Medication Management in Assisted Living: A National Survey of Policies and Practices

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**Objective:** To obtain information about actual medication management practices in assisted living residences (ALRs).

**Design:** An online survey; data were collected and reported as frequencies. Operational definitions were provided for “assist with” and “administration of” medications.

**Setting:** All 50 states.

**Participants:** Members of the key assisted living professional and provider associations.

**Results:** More than half of ALRs (n = 547) administer medications to 80% to 100% of their residents. Almost half of ALRs use unlicensed assistive personal (UAP)/medication aides to administer medications, as permitted by state regulations. In those states where UAPs are not permitted, unlicensed staff may assist residents with their medications. More than half of ALRs have written policies regarding medication storage and documentation of administration. A slightly smaller percentage of ALRs have policies regarding medication administration by a UAP/med aide, quality improvement programs, and error reporting. As much as 30% of ALRs lack policies regarding drug regimen review and monitoring for adverse drug events (ADEs).

**Conclusion:** Intensive education for practitioners about appropriate prescribing is warranted, as is improved methods for assessment of an older adult’s ability to safely self-administer medications. The role of Boards of Nursing in every state, and nationally, should take a leadership role in establishing the curriculum, training, competencies, and performance evaluation criteria of UAP/med aides. (J Am Med Dir Assoc 2009; 10: 107–114)

**Keywords:** Assisted living; medication management
ment was construed as ordering, dispensing, and administering. Other aspects of a full medication management program, such as guidelines for appropriate medication use, indicators of or monitoring for polypharmacy, and disposal of unused medication were not addressed in the survey.

BACKGROUND

Whereas large corporate assisted living (AL) operations are likely to have a medical and nursing director, no state requires assisted living residences to have a medical director to oversee AL services and/or resident care. While some states specifically require that AL residents are seen by a personal physician periodically, physicians have little control over or input into the medication administration policies and practices of an AL residence (ALR) in which their patients reside—and are aging in place.

Twenty-six states require a licensed nurse (RN or LPN) on staff or in a contractual relationship with the ALR. Many states’ regulations simply state “licensed nurse” and do not specify RN or LPN. This has implications for the ALR’s responsibility and ability to review and monitor residents’ medication regimens. Periodic medication review by either a licensed nurse (RN or LPN) or pharmacist varies by state and level of licensure of the residence.

It is estimated that 50% to 75% of residents require assistance of some kind with medication management/administration. Given that there are 17 different regulatory definitions of “medication assistance” many of the “assisting” tasks appear to be administration of medication rather than simply helping or assisting actions and are performed by unlicensed assistive personnel. Some states require that the resident must be “medically stable” if an unlicensed person is to assist with medications and some states require family consent (eg, Florida). Thirty-two states permit trained aides (ie, “med tech/aide”) to administer medications but not injectables (such as insulin). Concerns about medication prescribing, in general, and the use of psychotropic medications without access to or receipt of mental health services is a concern of several health care professional groups.

Assisted living nurses hold that the responsibilities associated with medication assistance and/or administration should be included in the job description of staff involved in this service. As well, they feel that the facility’s medication management policy should address continuing education for these staff, monitoring and performance evaluation methods, and a medication error reporting system. Whether or not assistance with administration of medications is officially under the rubric of nurse delegation, a UAP’s readiness to assist with or administer medication can be estimated as well as promulgated by following the 5 steps of delegation: right task, right person, right circumstances, right direction/communication, right supervision/evaluation. The extent to which this “best practice” is followed in AL communities is unknown.

Findings from the CEAL review of state regulations revealed that, in general, the term “assist” with medications refers to AL staff helping residents self-administer their own medications. This includes cueing, bringing medications to the resident, opening containers, offering liquids, and medication storage. However, states vary widely in the breadth of interpretation of “assist” and can also include directing the resident’s hand or arm. In contrast, the term “administer medications” generally refers to the actual administration of medications to a resident by licensed or unlicensed staff.

Many states do not permit UAPs to administer pro re nata (PRN) medications or Class II controlled medication. Fewer than 10 states require that a medication error or adverse drug event (eg, allergic response) is to be reported to a resident’s physician. States vary widely with regard to frequency of medication regimen review (ie, prescribing behavior) and whether or not it must be done by a pharmacist, RN, or physician.

