useful addition to the MEQI system. The reporting feature can be easily used by a large number of the reporting nursing homes with currently available technology. There is a clear benefit to nursing homes that are diligent in entering errors, and then choose to use the reports to understand their error patterns and characteristics. However, the reports are of more limited use for smaller sites or those reporting a smaller number of errors. In February 2010 we implemented this feature statewide.

MEQI FY2009

Nursing Home suggestions for 2010

→ Print and use the graphic reports available from the MEQI System– take these reports to your quality improvement meetings and share them with your administration and pharmacy staff.

→ Review the medication errors at your facility which have serious patient outcomes and target staff education for the most common serious events.

→ Continue to review the medications reports to identify which medications are most often involved in errors at your facility. Provide additional training on these medications, seeking help from your pharmacist consultant if appropriate.

List of Attached Tables and Charts*

- → 2007-2009 Summary Data
- → Patient Characteristics FY2009
- → Type of Error FY2009
- → Medications Involved in Error FY2009
- → Patient Outcomes FY2009
- → Effects of Error FY2009
- → Cause of Error FY2009
- → Phase of Error Occurrence FY2009
- → Phase of Error Occurrence Chart FY2009
- → Shift of Error Occurrence FY2009
- → Errors by Work Shift Chart FY2009
- → Errors by Work Shift (minor and serious) Chart FY2009
- → Personnel FY 2009
- → Number of Errors for Each Personnel Category chart FY2009

* Notes on Tables and Charts

1. On **Data Summary chart** - note in 2007 and 2008 use of the newer individual incident system was optional so fewer sites are included in the data. 2009 was the first year all sites used the new system.
2. On **Patient Characteristics chart** - errors in category one (circumstances) do not include patient information as no patient was involved.
3. See the Patient Outcome section in the narrative for a definition of Minor and Serious Outcomes. Some national studies choose not to use patient outcome 4 as a serious error. We have *intentionally* included these errors as we feel that any error with an effect that requires monitoring and/or intervention to preclude harm should be looked upon as a serious error.
4. **Serious Outcomes** are highlighted in **red** within the chart if they are over 16% of errors within that category. This is about double the average number of serious errors (8%).
5. Please note that each section has an available link to the associated table. Bookmarks on the left hand side of the PDF can also be used to navigate within the document.

Medication Error Quality Initiative
Cecil G. Sheps Center for Health Services Research
The University of North Carolina at Chapel Hill
CB # 7590, 725 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27599-7590

For more information contact:

Charlotte Williams
Phone: 919-966-7927
Email: meqi@shepscenter.unc.edu

Project Website:
http://www.shepscenter.unc.edu/meqi

MEQI

UNC
THE CECIL G. SHEPS CENTER
FOR HEALTH SERVICES RESEARCH

This report is the sixth in a series produced by: The Cecil G. Sheps Center for Health Services Research (Sheps Center) at the University of North Carolina at Chapel Hill for the North Carolina Department of Health and Human Services, Division of Health Services Regulation.

Authors: Charlotte E. Williams, MPH; Sandra B. Greene, DrPH; Richard A. Hansen, PhD *; Stephanie Pierson, MSHI; Roger Akers, MSIS; and Timothy Carey, MD, MPH.
* of the University of North Carolina Eshelman School of Pharmacy

Booklet Design by Charlotte Williams, of the Cecil G. Sheps Center for Health Services Research, based on a design by Christine Shia.

Cover Art: Free North Carolina Outline Blank Map, http://digital-vector-maps.com/state-maps-detail/1136/North-Carolina-Outline-Blank-Map-Adobe-Illustrator.htm

Suggested Citation: Williams, C.E ., Greene, S.B., Hansen R.A., et al. Nursing Home Medication Error Quality Initiative, MEQI Report: Year Five, October 1, 2008 to September 30, 2009. Chapel Hill, North Carolina. The Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill.

