



THE LOUIS DE LA PARTE FLORIDA MENTAL HEALTH INSTITUTE



Involuntary Psychiatric Examination and Psychiatric Hospitalization of Medicaid Enrolled Nursing Home Residents

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Executive Summary

The ability of nursing homes (NHs) to manage the mental health needs of their residents is crucial to providing high-quality care. A key element is preventing exacerbations of psychiatric conditions that trigger involuntary, or Baker Act (BA), examinations and/or psychiatric hospitalizations. Because these events are particularly costly and disruptive for vulnerable NH residents, it is important to identify, and when possible, control risk factors. The primary objective of this study was to examine the relationship between resident and facility characteristics, state reimbursement policies, and the rate of BA examinations and psychiatric hospitalizations for Medicaid beneficiaries residing in Florida's nursing homes. The ultimate goal is a high quality-of-life (QOL) and care for NH residents with mental health needs.

Key Findings

The odds of a BA examination were more than 50% higher in NH residents under 65 years of age compared to residents over 65 years. BA examinations were also more than twice as likely to occur in men, with women having 61% lower odds of a BA examination. Race was not associated with the odds of a BA examination but having dementia increased the odds. Having a serious mental illness (SMI) increased the odds of a BA examination, with major psychotic disorder and bipolar disorder showing the strongest effect of about a 11-fold increase in the odds of a BA examination

Among nursing home residents, the odds of a behavioral health (BH) hospitalization were more than 60% lower in residents over the age of 65 years. BH hospitalizations were more likely to occur in men, with women having 33% lower odds of at least one BH hospitalization. Race was not associated with the odds of a BH hospitalization. Having dementia more than doubled the odds of a BH hospitalization. The included serious mental illnesses (SMIs) were all associated with increased odds of a BH hospitalization. Major psychotic disorder showed the strongest effect and increased the odds of a BH hospitalization more than 11 times. Co-morbidity as measured by the Charlson Index score was associated with increased odds of a BH hospitalization such that having a score of 1 or more increased the odds of a BH hospitalization by about 50% compared to having a score of 0. Among facility level characteristics, only being a member of a chain yielded a result that approached statistical significance ($p = .072$). Specifically, BH hospitalizations were somewhat more common in facilities that were members of a chain compared to those that did not belong to a chain.

Online Survey Certification and Reporting (OSCAR) data indicate that almost all (98%) facilities studied did not meet Centers for Medicaid and Medicare (CMS) RN staffing standards. This is particularly unfortunate because in facilities with

inadequate staffing, exacerbations of psychiatric symptoms in residents with mental illness are more likely to occur, and less likely to be well managed. Improving RN staffing would likely decrease the frequency of these events.

Additional results indicate that while most residents were prescribed psychotropic medication, less than a half received non-pharmacological behavioral health outpatient services before or after either the BA examination or the BH hospitalization.

Finally, results indicate that the frequency of both BA examinations and BH hospitalizations declined following the July 1, 2004 change in the state bed-hold policy. Further, the percent of residents returning to their original nursing home after these events also declined following that change in policy.

Conclusions and Policy Recommendations

Study findings indicate that facility characteristics, resident characteristics, and Medicaid bed-hold policy all impact the rate of BA examinations and BH hospitalizations. Data show that residents in facilities that are part of a chain, residents under age 65, males, persons with SMI and those with dementia are most at risk for a BA examination or BH hospitalization. The fact that almost half 44% of those with a BA examination and 52% of the residents with a BH hospitalization, had AD or other dementia is of particular concern. Residents with dementia are at high risk for relocation stress syndrome (RSS). In older adults RSS is associated with an increase in mortality and morbidity. Therefore, everything possible should be done for these residents to decrease the risk of relocation to a hospital or BA facility and increase the likelihood of their return to the nursing home that initiated their transfer.

The reasons for the observed decrease in BA examinations and BH hospitalizations of nursing home residents following the July 1, 2004 change in Florida's bed-hold policy are unknown. However, it is possible that the new policy decreased a potential financial incentive under the old policy to initiate these events. Once a resident was out of the nursing home, lack of payment for their empty bed might have reduced the nursing home's ability to reserve that bed and readmit the resident after their BA examination or BH hospitalization.

