

Predictors of Psychotropic Use in Medicaid-Funded Residential Care Facilities

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Introduction:

The older adult population is the fastest growing segment of the US population. In the year 2000, 12.4% of the United States population was aged 65 and older. It is estimated that this number will rise to 20.7% by the year 2050.¹ As the older adult population continues to grow, the number of persons requiring long-term care is also expected to increase. Historically, the majority of older adult institutionalized care has been provided in skilled nursing facilities, facilities that mainly provide services to the chronically ill elderly.² In the past decade, however, residential type settings have emerged as popular alternatives for individuals who require assistance, supervision, and limited health care services, but do not require the level of care provided by skilled nursing facilities.^{3, 4} These type of facilities are known by many names such as residential care facilities, board and care facilities, personal care homes, and assisted living facilities.^{3, 4, 5} Unlike nursing homes, they lack federal regulations and existing state regulations vary widely.

A recent two year, four state United States General Accounting Office survey assessing quality of care in assisted living facilities found medication related problems were common and included residents not receiving prescribed medication as well as residents receiving the wrong medication.⁶ Assisted living facility staff are often insufficient in numbers and many times do not possess the training and skills needed to monitor resident's medications. In addition, few assisted living facilities have pharmacist-conducted monthly drug regimen reviews, federally mandated services shown to reduce drug related morbidity and mortality costs in nursing homes.⁷ Thus, a concern exists regarding quality of medication use in these settings.

Another area of considerable concern is the use of psychotropic medications in residential care facilities (e.g. antidepressants, antipsychotics and sedatives/hypnotics). Many individuals in these facilities have cognitive or behavioral impairments, often associated with high psychotropic use.² Limited data indicates the prevalence of psychotropic medication use in residential care facilities is high, ranging from 34% to 55%.^{8, 9, 10} In one study, 30% of residents were using multiple psychotropics. To place this in perspective, prevalence of use in these facilities is similar to the extent of psychotropic use in nursing homes prior to the implementation of the OBRA-87 reforms and regulations (20-50%)¹¹ and considerably higher than what is observed in community dwelling older adults (10-19%)^{12, 13}.

Older adults are at an increased risk for adverse effects from psychotropic medications as a result of age related pharmacokinetic and pharmacodynamic changes. In fact, numerous studies support the relationship between psychotropic use in older adult patients and adverse outcomes, including increased falls, increased fractures, and cognitive impairment.^{14, 15, 16, 17, 18, 19, 20} Although psychotropic medications play an integral role in the treatment of a variety of conditions, their use should be carefully scrutinized and managed to avoid adverse outcomes. However, a 10-state study examining psychotropic use in board and care facilities found that almost 42% of individuals receiving three or more psychotropic medications had not seen a health care provider for a mental health condition in the prior year, suggesting a lack of monitoring.²¹

In facilities where staff may not have the necessary skills or time to care for residents with dementia or behavioral impairments, psychotropic medications may be used as chemical restraints, whereas other nonpharmacological strategies may be more appropriate. Thus, it is important to examine factors, especially facility level factors, that might be related to psychotropic use. In nursing home settings, inadequate staffing has been associated with increased psychotropic use²² while increased overnight staffing has been associated with decreased psychotropic use.¹¹ It is not unrealistic to expect similar findings in residential care facilities.

More research is needed to confirm and expand upon our current knowledge of psychotropic medication use in community residential care facilities and better define the relationship between resident and facility characteristics and psychotropic medication use. Furthermore, information summarizing the quality of psychotropic prescribing in these settings is also needed. For example, within a psychotropic medication class, is the safest medication being used?

Objectives

The objectives of this study are to (1) describe patterns of psychotropic use in older adult residents of community residential care facilities in a 3-county area in Washington State at baseline and exposure to psychotropic medications over the one year follow up, (2) describe the quality of psychotropic medication use, and (3) examine the relationship between psychotropic medication use and resident and facility characteristics.

Project Methods:

Sample

This study is a secondary analysis of a prospective cohort study conducted in a 3-county area of Washington State from 1998 to 1999. The original study sought to describe characteristics of residents entering residential care facilities and detail outcomes of care 12 months after study enrollment.⁵ Potential study participants were state or Medicaid funded individuals who newly entered or newly received Medicaid in an adult family home, adult residential care, or assisted living facility during a 6-month period in 1998. Individuals eligible for the study were placed in the setting by department of social and health services (DSHS) home and community services (HCS) division. Residents with developmental delay or mental illness placed by other state agencies were not included. A total of 583 potentially eligible residents were referred to the study. Of those, 132 refused enrollment, 102 were ineligible at the baseline interview (died, no longer living in facility, no longer receiving state assistance, too ill for study enrollment, limited English), and 349 enrolled in the study. A total of 219 facilities were included in the study.

Data Collection and Sources

Data were collected from several sources including state and Medicaid databases, interviews with residents, direct care providers, and caregivers, and questionnaires completed by administrative personnel. When a resident was too cognitively impaired for an interview, a proxy was interviewed instead. Table I describes the data source for each of the variables and whether it is a resident or facility level variable. Variables will be described in greater detail below.

Table I: Variable data sources

Data Source	Variable	Type of variable
Medicaid files	Psychotropic use ICD-9 codes for psychiatric diagnoses	Resident level
State database	Age, gender, race	Resident level
Resident (or proxy) Interview	Activities of daily living (ADL) performance Instrumental activities of daily living (IADL) performance Global health status Cognitive status	Resident level
Direct care provider	Psychotropic medication use Memory and behavioral problem assessment	Resident level
Administrative Personnel Interview	Staffing rates Occupancy rates Facility ownership (part of a chain)	Facility level

Definition of Psychotropic Use

The major source of medication information was the Medicaid pharmacy prescription claims computerized database. The Medicaid files were available for one year prior to and one year following the baseline interview. Data fields collected relating to medication use included national drug code number (NDC), number of units dispensed, and days' supply. For subjects without medication claims in the Medicaid database due to recent enrollment (6%), drug therapy was determined from facility medication administration records (MARs).