Link to return to narrative

MEQI Reports
Summary Data
FY 2009

	Fiscal Year		
	2009	2008	2007
Number of nursing homes	395	288	203
Total number of error incidents	14,395	8,979	5,823
Total errors includes repeats	59,558	41,715	25,860
Mean error incidents	36	31	29
Median error incidents	22	19	18
Incidents per 100 beds	31	26	24

Link to return to narrative

MEQI Reports
Patient Characteristics
FY 2009

	All Errors				Minor	Serious
			Repeats			
	N	% of N	N	% of N	%	%
All Errors	14,395	100.0	59,558	100.0	91.9	**8.1**
Age Group						
64 yrs or younger	2,256	15.7	7,538	12.7	91.9	**8.1**
65-79 years	4,617	32.1	18,211	30.6	91.7	**8.3**
80 years or older	7,328	50.9	32,343	54.3	91.8	**8.2**
not applicable	194	1.3	1,466	2.5	100.0	**0**
Gender						
Female	9,697	67.4	39,734	66.7	91.8	**8.2**
Male	4,504	31.3	18,358	30.8	91.7	**8.3**
NA	194	1.3	1,466	2.5	100.0	**0**
Cognitive Ability						
NA	194	1.3	1,466	2.5	100.0	**0**
Patient able to direct own care	4,703	32.7	16,191	27.2	91.4	**8.6**
Patient unable to direct own care	9,084	63.1	40,316	67.7	91.9	**8.1**
Unknown	414	2.9	1,585	2.7	92.8	**7.2**
Number of Meds Daily						
01 - 05 meds	266	1.8	1,481	2.5	95.1	**4.9**
06 - 10 meds	2,080	14.4	9,207	15.5	92.2	**7.8**
11 - 15 meds	2,243	15.6	10,576	17.8	91.5	**8.5**
16 - 20 meds	1,024	7.1	4,502	7.6	91.8	**8.2**
20 or more meds	386	2.7	1,963	3.3	91.2	**8.8**
Not reported	8,396	58.3	31,829	53.4	91.9	**8.1**
Patient Transition						
From Home	59	0.4	322	0.5	88.1	**11.9**
From Hospital	1,441	10.0	8,617	14.5	88.5	**11.5**
From Other facility	60	0.4	242	0.4	88.3	**11.7**
Not Transitioning	12,835	89.2	50,377	84.6	92.3	**7.7**

Link to return to narrative

MEQI Reports
Type of Error
FY 2009

	All Errors				Minor	Serious
			Repeats			
	N	% of N	N	% of N	%	%
All Errors	14,395	100.0	59,558	100.0	91.9	**8.1**
Type of error						
Dose Omission	7,052	49.0	23,499	39.5	95.9	**4.1**
Expired order	293	2.0	2,056	3.5	92.2	**7.8**
Expired product	52	0.4	842	1.4	98.1	**1.9**
Labwork error	97	0.7	232	0.4	79.4	**20.6**
Monitoring error	371	2.6	983	1.7	92.2	**7.8**
Other	918	6.4	3,585	6.0	91.3	**8.7**
Overdose	1,426	9.9	8,602	14.4	83.9	**16.1**
Underdose	592	4.1	3,469	5.8	93.4	**6.6**
Wrong documentation	809	5.6	4,170	7.0	94.7	**5.3**
Wrong duration	287	2.0	2,390	4.0	93.4	**6.6**
Wrong form	60	0.4	312	0.5	86.7	**13.3**
Wrong patient	458	3.2	833	1.4	62.0	**38.0**
Wrong product	590	4.1	2,343	3.9	87.3	**12.7**
Wrong rate of administration	28	0.2	104	0.2	78.6	**21.4**
Wrong route	27	0.2	48	0.1	88.9	**11.1**
Wrong strength	775	5.4	4,125	6.9	89.3	**10.7**
Wrong technique	79	0.5	391	0.7	83.5	**16.5**
Wrong time	481	3.3	1,574	2.6	93.8	**6.2**