METHODS

The survey consisted of 21 items and took approximately 10 minutes to complete. For purposes of the survey, the definition of “assistance” included any or all of these aspects: staff reminding the resident, reading the label, opening the container, checking the dose, removing the drug from the container, guiding the resident’s hand, and observing that the medication was taken. Administration was defined as including any or all of the following actions: obtaining the medication, ensuring that it was given at the correct time, placing the drug in a cup and handing same to the resident, guiding the cup to the resident’s mouth, documentation, observation of any change in resident status or behavior, storage, and administration of topical medication as eye drops.

The 3 areas of interest—prescribing, dispensing, and administering—guided item development. Responses were constructed as either Yes/No or multiple-item check-off (ie, “check all that apply”) (see Appendix for survey instrument). Several items addressed the role of the medication technician/aide, such as, administration of insulin injections and PRN meds, training and continuing education requirements. Respondents were given 1 week to respond to the survey after which it was removed from the Web mail. All responses were held confidential, data were aggregated and reported as frequencies.

RESULTS

The online survey sent to members of the 3 national AL associations elicited 1232 “hits” and 547 respondents (44% response rate). Descriptive data were obtained using the Survey Monkey program. Responses were received from AL administrators or executive directors (primarily of standalone residences) in all states except Alaska, Hawaii, Maine, and the District of Columbia. There was no relationship between the number of responses/respondents from a particular state and the number of AL residences/communities in the state.

Almost half of respondent facilities (45%) had 20 to 60 residents; approximately one quarter of facilities had between 80 and more than 100 residents. Although the respondents were asked to identify the location of their facility, there was no pattern of facility location that could inform the interpretation of the findings.

Slightly more than half the assisted living residences (ALRs) reported that 80% to 100% of their residents receive...
assistance from staff “to administer” their medications (see Table 1). Of 506 responding AL facilities, 349 (69%) use medication aides, as permitted by their respective states, to administer medications. Of the 157 facilities in states where AL regulations do not permit UAP administration of medications, a medication aide or technician can assist with medications in more than 90% of those facilities. The data are unclear if in these particular states, it has to be a medication technician, only, who can assist with medication or it can simply be one of the personal care assistive personnel.

Facilities exercise a variety of options with regard to what kind of licensed nursing staff administer medications. More than half (55%) use an RN, or licensed practical/vocational nurse (LPN/LVN) to supervise medication administration or are otherwise involved in medication management. Virtually no facilities (1.7%) use an RN consultant to administer medications.

Table 1. Characteristics of Survey Respondents and AL Residents (n = 506)

<table>
<thead>
<tr>
<th>Respondent is</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL owner/operator</td>
<td>67</td>
<td>13</td>
</tr>
<tr>
<td>AL administrator/executive director</td>
<td>266</td>
<td>53</td>
</tr>
<tr>
<td>AL facility nurse</td>
<td>119</td>
<td>24</td>
</tr>
<tr>
<td>AL regional nurse</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>AL regional corporate director</td>
<td>27</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The AL residence is</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand-alone AL</td>
<td>271</td>
<td>54</td>
</tr>
<tr>
<td>AL and IL</td>
<td>86</td>
<td>17</td>
</tr>
<tr>
<td>AL and SNF</td>
<td>48</td>
<td>9</td>
</tr>
<tr>
<td>Part of a CCRC</td>
<td>61</td>
<td>12</td>
</tr>
<tr>
<td>Dementia-specific AL</td>
<td>38</td>
<td>8</td>
</tr>
</tbody>
</table>
| Missing data                                      | 2     | — *

Number of residents in the AL

| 1–10                                             | 36    | 7  |
| 11–19                                            | 41    | 8  |
| 20–39                                            | 110   | 21 |
| 40–59                                            | 120   | 24 |
| 60–79                                            | 81    | 16 |
| 80–99                                            | 61    | 12 |
| 100+                                             | 61    | 12 |
| Total                                            | 110   | — *|

Residents receiving assistance from staff to administer their medications

| 0%–19%                                           | 18    | 4  |
| 20%–29%                                          | 18    | 4  |
| 40%–59%                                          | 80    | 16 |
| 60%–79%                                          | 115   | 23 |
| 80%–100%                                         | 275   | 54 |
| Total facilities                                 | 506   | — *|

AL, assisted living; CCRC, continuing care retirement community; IL, independent living; SNF, skilled nursing facility.

* No percentage computed.

