

## **An Evaluation of Medication Administration Practices in Assisted Living Facilities in Maryland**

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## **Aims of the Study**

- To determine an appropriate interval (45, 90 days) for registered nurses to perform an on site review of medication administration by medication assistants in Assisted Living Facilities (ALF) in Maryland
- To identify reasons for and frequency of RN notification by medication assistants/providers.

## **Background**

- Regulation standards for assisted living licensure (for medication administration) established in Maryland in 1999.
- Delegating Registered Nurse must make an on site review every 45 days by regulation.
- During 2000 legislative session, a bill was introduced to extend on-site review from 45 days to 90 days. (This version did not pass).

## **Background**

- Regulations provide for each Assisted Living Facility (ALF) to be licensed according to number of beds and level of care (1,2,3).
- An increasing number of elderly are moving into assisted living facilities with chronic illnesses requiring medication management by others.

## **Data Collection**

- Interviews—facility manager, DRN
- DRN 45 day mandatory review (Each facility had at least one 45 day visit over 90 days of the study)
- DRN 90 day log (reasons for contacts, med errors, reprimands, instruction)
- A checklist of errors by an independent observer of medication administration
- 7 day review of medications (types & total number per MAR)

## **Sample**

- Time line: November 2000-December 2001
- The sample was obtained from those assisted living facilities licensed by the Maryland Office of Health Care Quality (OHCQ) as of October, 2000.
- The licensed facilities (n=440) were classified into 8 geographic regions of the state and divided according to number of beds and level of care.

### Study Sample by Region (n=44)

Region	Eligible	Enrolled
1 Baltimore City	38	5
2 Southern MD (AA, Calvert, Charles, St. Mary's Co.)	46	6
3 Baltimore & Hartford Co.	45	4
4 Howard Co.	58	4
5 Western MD. (Alleghany, Frederick, Garrett, Washington, Carroll Co.)	50	7

### Study Sample by Region (con't)

Region	Eligible	Enrolled
6 Prince Georges	47	6
7 Montgomery	47	9
8 Eastern Shore	<u>18</u>	<u>3</u>
	349	44

### Permission from University IRB

- Permission of approval to conduct the study was obtained from the University of Maryland Internal Review Board- IRB Protocol #0700219.
- A Certificate of Confidentiality HRSA-00-012 was obtained from the Center for Quality, Health Resources and Services Administration on the Federal level.

### Sample (con't)

- ALF's (n=440) were randomly selected according to geographic region for recruitment into the study and screened for criteria for admission into the study.
- Inclusion criteria were those ALF facilities who had an unlicensed medication assistant administering medications and a Delegating Registered Nurse (DRN) providing oversight to the facility.

### Sample (con't)

- Total number of facilities screened who met the criteria: n=182
- Total number of facilities who met the criteria and said "yes" to receive a consent form to participate in the study: n=126/182 (69%)
- Total number of facilities who consented: n=44/126 (35%)
- Refusals: 82/126 (65%)

### Sample (con't)

- Once the facility gave consent, consent was obtained from DRN
- Total number of DRN's who consented: n=33/44 (75%)
- Total number of DRN's that refused consent: 11/44 (25%)
- Total number of site visits by independent observers: n=33
- Total number of independent observations of medication administration: n=49

### Procedures

- Letter sent to each licensed facility from OHCQ explaining benefits to participate
- A follow up phone call obtained verbal consent followed by written consent from the facility manager, delegating registered nurse and medication assistants.

### Screening

- Three categories of respondents emerged from the screening procedure
- **“Yes” group**—though regulations stated 45 days, several facilities had the DRN coming every 30 days; others every 45 days
- **“No” group**—majority had an RN on site daily as facility manager, owner, or RN on duty all the time
- **“Lost” group**—phone numbers and addresses wrong on original list; phone disconnected; closed/going out of business

### Major Reasons of ALF for Refusal To Participate

- **Reason:**
  - “too busy with required work to take on anything more”
  - “tight schedule”
  - “90 days would be too long for the nurse to visit”

### Procedures

- Permission was obtained from the facility, DRN, and Medication Assistant to allow an independent observer to accompany the DRN on the 45 day visit.
- Independent observer also conducted a retrospective review of the Medication Administration Record (MAR) for numbers and types of medications administered in the facility over a 7 day period.