MEQI Reports - Medication Involved in Error FY2009

Link to return to narrative

	All Errors				Minor	Serious
			Repeats			
	N	% of N	N	% of N	%	%
All Errors	14,395	100.0	59,558	100.0	91.9	8.1
other	7,678	53.3	36,230	60.8	93.9	6.1
Insulin	705	4.9	2,242	3.8	81.8	18.2
Warfarin	684	4.8	2,020	3.4	76.8	23.2
Lorazepam	509	3.5	1,294	2.2	93.9	6.1
Hydrocodone	434	3.0	1,076	1.8	94.9	5.1
Oxycodone	423	2.9	924	1.6	91.0	9.0
Furosemide	298	2.1	1,262	2.1	86.6	13.4
Fentanyl	275	1.9	364	0.6	91.3	8.7
Metoprolol	256	1.8	1,305	2.2	91.4	8.6
Alprazolam	221	1.5	526	0.9	95.9	4.1
Omeprazole	220	1.5	1,209	2.0	98.6	1.4
Potassium chloride	216	1.5	1,003	1.7	86.6	13.4
Levothyroxine	207	1.4	912	1.5	93.7	6.3
Zolpidem	204	1.4	509	0.9	93.1	6.9
Clonazepam	193	1.3	548	0.9	92.7	7.3
Docusate	169	1.2	969	1.6	97.6	2.4
Morphine	168	1.2	389	0.7	86.3	13.7
Aspirin	163	1.1	948	1.6	96.3	3.7
Quetiapine	122	0.8	611	1.0	94.3	5.7
Polyethylene glycol	116	0.8	674	1.1	99.1	0.9
Levofloxacin	114	0.8	263	0.4	92.1	7.9
Lisinopril	112	0.8	510	0.9	88.4	11.6
Pregabalin	111	0.8	322	0.5	92.8	7.2
Gabapentin	110	0.8	400	0.7	96.4	3.6
Digoxin	104	0.7	422	0.7	79.8	20.2
Donepezil	104	0.7	555	0.9	96.2	3.8
Enoxaparin	97	0.7	356	0.6	87.6	12.4
Memantine	97	0.7	540	0.9	95.9	4.1
Ergocalciferol	97	0.7	334	0.6	99.0	1.0
Clonidine	94	0.7	314	0.5	84.0	16.0
Divalproex	94	0.7	527	0.9	81.9	18.1

Link to return to narrative

MEQI Reports
Patient Outcomes
FY 2009

	All Errors			
			Repeats	
	N	% of N	N	% of N
All Errors	14,395	100.0	59,558	100.0
Patient outcome				
1=Capacity to cause error	195	1.4	1,467	2.5
2=Did not reach patient	1,029	7.1	2,713	4.6
3=Did not cause any harm	12,004	83.4	50,359	84.6
4=Required monitoring/intervention	1,053	7.3	4,217	7.1
5=Temporary harm to patient	75	0.5	672	1.1
6=Temporary harm with trip to ER	34	0.2	101	0.2
7=Permanent patient harm	1	0.0	24	0.0
8=Intervention necessary to sustain life	2	0.0	2	0.0
9=Patient death	2	0.0	3	0.0

Link to return to narrative

MEQI Reports
Effects of Error
FY 2009

	All Errors				Minor	Serious
			Repeats			
	N	% of N	N	% of N	%	%
All Errors	14,500	100.0	60,206	100.0	91.4	8.6
Effects Observed						
Allergic reaction	13	0.1	16	0.0	30.8	69.2
Aspiration	1	0.0	1	0.0	0	100.0
Change in blood pressure	68	0.5	310	0.5	16.2	83.8
Change in blood sugar	85	0.6	423	0.7	45.9	54.1
Cognitive change	28	0.2	265	0.4	28.6	71.4
Constipation/Diarrhea	23	0.2	319	0.5	78.3	21.7
Death	1	0.0	1	0.0	0	100.0
Edema	19	0.1	132	0.2	57.9	42.1
Excessive side effects	58	0.4	299	0.5	36.2	63.8
Fall	17	0.1	155	0.3	17.6	82.4
GI bleed	4	0.0	63	0.1	0	100.0
Headache	2	0.0	2	0.0	50.0	50.0
Hearing Disturbance	2	0.0	8	0.0	50.0	50.0
Inadequate effect	782	5.4	4,074	6.8	83.0	17.0
Nausea/Vomiting	18	0.1	104	0.2	33.3	66.7
Other effect	365	2.5	1,709	2.8	57.8	42.2
Respiratory distress	12	0.1	75	0.1	16.7	83.3
Somnolence	58	0.4	234	0.4	41.4	58.6
Visual disturbance	1	0.0	7	0.0	0	100.0
no injury or effect	12,943	89.3	52,009	86.4	94.6	5.4