Table 2. Written Policies and Procedures in the AL Residence (n = 506)

<table>
<thead>
<tr>
<th>The AL residence has written policies and procedures for . . .</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication orders including telephone orders</td>
<td>420</td>
<td>83</td>
</tr>
<tr>
<td>Pharmacy services</td>
<td>394</td>
<td>78</td>
</tr>
<tr>
<td>Medication packaging</td>
<td>349</td>
<td>69</td>
</tr>
<tr>
<td>Medication ordering and receipt</td>
<td>404</td>
<td>80</td>
</tr>
<tr>
<td>Medication storage</td>
<td>468</td>
<td>92</td>
</tr>
<tr>
<td>Disposal of medications and related equipment</td>
<td>449</td>
<td>89</td>
</tr>
<tr>
<td>Assessing resident self-administration ability</td>
<td>410</td>
<td>81</td>
</tr>
<tr>
<td>Medication administration by a nurse</td>
<td>288</td>
<td>57</td>
</tr>
<tr>
<td>Medication administration by a med aide/tech</td>
<td>345</td>
<td>68</td>
</tr>
<tr>
<td>Documentation of medication administration</td>
<td>460</td>
<td>90</td>
</tr>
<tr>
<td>Preparation and maintenance of resident medical records including allergies, diagnoses</td>
<td>435</td>
<td>86</td>
</tr>
<tr>
<td>Maintenance of up-to-date list of resident’s meds including prescribed, OTCs, herbs, supplements</td>
<td>435</td>
<td>86</td>
</tr>
<tr>
<td>Medication error detection and reporting</td>
<td>455</td>
<td>90</td>
</tr>
<tr>
<td>QI system including med error prevention and reduction</td>
<td>367</td>
<td>73</td>
</tr>
<tr>
<td>Medication monitoring and reporting ADE to the prescriber</td>
<td>400</td>
<td>79</td>
</tr>
<tr>
<td>Medication review including duplicate drug therapy, drug interactions, monitoring for ADEs</td>
<td>330</td>
<td>65</td>
</tr>
<tr>
<td>Storage and accountability of controlled drugs</td>
<td>451</td>
<td>89</td>
</tr>
<tr>
<td>Training qualifications, supervision and regular in-service education of staff involved in medication management</td>
<td>442</td>
<td>87</td>
</tr>
<tr>
<td>Written job description re: nature and scope of medication-related responsibilities by a nurse</td>
<td>388</td>
<td>77</td>
</tr>
<tr>
<td>Written job description re: nature and scope of medication-related responsibilities by a med tech/aide</td>
<td>368</td>
<td>73</td>
</tr>
</tbody>
</table>

ADE, adverse drug event; AL, assisted living; OTC, over the counter.
(19% and 18%, respectively). At least three fourths (76%) of AL facilities do not charge an additional medication management fee to those residents who choose not to use the primary pharmacy; almost 24% of AL facilities do levy an additional fee.

More than three fourths of ALRs do not have a medical director. Of those that do have a medical director (24%), the physician is not a certified geriatrician (58%) nor is the AL facility necessarily part of a continuing care retirement community (CCRC).

Of those ALRs that use a consultant pharmacist (68%), this is required in only half the states in which these facilities are located. Medication regimens are most commonly reviewed quarterly by the resident’s physician, consultant pharmacist, facility staff, or consultant RN. There was no discernible pattern of which professional was most likely to conduct the review.

Medication aides/technicians, even if permitted to administer insulin injections, were not permitted by state regulation to administer insulin on a sliding scale, or to administer injectable epinephrine or injectable analgesics, including opioids. Medication aides are permitted to perform glucometer readings in almost three fourths of all respondent AL facilities and are taught to do this, in most cases, by an RN.

Among those ALRs where a medication aide could administer PRN medications (392 [81%] of 485 respondents), the resident had to be able to request the medication (31% of respondents) and/or an RN or LPN/LVN had to authorize the administration of the PRN medication. (Some states require that the resident has to describe why they need the PRN medication.)

Some states require at least 21 or more hours of medication aide training whereas others require as few as 4 hours. In at least half of states, medication aides must complete and pass a written test and return demonstration or practicum test. Continuing education of at least 8 or more hours per annum is required in more than two thirds of states.