Study results warrant further longitudinal research to determine if the patterns of BH hospitalization and BA examination observed in this study remain constant over a longer time frame, and if some residents might refuse needed hospitalization to avoid loss of their bed when reserve payment is not available. Our findings highlight the salience of resident and facility characteristics to prevalence rates of BA examinations and BH hospitalizations. Findings also reveal the importance the state's bed-hold policy and indicate a need to align state Medicaid and federal Medicare policies with regards to payment for acute, maintenance, and preventive behavioral health care in nursing home settings.

Introduction

Over the past two decades increased attention has been directed at mental health services provided to NH residents (Bartels, Miles, Dums & Levine, 2003; Bartels, Moak, & Dums, 2002; Bartels, Mueser & Miles, 1997; GAO, 2007; Mosher-Ashley, Turner, & O'Neill, 1991; Tariot, Podgorski & Blazima, 1993;). The federal Omnibus Budget Reconciliation Act, also known as the Nursing Home Reform Act (OBRA 1987. P.L. 100-203), targeted the potential problem of transinstitutionalization (transfer of persons with serious mental illness [SMI] from state hospitals into nursing homes). This legislation focused on residents who either do not require nursing home level of care or whose needs cannot be met in this environment. Unfortunately, the implementation of OBRA has been exceedingly slow and there is anecdotal evidence of persons with mental illness being inappropriately placed in nursing homes (Mechanic & McAlpine, 2000).

In addition to elevated mortality associated with relocation, NH residents experience elevated levels of mental health problems compared to the general population (Avorn, Soumerai, & Everitt, 1992; McKinney, & Melby, 2002; Kane, Ouslander, & Abrass, 2004; Streim, Rovner, & Katz, 1996). Empirical data indicate about 80% of NH residents have a diagnosable psychiatric disorder (Kim & Rovner, 1995; Strahan, 1997). Over half of NH residents are diagnosed with dementia, 40% suffer from depression, and between 3% and 20% from anxiety (Jones, Marcantonio, & Rabinowitz, 2003; Kim & Rovner, 1996; Rosen, Rogers, Marin, Mulsant, Shabar & Robert, 1997; Parmelee, Katz, & Lawton, 1993). Despite these statistics, research indicates that few residents receive appropriate mental health treatment and less than 20% are treated by a mental health professional (Bartels, Moak, & Dums, 2002; Shea, Russo, & Smyer, 2000; Shea, Streit, & Smyer, 1994). While this situation and transinstitutionalization of persons with mental illness into nursing homes have been well documented, little is known about facility or resident characteristics that increase risk of BA examination or psychiatric hospitalization.

Quality of Care

Quality of care in NHs has been a focus of research for years (Becker & Mehra, 2005; Polivka, Salmon, Johnson, & Hedgecock, 2003; Mor, Zinn, Angelelli, Teno, & Miller, 2004, Timko et al., 1993; Zinn, 1994; Zinn & Mor, 1994). Findings indicate a number of structural characteristics, such as ownership type, chain affiliation, facility size, funding sources, registered nurse (RN) staffing levels, resident characteristics, percentage of residents with serious mental illness (SMI), and reimbursement policies -- affect the quality of care provided (Aronson, Zinn, & Rosko, 1994; Castle & Engberg, 2006; Grabowski, 2001; Grabowski, Feng, Intrator, & Mor, 2004; Harrington, Woolhandler, Mullan, Carrillo, & Himmelstein, 2001; Harrington, Zimmerman, Karon, Robinson, & Beutel, 2000; Intrator & Mor, 2004; Nyman, 1987; Spector, Selden, & Cohen, 1998).

Structural Characteristics

Ownership Type

Studies measuring the impact of ownership characteristics have been inconsistent. For example, Kane, Kane, and Ladd (1998) found few differences in quality of care based on ownership type, while Davis (1991) reported that care suffered in for-profit facilities. For Medicaid and self-pay residents, nonprofits appear to provide higher quality of care (Aronson, Zinn, & Rosko, 1994; Zinn, Aronson, & Rosko, 1993). In addition, fewer complaints are filed with the state against nonprofit NHs (Riportella-Muller & Slesinger, 1982; Steffen, 1997).