Link to return to narrative

MEQI Reports
Cause of Error
FY 2009

	All Errors				Minor	Serious
			Repeats			
	N	% of N	N	% of N	%	%
All Errors	18,748	100.0	85,768	100.0	90.6	**9.4**
Cause						
Abbreviations	24	0.1	149	0.2	83.3	**16.7**
Basic human error	10,665	56.9	37,670	43.9	92.4	**7.6**
Distractions on floor	884	4.7	3,175	3.7	86.5	**13.5**
Emergency on floor	48	0.3	70	0.1	83.3	**16.7**
Exhaustion	30	0.2	57	0.1	80.0	**20.0**
Following policies	620	3.3	3,099	3.6	85.3	**14.7**
Handwriting	72	0.4	588	0.7	93.1	**6.9**
Improper training	152	0.8	657	0.8	79.6	**20.4**
Inadequate info	170	0.9	947	1.1	87.6	**12.4**
Med unavailable	499	2.7	1,524	1.8	95.6	**4.4**
Name confusion	191	1.0	812	0.9	88.0	**12.0**
Other cause	651	3.5	2,560	3.0	85.6	**14.4**
Package design	104	0.6	148	0.2	83.7	**16.3**
Pharm deliverd to wrong facility	3	0.0	29	0.0	33.3	**66.7**
Pharm deliverd wrong med	115	0.6	942	1.1	85.2	**14.8**
Pharmacy closed	15	0.1	51	0.1	86.7	**13.3**
Pharmacy dispensing	285	1.5	1,909	2.2	89.1	**10.9**
Poor Communication	741	4.0	3,628	4.2	81.8	**18.2**
Product label	83	0.4	522	0.6	86.7	**13.3**
Shift change	111	0.6	264	0.3	78.4	**21.6**
Too much workload/overtime	97	0.5	337	0.4	93.8	**6.2**
Transcription error	3,178	17.0	26,564	31.0	91.2	**8.8**
Working conditions	10	0.1	66	0.1	90.0	**10.0**