The most likely medication errors according to survey respondents are those concerning wrong dose (15%) or wrong time (20%) (ie, administration errors). Medication that was out of stock or not delivered to the facility in a timely basis accounted for 27% of medication errors (ie, dispensing errors). Medication management challenges were primarily those regarding dispensing (ie, timely delivery of medications by the pharmacy; 21% of respondents) and prescribing (ie, difficulty reaching the prescriber; 22% of respondents). The availability of appropriately trained staff (ie, administration) was the third ranked medication management problem (19%).

**DISCUSSION**

Assisted living residents take similar medications as do nursing home residents. In some cases, however, they take more medications than nursing home residents (eg, psychotropics) and a significant number are prescribed inappropriate medications. Data have indicated that the need for a coherent, responsive and safe medication management system is apparent.9,10 The survey finding that difficulty reaching the provider/practitioner (ie, physician, nurse practitioner, physician assistant) was a major issue has been addressed in the past via an issue paper of the American Society of Consultant Pharmacists.11 It spoke to prescribing issues by noting, among other things, that medications can cause or contribute to several geriatric syndromes: falls, incontinence, bowel pattern changes, sleep disturbances, and behavioral and mental status changes.

“Any symptom in an elderly patient should be considered a drug side effect until proved otherwise.”12

The Beers Criteria is an evidence-based guideline to improve medication management for the older adult. It focuses on prescribing and assessment to reduce inappropriate medication use and polypharmacy among older adults.13-15 Whether or to what extent these prescribing criteria guide a health care practitioner’s practice for their patients who reside in an AL residence is not known. Yet, a growing body of research suggests that application of the Beers criteria is associated with fewer adverse drug events and use of hospital emergency departments.16

Dispensing issues highlighted by the survey—that medications were frequently out of stock or not delivered in timely fashion—suggest the need for a negotiated delivery system and efficient communication whether or not a facility uses a preferred pharmacy provider. In several states, this would exceed AL regulations regarding pharmacy services. In addition, data regarding cost-effectiveness of a preferred pharmacy provider are not available.

Medication administration issues raised by the survey—wrong time, wrong dose—could be related to inappropriately trained staff, or to staff who are multi-tasking and unable to attend to medication administration with full attention and no interruptions. However, there are no data to support or refute these allegations. A broad-based approach to these issues would include more rigorous training and supervision of medication aides and electronic medication administration records (MAR) with an alert system that would trigger when a medication was due. Computer-based MARs are associated with increased safety in medication administration as well as efficiencies in the medication management process (eg, processing orders).17

There are four critical elements for a safe and effective medication administration: (1) structure, (2) staff competency, (3) ongoing quality improvement processes, and (4) accountability.18 Necessary factors for staff competency start at the point of hire of staff with the training, education, and experience to meet the role and responsibilities of the position for which they are hired; intensive orientation and immersion in the culture, policies, and procedures of the AL community; initial and periodic competency assessment/ evaluation; and ongoing in-service education. Accountability is toothless if there are no structures and processes in the AL facility that carry out the regulations and standards in a meaningful way.

It bears noting that the Assisted Living Workgroup’s Final Report to the US Senate Special Committee on Aging,
in 2003, recommended that medication assistive personnel (MAP) successfully complete a state-approved training course with both written and performance-based evaluation and adequate supervision by a registered nurse. Of the ALWs, many medication management recommendations, development, and utilization of a standardized job description, curriculum, and continuing education for MAPs, failed to achieve consensus endorsement by the ALW Taskforce members and was not moved forward by the industry.

CONCLUSION/NEXT STEPS

Quality improvement processes have the potential to generate best practices in medication management. Allocating sufficient resources to staff training and having more staff trained in medication management than are actually needed, as well as regular communication among the key parties in medication management, can improve the medication management system.

A 2000 ASCP policy statement regarding medication administration by UAPs spoke to the need for definitional clarity between “assisting” and “administering” medications, clarification about the scope of practice of the UAP/med aide/med tech, adequacy of training and oversight, and quality assurance systems. Yet, 27% of ALRs do not have written policies and procedures for a quality improvement system that potentially could operationalize a culture of safety regarding medication management in the residence. Similarly, 35% do not have a policy regarding drug regimen review and monitoring for adverse drug events. This can and should be rectified given the complexity of medical care and health monitoring needs of AL residents.