Facility Size

Research findings by Zinn, Aronson & Rosko (1993) revealed that larger NHs in Pennsylvania had greater rates of restraint use and pressure ulcers, while smaller facilities had more managerial involvement with families and residents leading to perceptions of better care. Overall, however, evidence connecting facility size and quality is inconclusive and warrants further investigation.

Staffing

Numerous studies demonstrate that staffing levels impact resident quality of care (Bliesmer, Smayling, Kane, & Shannon, 1998; Harrington, Zimmerman, Karon, Robinson, & Beutel, 2000). Low staffing levels are a predictor of lawsuits, which is considered an indicator of poor care (Johnson, Dobalian, Burkhard, Hedgecock, & Harman, 2004). However, the optimal level and mix of nursing home staffing for quality care remains uncertain (Davis, 1991; Steffen, 1997). A review of five studies concluded that licensed practical nurse (LPN) and certified nursing aide (CNA) staff-to-patient ratios contribute little to quality differences (Davis 1991). Meanwhile, some evidence suggests that high RN staffing levels improve service delivery (Steffen, 1997).

Hospitalizations of Nursing Home Residents

Relocation of nursing home residents to a hospital or other institution is common and associated with an increase in mortality and morbidity (Burns, 1991; Semke & Jensen, 1997; Thorson & Davis, 2000; McKinney & Melby, 2002; Mikhail, 1992). In any 6-month period as many as 25% of NH residents may be hospitalized (Castle & Mor, 1996; Intrator, Castle & Mor, 1999). In addition to resident characteristics and severity of illness, nursing home characteristics, nurse staffing ratios, and Medicaid reimbursements have all been associated with hospitalization rates (Freiman & Murtaugh, 1993; Intrator, Castle & Mor, 1999; Intrator, & Mor, 2004). Recent research suggests many NH resident hospitalizations are potentially preventable (Intrator, Gradowski, Zinn, et al., 2006; Intrator, Zinn & Mor, 2004; Mor, Intrator & Fries et al., 1997; Saliba, Kington, & Buchanan, et al., 2000). Hospitalizations and institutional relocation expose NH residents to iatrogenic illness, delirium and relocation stress syndrome (RSS), defined as physiologic and/or psychosocial disturbances resulting from transfer from one environment to another (Mallick, et al., 2000; Ouslander, Wennberg & Phillips, 2000). Hospitalizations also increase subsequent service utilization and post-hospitalization costs (Swan, Bhagavatula, & Algotar, 2001). Therefore, it is important to understand how Medicaid reimbursement policies and other factors affect hospitalization rates.

Resident Characteristics

Data suggest that NH facilities with a high percentage of private-pay residents provide additional services directly related to residents' well being and family satisfaction. These facilities tend to have higher occupancy rates and fewer residents with SMI than NHs with a low percentage of private-pay residents. Faced with strong incentives to control costs, facilities with few private-pay residents tend to reduce nursing and social services (Holahan & Cohen, 1987; Steffen, 1997). Such practices might well increase the risk of both unnecessary hospitalizations and involuntary psychiatric examinations (McCarthy, Blow & Kales, 2004; McGrew, 1999).

Medicaid Reimbursement and Bed Hold Policies

In 1960 nursing home expenditures represented 3.4 % of national healthcare spending; by 2005 it was 11% or \$72.7 billion, of which \$23.7 billion was paid for by state Medicaid programs (Grabowski, Feng, Intrator & Mor, 2004; GAO, 2007). In the past decade Medicaid policy discussions have focused on the ever-increasing budgetary demands associated with NH care (Cohen & Dubay, 1990; Cohen & Spector, 1996; Grabowski, Feng, Intrator & Mor, 2004; Mor, Zinn, Angelelli, Teno & Miller, 2004). To balance their budgets states requested more flexibility to set Medicaid policy. With the repeal of the Boren amendment in 1997 they were granted more freedom to do this (Krauss, Freiman, Rhoades et al., 1997).

Important to our research are recent changes to Florida's bed hold policy. Payments for bed hold days are not required under Title XIX of the Social Security Act. Federal Regulation (CFR) 447.40, 42 Code stipulates that "The Medicaid agency may make payments to reserve a bed during a recipient's temporary absence from an inpatient facility if (1) the State plan provides for such payments and specifies any limitations on policy and (2) absences for purposes other than required hospitalizations are included in the patient's plan of care".