### Results-Facility

- 303 residents were receiving care in the 44 facilities that participated in the provider interview.
- Average number was 6-7 residents.
- **Levels of care:**
  - Level 1 (n=74/24%)
  - Level 2 (n=164/54%)
  - Level 3 (n=65/22%)
- 75% of facility managers were employed at the facility for 6 years.

### Results-Facility Manager

- Educational level of Facility Manager (n=44)
- | <u>Level</u>             | <u>F</u> | <u>%</u> |
|--------------------------|----------|----------|
| Some high school         | 2        | 4.5      |
| High school graduate     | 16       | 36.4     |
| Some college/technical   | 11       | 25.0     |
| College- 4 years or more | 15       | 34.1     |
|                          | 44       | 100.0    |

### Results-Facility

- Termination of MA for unsafe practice:  
**0/44**
- Written guidelines for medication administration in the facility:  
**Yes=86%**  
**No=14%**

### Practice Patterns of Medication Assistant (MA) in ALF

- **Medication Administration Patterns:**
- MA's employed at ALF on average of 4 years
- Approximately 38% of MA's (from 44 facilities) give meds at other facilities.

### Results-Medication Assistant

- **Medication assistants preparation:**
- 73% (of 44 providers) of MA's took the Board of Nursing's Medication Administration Course.
- 27% reported other types of training:
- CMA, DRN gave class, Red Cross, Department of Aging, Paramedic course, DHMH course, community college course, VA course & DDA class.

### Facility Reporting Related to Medication Issue

- **When the MA has an issue related to medications:**
- 68% notify DRN first
- 14% notify physician first:
- 16% notify facility manager first
- 2% notify owner first

### Instruction to the Medication Assistant

- **Instruction:**
- 75% of the facilities identified the DRN as the professional who retrained and provided remedial instruction to the Medication Assistant
- **Other professionals identified:**
- Facility Manager and Health Department

### Results-Independent Observations of Medication Administration (n=49)

<u>Observation</u>	<u>Frequency</u>
Safe administrations	26
Critical errors	0
Low risk errors	23

- Major types of error: Not checking the expiration date, not reading the label 3 times, and failure to initial MAR post med administration

### Results--Medication Profile

- There were 1543 medications ordered in 33 facilities.
- Drugs most frequently ordered:
- Cardiovascular 386/1543 (25%)
- Psychiatric drugs 238/1543 (15%)
- GI medications 206/1543 (13%)
- Analgesia (uncontrolled) 137/1543 (11%)
- **N.B.** Many other types of drugs were ordered that did not fall into these 4 categories

### Results-DRN Report of the MA at the 45 day visit

- At the time of the 45 day visit:
- 4 DRN's reported the need for a verbal warning to the MA
- 2 DRN's reported the need for a written warning to the MA

### Practice Patterns of the Delegating Registered Nurse (DRN)

<u>Practice Patterns (n=33)</u>	<u>Mean</u>
• Length of time as a DRN at the ALF	1.6yrs.
• Number of ALF's served:	8.3
• Number of MA's supervised	22
• Time spent in ALF for 45 day visit	3.7hrs.
• Time at 45 day visit for remedial instruction	1.6hrs.

### Evaluation of MA by DRN for Skill Level of Medication Administration

- DRN's rated preparation skill level of MA as:
- good (97%)
  - fair (3%)
- From last 45 day visit, problems related to the visit were:
- the same (67%)
  - better (27%)

### Instruction by DRN(n=33) with MA at the 45 day visit

- The DRN's spend "some" to "a lot of time" with remedial education" (on average, 1.6 hours)
- Type of instruction included:
- Instruct reported by 8 DRN's
- Reinstruct reported by 10 DRN's
- Both reported by 15 DRN's
- **N.B.** All DRN's in the study reported some type of instruction needed during the 45 day visit.