Assisted living residents by virtue of their community-based residence and lifestyle, have more physicians taking care of them than a nursing home resident and, not surprisingly, take as many as 10 medications a day, routinely, and 3 PRN medications. Intensive education for healthcare practitioners about appropriate prescribing for older adults is patently necessary. Implementation of the Beers Criteria as a required standard of practice of physicians (nurse practitioners, physician assistants) caring for assisted living residents could be a joint project of the American Medical Directors Association (AMDA), the American Assisted Living Nurses Association (AALNA) and the American Society of Consultant Pharmacists (ASCP). Eighty-one percent of respondents reported that they assess their residents for their ability to self-administer medications. Yet, there is no standardized measure of this ability. That research is needed is clear and it is a wonderful opportunity for collaboration of the AALNA and ASCP that could have application, as well, in home health settings. Pharmacy providers should be held to a standard regarding delivery and communication; guidelines can be developed by collaboration of the ASCP and industry representatives.

Twenty-seven percent of facilities do not provide the med aide/tech with a written job description that addresses the nature and scope of their medication-related responsibilities. Boards of Nursing in every state should be authorized to develop core competencies for medication aides/techs regarding medication administration as well as assistance (whether or not medication assistance is performed by med aides or personal care staff). One caveat, however, is that many nursing board members have little if any understanding of the assisted living care setting. This is a timely opportunity for collaboration of the AALNA and National Council of State Boards of Nursing to develop and disseminate a uniform curriculum and performance evaluation measure which, in addition to establishing best practices, can also assure AL residents, families and owner/operators of staffs’ legitimate qualifications.

Meditation aide/tech “certification,” offered in some states, should be made uniform and nationwide. Certification does not simply assure a level of competence. It also affords the med aide/tech a degree of job security, job mobility and could, in fact, be a step on the path to nurse education and licensure. Collaboration among the key professional associations and the assisted living industry to address medication management issues in assisted living could have a secondary benefit of doing something positive about the projected need for health care workers in the coming decades.

ACKNOWLEDGMENT

The author thanks Karen Love, president, Center for Excellence in Assisted Living (CEAL).

REFERENCES


APPENDIX 1

On-Line Survey Questionnaire
Medication Management in Assisted Living
NOTE - For this survey, please use the following definitions to determine your answers to the questions:

- **Medication assistance** (includes any/all of the following): staff remind resident; read label; open container; check dose; remove medication from container; hand to resident; guide resident’s hand; observe resident take medication
- **Medication administration** (includes any/all of the following): staff obtain medication; ensure medication is given at the right time; put medication in cup and hand to resident; guide cup to resident’s mouth; document medication taken; observe resident for health and/or behavior change; apply topical treatments such as eye drops; store medication

1. What percentage of your residents receive assistance from staff to administer their medications?
   - 0%–19%
   - 20%–39%
   - 40%–59%
   - 60%–79%
   - 80%–100%

2. Does your state allow medication aides/techs or other unlicensed individual in AL to administer medications? **YES NO**
   If no, does your state allow medication aides/tech in AL to assist residents with their medications? **YES NO**

3. Please mark all that apply:
   - My AL has an RN on staff to administer resident medications
   - My AL has an LVN/LPN on staff to administer resident medications
   - My AL uses a consultant RN to administer resident medications
   - My AL has an RN/LVN/LPN to supervise medication regimens
   - My AL has an RN/LVN/LPN prepare medications for medication aides/techs to deliver
   - My AL has an RN/LVN/LNP prepare medications for other staff to deliver
   - Other (describe) _____________________________

4. Does your AL have written policies and procedures for the following? Please mark all that apply:
   - Medication orders including telephone orders
   - Pharmacy services
   - Medication packaging
   - Medication ordering and receipt
   - Medication storage
   - Disposal of medications and medication-related equipment
   - Assessing resident self-administration and management capability
   - Medication administration by a nurse
   - Medication administration by a medication aide/tech
   - PRN medication administration by a medication aide/tech
   - Documentation of medication administration
   - Preparation and maintenance of current resident medication records including allergies, diagnoses
   - Maintenance of up-to-date list of resident medications including prescribed, OTCs, herals, and nutritional supplements
   - Medication error detection and reporting
   - Quality improvement system including medication error prevention and reduction
   - Medication monitoring and reporting of adverse drug effects to the prescriber
   - Review of medications including duplicate drug therapy, drug interactions, monitoring for adverse drug interactions
   - Storage and accountability of controlled drugs
   - Training qualifications, supervision and regular in-service education of staff involved in medication management
   - Written job description that identifies the nature and scope of medication-related responsibilities by a nurse
   - Written job description that identifies the nature and scope of medication-related responsibilities by a medication aide/tech
5. Does your AL require a primary pharmacy? YES NO
   If yes, what percentage of your residents use your AL’s primary pharmacy?
   0%–19% 20%–39% 40%–59% 60%–79% 80%–100%