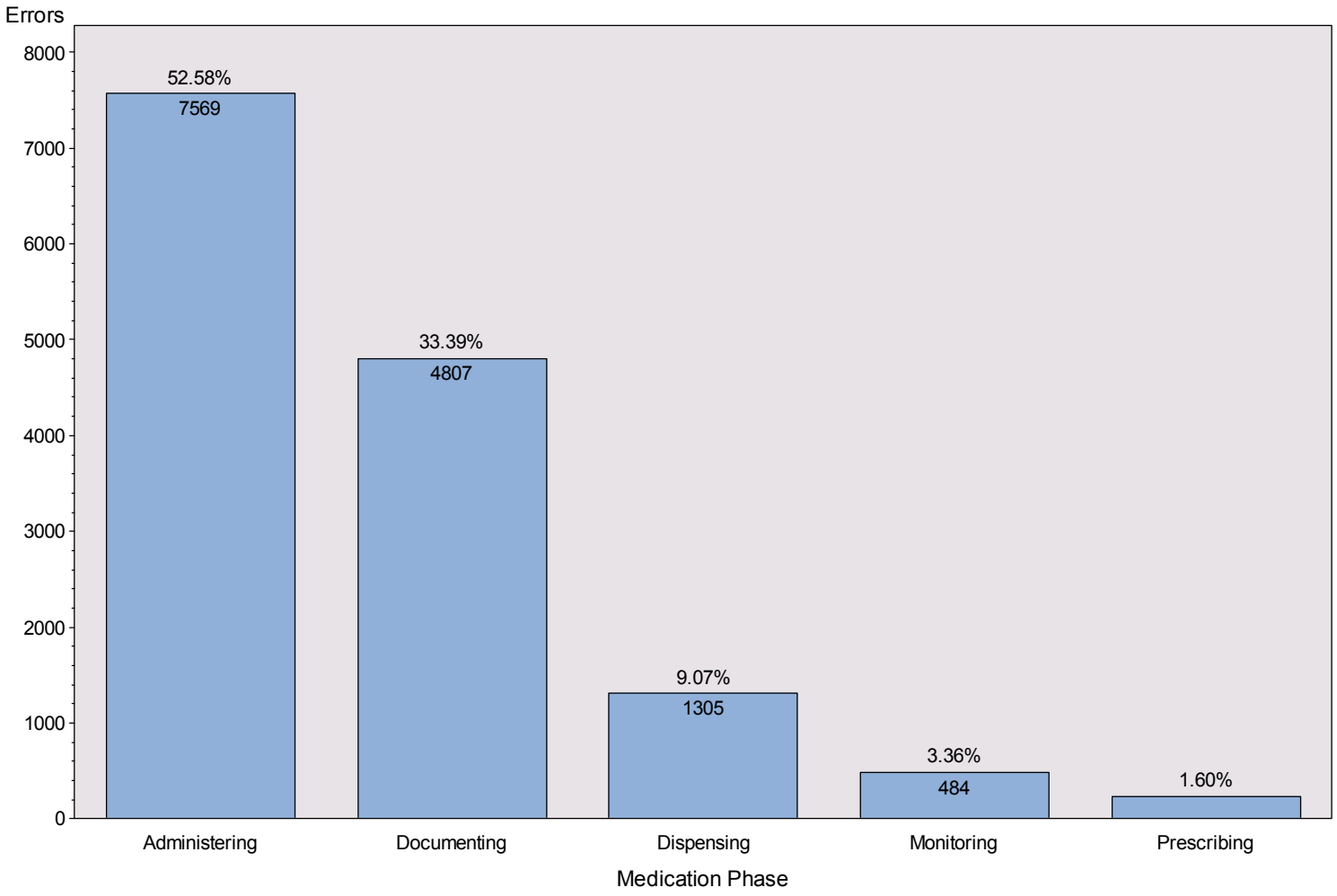
Link to return to narrative

MEQI Reports
Phase of Error Occurrence
FY 2009

	All Errors				Minor	Serious
			Repeats			
	N	% of N	N	% of N	%	%
All Errors	14,395	100.0	59,558	100.0	91.9	**8.1**
Phase						
Administering	7,569	52.6	19,481	32.7	91.1	**8.9**
Dispensing	1,305	9.1	4,928	8.3	91.0	**9.0**
Documenting	4,807	33.4	31,888	53.5	93.8	**6.2**
Monitoring	484	3.4	1,374	2.3	89.5	**10.5**
Prescribing	230	1.6	1,887	3.2	87.8	**12.2**