Additional information regarding antipsychotic, sedative, and hypnotic use was obtained from interviews with the direct care providers. The direct care providers were asked targeted questions for residents who did not self-administer medications. These questions determined the indication of the medication, whether the medication was taken on a scheduled basis or only as needed, and whether it was effective in treating the target behavior.

Residents will be classified as users or non-users of psychotropic medications. A resident will be considered a user if Medicaid records indicate a prescription was filled for a psychotropic medication within 45 days prior to the date of the baseline interview or if documentation in the facility MAR indicates the medication was taken within a week prior to the baseline interview.

Exposure to psychotropic medications will be described for subjects during the one-year follow up period by summing the days' supply of Medicaid claims for each specific psychotropic medication. If two Medicaid claims overlap, the days' supply of the earlier claim will be truncated at the date of the later claim. Daily doses will be calculated by dividing the product of the dosage strength and quantity dispensed by the days supply.

Psychotropic medications will be categorized into four distinct categories: antidepressants, sedative/hypnotics, antipsychotics, and mood stabilizers. These categories will be further divided into individual therapeutic classes for descriptive purposes, as summarized in table II.

Table II: Psychotropic medication classes

Medication	Baseline use	Use during one-year follow-up		
		Any use (%)	Days of exposure/100 person-days (psychotropic users only)	Days of exposure/100 person-days (complete sample)
Antidepressants				
SSRIs				
Tricyclic antidepressants —secondary amines				
Tricyclic antidepressants - tertiary amines				
Trazodone				
Other				
Antipsychotics				
Atypical agents				
Conventional agents – high potency				
Conventional agents – low potency				
Mood stabilizers				
Sedatives/hypnotics				
Long-acting benzodiazepines				
Short-acting benzodiazepines				
Other				

In order to address quality of psychotropic prescribing, within each category suboptimal use will be defined as follows:

1. Antidepressants
 - a. Use of tertiary tricyclic antidepressants
 - b. Use of more than one agent from each subclass (i.e. more than one SSRI)
2. Antipsychotics
 - a. Use of a low potency conventional antipsychotic
 - b. Use of more than one agent
3. Mood stabilizers
 - a. Use of more than two agents
4. Sedatives / hypnotics
 - a. Use of long-acting benzodiazepines
 - b. Use of more than one agent

5. All categories

Use of agents at estimated daily doses exceeding the defined daily dose (DDD).²³ The DDD, developed by the World Health Organization, is the assumed average daily dose of a drug for its main indication in adults and is the result of an international consensus.²⁴ The calculated daily dose of psychotropic medications used by subjects will be divided by the DDD. A ratio greater than one in older adults has been used to indicate potentially inappropriate use.²⁵

Independent variables

We selected several resident level and facility level factors that might be related to psychotropic medication use

Resident level: Resident level factors will include information on demographics (gender, age, race), functional status [activities of daily living (ADL), instrumental activities of daily living (IADL)], health status, memory and behavioral problems, cognitive status, and presence of an office visit for a psychiatric diagnosis.

Functional status: The resident's performance of 6 ADLs over a 7-day period was assessed. The 6 ADLs included bathing, dressing, locomotion, transferring, toileting, and eating. A score was given, from 0 to 6, representing the number of ADLs the resident needed assistance with during this 7-day period.²⁶ Performance of 4 IADLs (shopping, making telephone calls, managing money, and getting around outside the setting) over a 7-day period was examined. Determination was made as to whether the resident received assistance, did not receive assistance, or the activity did not occur.²⁷ Residents who received a score of 1 or a greater for each functional status measure will be considered impaired for that measure.

Health status: Global health status was evaluated using the Short Form-12 (SF-12).²⁸ The SF-12 assesses physical and mental health components.

Memory and behavior problems: Memory and behavioral problems were assessed with the Revised Memory and Behavior Problem Checklist (RMBPC), a scale which assesses how often 24 behaviors are observed by the caregiver, from never to on a daily basis or more often.²⁹ Scores are provided for behavioral problems overall and for three sub-scales: memory-related problems, depression, and disruptive behaviors. The checklist also evaluates the caregivers' reactions to the behavioral problem.

Cognitive status: Cognitive status was assessed by use of The Short Blessed Test.³⁰ The Short Blessed Test includes questions assessing orientation, memory, and concentration. Subjects who scored at least 8 on the Short Blessed Test or who were unable to complete the test due to cognitive impairment were considered cognitively impaired.

Office visits for a psychiatric diagnosis in the year before baseline: Presence of an office visit for a psychiatric purpose will be assessed by the use of Medicaid database ICD-9 diagnosis codes. If the Medicaid database indicates the presence of an ICD-9 code for a DSM-IV mental health diagnosis³¹ for an outpatient claim, the corresponding health care visit will be considered a mental health visit.

Facility level: Facility characteristics will include staffing rates, occupancy rates, and facility ownership.

Staffing and occupancy rates: Staffing rates will include the number of direct care staff, the number of nighttime staff, and nurse to resident ratios. Occupancy rates were based on the number of residents living in the facility and the number of licensed beds.

Facility ownership: Determination was made as to whether a facility was independently owned or part of a chain. A facility was considered part of a chain if more than two facilities were under the same ownership.

[illegible]

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