6. What type of medication packaging does your AL’s primary pharmacy use? Please mark all that apply:
   Blisters cards (bingo cards)
   Pillow pack (multiple meds given at same time are packaged together)
   Traditional bottle/vial (ex: multiple doses of a medication in one bottle/vial)
   Other type of unit dose system (describe) ______________

7. Does your AL charge a medication management fee to residents who do not use the primary pharmacy? YES NO

8. Does your AL have a medical director? YES NO
   If yes, is the AL part of a CCRC? YES NO
   If the AL has a medical director, is he/she a geriatrician? YES NO

9. Does your AL use a consultant pharmacist? YES NO
   If yes, is the consultant pharmacist required by your state? YES NO

10. How often are resident medication regimens reviewed by the following licensed health care professional?
    RN never monthly quarterly every 4 mos every 6 mos annually
    LVP/LPN never monthly quarterly every 4 mos every 6 mos annually
    MD never monthly quarterly every 4 mos every 6 mos annually
    Pharmacist never monthly quarterly every 4 mos every 6 mos annually

11. Who in your AL is permitted to administer injections? Mark all that apply: YES NO
    Resident self-administered
    RN
    LVN/LPN
    Medication aide/tech
    Other (describe) __________________________

12. If your state allows medication aids/techs to administer insulin injections, are they permitted to administer insulin on a sliding scale? YES NO
    If yes, how is the insulin drawn? ______________
    If no, how is resident’s insulin needs managed? ______________

13. If your state allows medication aids/techs to administer injections, are they permitted to administer:
    Epinephrine/adrenalin injections YES NO
    Opioids or injectable analgesics

14. Are medication aides/techs trained to do glucometer readings? YES NO
    If yes, by whom are they trained? Mark all that apply:
    AL administrator/executive director
    RN
    LVN/LPN
    Other medication aides/techs
    Other (describe) __________________________

15. Can medication aides/techs administer a PRN medication? YES NO
    If yes, under which conditions? Mark all that apply:
    Medication aide/tech observes resident's need for PRN medication
    Resident asks for PRN medication
    Family member asks that their loved one receives a PRN medication
    RN, LVN/LPN observes resident's need for PRN medication
    RN, LVN/LPN authorizes a PRN medication for administration
    Other (describe) __________________________

16. If your state permits medication aides/techs to administer medications, how much training does the state require before they can begin administering medications?
    0–3 hours 5–10 hours 11–15 hours 16–20 hours 21+ hours

17. If your state permits medication aides/techs to administer medications, please mark all that apply before they can begin administering medications:
    Aides must complete a state-approved training course off-site of the AL
    Aides must complete a state-approved training course on-site of the AL
    Aides are trained by the AL staff
    Aides must complete and pass a written test
    Aides must demonstrate and pass a practicum test
    Other (describe) __________________________
18. If your state permits medication aides/techs, is continuing education required by your state annually?  
   YES  NO
   If yes, how many total hours of continuing education are required?
   1–2 hours/year  3–5 hours/year  6–8 hours/year  more than 8 hours/year
   If no, is continuing education required by your state biannually?  YES  NO

19. Who is primarily responsible in your AL for reviewing lab data for residents?
   RN  
   LVN/LPN  
   Consultant pharmacist  
   Resident’s physician  
   AL’s medical director  
   Medication aides/techs  
   No one

20. In the past year, what are the most likely types of medication errors your AL experienced? Mark all that apply:
   Wrong resident  
   Wrong dose  
   Wrong route  
   Wrong time  
   Wrong medicine  
   Illegible order  
   Wrong medicine sent by pharmacy  
   Medication out of stock or not delivered to the AL  
   Hospital, SNF or rehabilitation facility transfer information incomplete or incorrect

21. What are the most pressing challenges your AL experiences regarding medication management? Please mark all that apply:
   Appropriately trained staff  
   Adequate numbers of staff  
   State regulations  
   Timely delivery of medications by pharmacy  
   Difficulty reaching the physician/nurse practitioner  
   Inadequate supervision by licensed personnel  
   Other (describe) ______________________