Link to return to narrative

MEQI Reports
Phase of Error Occurrence
FY 2009



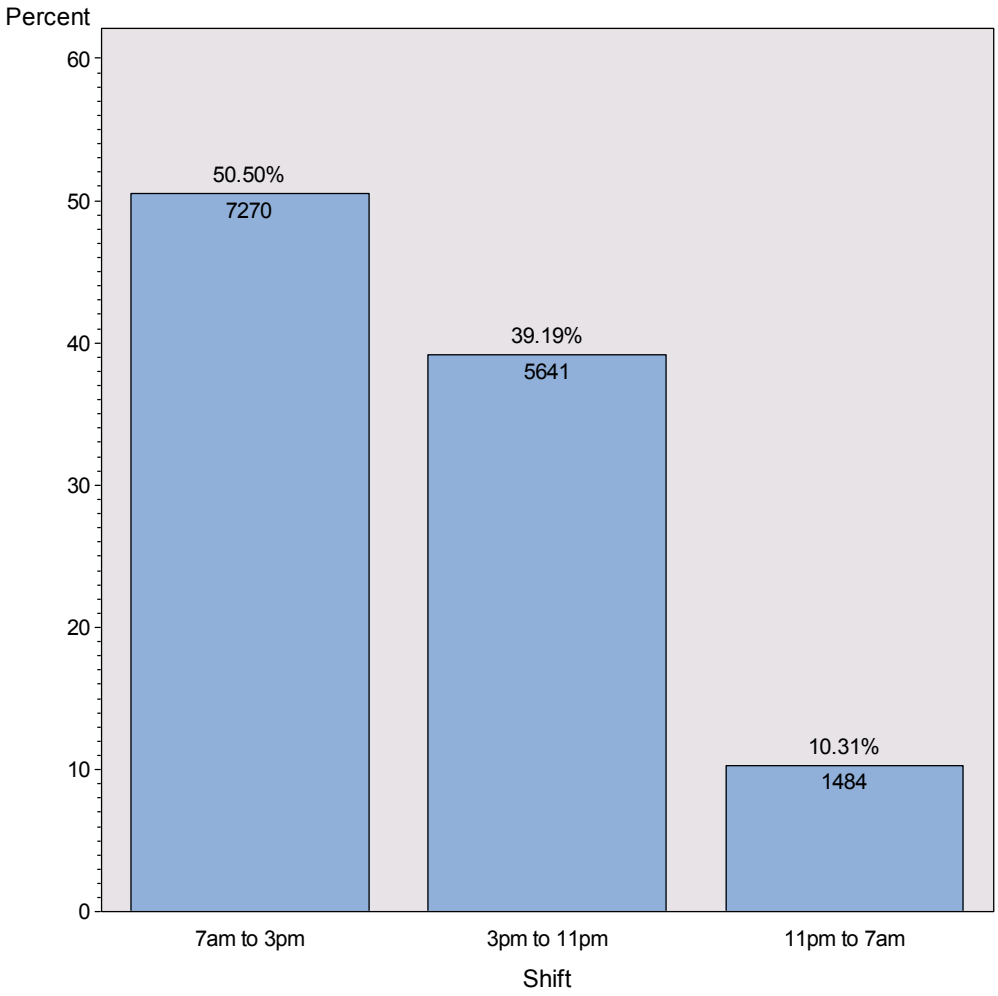
Link to return to narrative

MEQI Reports
Shift of Error Occurrence
FY 2009

	All Errors				Minor	Serious
			Repeats			
	N	% of N	N	% of N	%	%
All Errors	14,395	100.0	59,558	100.0	91.9	**8.1**
Shift						
11pm to 7am	1,484	10.3	3,639	6.1	92.5	**7.5**
3pm to 11pm	5,641	39.2	19,656	33.0	91.6	**8.4**
7am to 3pm	7,270	50.5	36,263	60.9	92.0	**8.0**