Nursing home bed hold policy is intended to ensure that residents will have a bed when they return from a hospitalization or therapeutic leave, thus reducing unnecessary relocation and NH discharge. Medicaid bed hold reimbursement has existed under Florida state law since 1978. However, the extent of coverage has recently changed. Under the new Medicaid policy (enacted on July 1, 2004) residents are restricted to 16 bed hold days for each fiscal year for home visits and 8 bed hold days per hospital stay. To qualify for reimbursement, NHs must demonstrate at least a 95% Medicaid occupancy rate in the previous quarter. The policy letter to providers clearly states "Medicaid will not pay for bed hold when a resident goes to a hospital or on a therapeutic leave if 5% or more of certified beds are available." A copy of the Medicaid Policy letter to providers is found in Appendix B. (Appendix B is missing)

Baker Act

The section of Florida Statutes that addresses involuntary psychiatric treatment is known as the Baker Act (F.S. Section 394, Part I, 2005). Similar to laws in other states, the Baker Act allows for involuntary examination and short-term confinement. Individuals are evaluated based on evidence of mental illness and intent to harm self or others, or self-neglect. These examinations take place at over 100 Baker Act receiving facilities, including community mental health centers, general hospital psychiatric units, and psychiatric hospitals. Examinations may be initiated by mental health professionals, law enforcement officials, and via a judge's order. Individuals may be held for examination for up to 72 hours.

After the examination, a petition for longer-term involuntary placement ("civil commitment") may be made. Commitment, which can last up to six months, or

release, must be approved at a judicial hearing. Individuals may also voluntarily admit themselves for a psychiatric evaluation. However, they must be competent as per U.S. Supreme Court Case *Zinerman v. Birch* (1990). This is particularly important for NH residents, given frequent questions surrounding decision-making capacity.

NHs are regulated by both federal (OBRA) and state (F.S. Chapter 400) (should this be F.S. Section 400, 2005?) laws. A focus of OBRA is to assure that residents with special needs can be treated within the nursing home whenever possible. These laws also detail the circumstances under which individuals can be transferred or denied readmission to nursing homes. Refusing to allow a resident to return a nursing home following a BA exam may violate federal law depending on the circumstances. Such refusal sometimes triggers an AHCA investigation.

Some elements of Florida Statutes also apply to our study. The Baker Act includes additional safeguards related to voluntary psychiatric care. The following persons cannot be sent to a BA receiving facility on a voluntary basis until they undergo an initial assessment of their ability to give informed consent:

- A person 60 years of age or older for whom an emergency transfer is being sought from a nursing home pursuant to Florida Statutes, section 400.0255(6).
- A person 60 years of age or older with a diagnosis of dementia for whom transfer is being sought from a:
 - > Nursing home
 - > Assisted living facility
 - > Adult day care center, or
 - > Adult family care home
- A person for whom medical decisions are currently being made by a health care surrogate or proxy as designated in Florida Statutes on Health Care Advance Directives (F.S., section 765, 2005).

This initial assessment must be done at the sending facility and be performed by specific persons (including those working for a mental health overlay program, mobile crisis response team, or any licensed mental health professional allowed to initiate Baker Act exams).

Baker Act Data

The Baker Act requires facilities to submit evaluation paper work to the Florida Agency for Health Care Administration. Since 1997 FMHI has received a copy of these initiation forms to enter and store these data on behalf of the AHCA. Information from these BA forms was utilized for the current study.

Overall Study Design and Objectives

The current study builds on our prior research regarding the treatment of NH residents with SMI in Florida (Becker & Mehra, 2005). The primary objective is to examine the association between resident and facility characteristics, state reimbursement policies, and the rate of BA examinations and behavioral health psychiatric hospitalizations of Medicaid beneficiaries residing in Florida's NHs. The ultimate goal is to improve quality of life and care for NH residents with mental health needs.

Specific Aims and Hypotheses:

Aim 1: Examine the relationship between NH facility characteristics and the prevalence of BA examinations and BH hospitalizations.

Hypothesis 1. Not-for-profit NHs will have a lower rate of BA exams and BH Hospitalizations compared to for-profit facilities.