### DRN Observations of the Medicine Aid During 90 days of Study Participation

- 79% DRN's stated that no Medicine Aids had been terminated at their facility with 21% reporting a turnover in the MA
- Only 6% (n=2) stated a turnover in the Facility Manager

### DRN Observations(n=33) Related to Facility Policies

<u>Policy</u>	<u>DRN "yes" response</u>
• Meds secured	33/33
• Written guidelines	31/33
• Written policies	30/33
• Controlled substances locked*	23/33

\*(23/33 facilities administered controlled substances)

### Type of Contact for DRN over 90 Days Obtained From DRN Logs (n=28)

- There were 110 contacts made to 28 DRN's over the course of 90 days:
- 57% of contacts were phone calls
- 37% of contacts were visits to the facility

### Reasons for Contacts to the DRN over 90 days. (n=28)

<u>Reasons for Contacts</u>	<u>number of contacts</u>
• New admission	14
• Return from hospital	13
• New medication order	26
• Change in present order	27
• Change in resident's condition	33
• Medication error (1 high risk, 3 low risk)	4

• N.B. The 90 day log included at least one 45 day visit to the facility

### Conclusions-Facility

- A limitation was the small number of facilities (n=44) that chose to participate, yet representation included each region of the state
- 78% of residents (n=303) met the criteria for moderate and high levels of care
- 75% of facility managers held the position for 6 years suggesting a degree of stability

### Conclusions-Medication Assistant

- 73% of the Medication Assistants took the Board of Nursing Medication Administration Course
- 68% of MA's notified the DRN first with a problem related to medications
- 79% of DRN's reported no turnover of MA's during the study; 21% reported a turnover

### Conclusions-Independent Observations (n=49)

- **Types of errors observed:**
- There were **no "critical" errors** observed
- There were **23 "low risk" errors** observed with major types of errors observed as:
  - Not checking the expiration date
  - Not reading the label three times
  - Failure to initial MAR after meds given

### Conclusions-Medications

- **Numbers of medications:**
- **1543** medications were counted from the MAR in 33 facilities over a 7 day period.
- **Most frequently occurring types of drugs were:** cardiovascular\*, psychiatric and gastrointestinal drugs
- \*includes heart drugs, blood pressure drugs, and blood thinners. These types of drugs require continual assessment and monitoring to maintain stable levels.

### Conclusions-DRN(n=33)

- The **mean** number of MA's supervised by the DRN was 22
- The DRN spent on average **3.7** hours during the 45 day visit with an average of **1.6** hours dedicated to instruction and re-instruction of the MA
- There were 4 verbal and 2 written warnings issued by the DRN during the course of the study

### Conclusions-DRN

The major types of contact with the DRN were:

- phone calls
- visits to the facility

Major reasons for contact:

- a change in resident's condition
- change in present order
- a new medication order
- return from the hospital
- a new admission

### Recommendation

**Within its limitations, the study supports the 45 day visit by the DRN as safe practice.**

Of the 110 contacts made to the DRN over 90 days, 42% had to do with a change in resident's condition, medications or return from the hospital. The frequency of the 45 day visit allowed for follow up and review of resident status.

- 40% of the DRN's time at the 45 day visit was spent in instruction and reinstruction and allowed for identifying low risk errors and preventing them from developing into critical errors.

### Recommendation

- 67% of residents were receiving moderate and high levels of care with 25% receiving cardiovascular medications that require frequent assessment and monitoring. Increasing the 45 day visit would put the resident at increased risk.
- 68% of the facilities contacted the DRN first when there was a problem with medications or changes in the resident. The 45 day visit increased the interval for follow up and reassessing the resident's status. There were many interim phone calls and visits in addition to the 45 day mandatory visit.

### Recommendations

- The study within its limitations concludes that the **45 day visit is safe practice and should be maintained.** It provides a suitable interval to monitor changes in the resident, provide for remedial instruction of the MA and detect low risk errors before they become critical errors that would place the resident at risk.