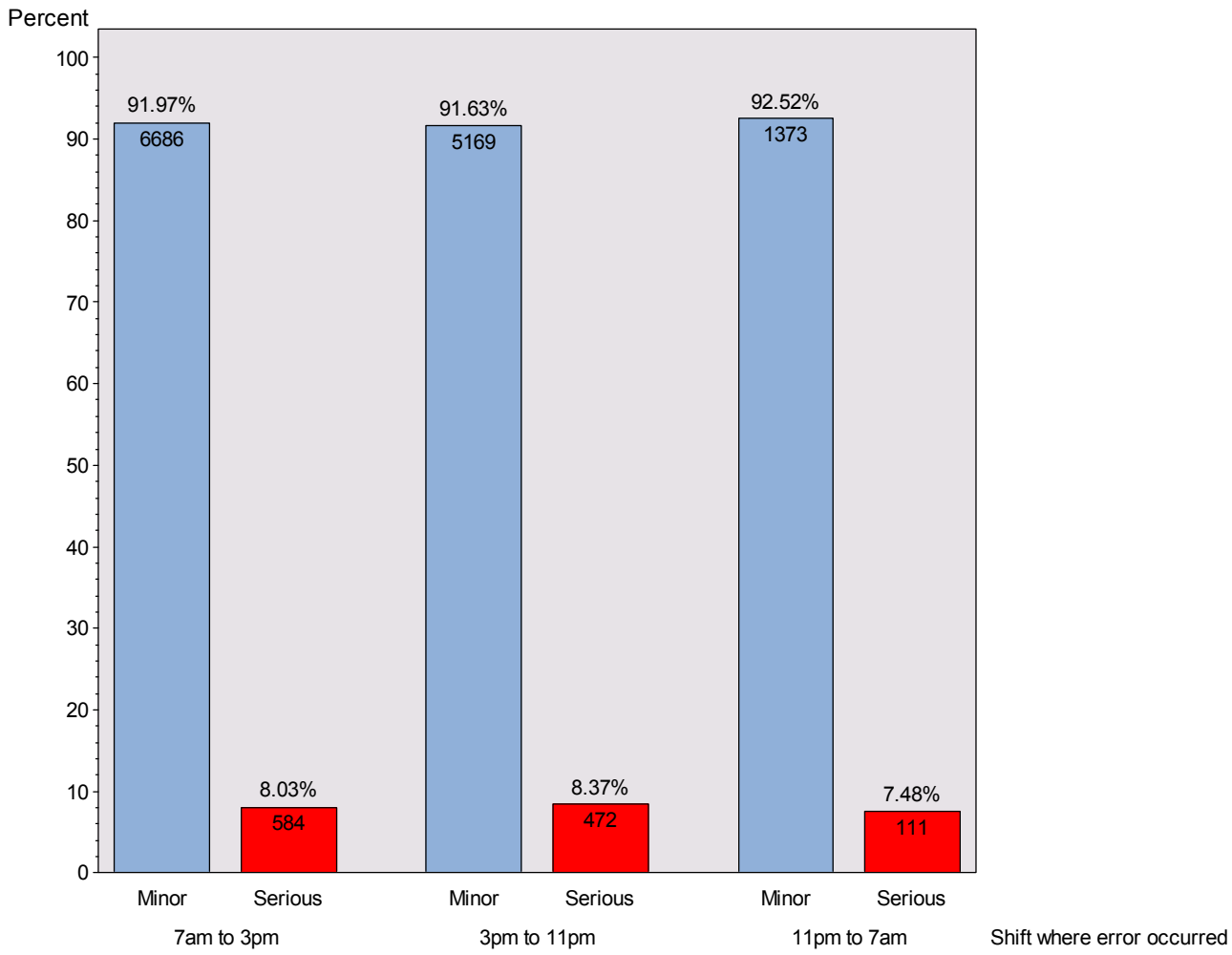
Link to return to narrative

MEQI Reports
Errors by Work Shift
FY 2009



Link to return to narrative

MEQI Reports
Errors by Work Shift (minor and serious)
FY 2009



Link to return to narrative

MEQI Reports
Personnel
FY 2009

	All Errors				Minor	Serious
			Repeats			
	N	% of N	N	% of N	%	%
All Errors	14,395	100.0	59,558	100.0	91.9	**8.1**
Primary Personnel						
LPN	9,723	67.5	40,090	67.3	92.4	**7.6**
Medication Aide	585	4.1	1,341	2.3	91.8	**8.2**
Nurse Practitioner	13	0.1	79	0.1	92.3	**7.7**
Patient or Caregiver	11	0.1	20	0.0	90.9	**9.1**
Pharmacist/Pharm Tech	537	3.7	2,776	4.7	96.1	**3.9**
Physician	61	0.4	587	1.0	96.7	**3.3**
Physician Assistant	2	0.0	2	0.0	100.0	**0**
RN	3,276	22.8	11,987	20.1	89.6	**10.4**
Student or Trainee	29	0.2	29	0.0	86.2	**13.8**
Support Personnel	158	1.1	2,647	4.4	96.2	**3.8**
Temp/Contract						
No	13,657	94.9	56,431	94.7	92.0	**8.0**
Unknown	401	2.8	1,951	3.3	93.8	**6.2**
Yes	337	2.3	1,176	2.0	85.2	**14.8**

MEQI Reports
Number of Errors for Each Personnel Category
FY 2009

Link to return to narrative