Aim 2: Determine the relationship between resident demographic and diagnostic characteristics and the prevalence of involuntary psychiatric examinations and psychiatric hospitalizations. This will include examining racial/ethnic prevalence rates.

Hypothesis 2. NH residents with minority status will have a higher rate of psychiatric hospitalizations and BA examinations than White residents.

Aim 3: Investigate the relationship between Medicaid reimbursement, bed hold policy and the prevalence of BA examinations and psychiatric hospitalizations. The study will also determine how often residents return to the same nursing home that discharged them for either a BA examination or psychiatric hospitalization.

Hypothesis 3. The prevalence of psychiatric hospitalizations and BA examinations will be inversely related to the number of reimbursement days covered in the state's bed hold policy. In addition, return rates to the same NH will be lower than before reimbursement policy changed in 2004.

Aim 4: Understand the treatment history, including pharmacotherapy, of NH residents that precedes and follows a BA exam or psychiatric hospitalization.

Hypothesis 4. NH residents receiving mental health treatment will have fewer psychiatric hospitalizations and BA examinations than those not receiving treatment.

Aim 5: Determine the relative significance of risk factors for BA examination and psychiatric hospitalization.

Hypothesis 5. Predictors of increased risk will likely include being male, younger aged, and from a minority population.

Sampling Framework

This study sample included all nursing homes in Florida that had a valid Medicaid Provider identification number and could be matched with corresponding Online Survey Certification and Reporting (OSCAR) facility data. The resident sample included all continuously Medicaid eligible NH residents residing in the eligible nursing facilities as of December 31, 2002. Presence of a mental disorder was determined by documentation in the Medicaid claims files of one of the ICD-9-CM codes found in Table 1.

Table 1
Diagnostic Definitions

Diagnosis	Description
Disorders making up definition of Serious Mental Illness or SMI	
Major Psychotic Disorder	Anyone with an ICD-9 diagnosis code beginning with 295 (schizophrenia), 297.1 (delusional disorder), 297.3 (shared psychotic disorder), 298.8 (brief psychotic disorder), or 298.9 (psychotic disorder NOS)
Bipolar Disorder	Anyone without a major psychotic disorder and with an ICD-9 diagnosis code beginning with 296.0, 206.1, 296.4, 296.5, 296.6, 296.7, or 296.80 or 296.89
Major Affective Disorder	Anyone without a major psychotic disorder, bipolar disorder and with an ICD-9 diagnosis code beginning with 296.2, 296.3, 296.90 & 311
Other Diagnoses	
Alcohol Use Disorder	Anyone with an ICD-9 diagnosis codes 291, 303.0, 303.3, 303.9 & 305.0
Drug Use Disorder	Anyone with an ICD-9 diagnosis code beginning with 292.0-292.9 304.0-304.9 305,2 to 305.9
Alzheimer's Disease	Anyone with an ICD-9 diagnosis code of 331.0
Other Dementia	Anyone with an ICD-9 diagnosis code beginning with 331.1-331.9 294.1and 290.0-290.9
Mental Retardation	Anyone with an ICD-9 diagnosis codes 317, 318, 318.o, 318.1, 318.2 or 319

Method and Data Sets

This cross-sectional retrospective study employed three years (FY 02-05) of Medicaid eligibility, fee-for-service, pharmacy, and Baker Act data to examine resident characteristics. OSCAR data were used to identify specific nursing facility characteristics. Multivariate logistic regression analysis, adjusted for individual and facility levels of data, was employed to determine the relative importance of predictive factors for experiencing a BA examination or psychiatric hospitalization. Bivariate analysis and prior research were used to determine the final set of predictor variables.

In order to identify Baker Act episodes and behavioral health hospitalization episodes that could reasonably be attributed to circumstances associated with the person's stay in the facility that they were in on 12/31/2002, the start of this study, we identified the length of the episode of care for that person within that particular facility. We then extracted all Medicaid institutional claims for the persons in our sample that were associated with the facility in which they resided on 12/31/02. These claims were then analyzed to determine the length of time for which care was provided and claims were paid during which there were no gaps greater than 62 days. Once we found a time greater than 62 days for which there were no claims for that person for nursing home care in the facility of interest, we assumed that they were no longer in that facility. Nursing home claims rarely exceed 31 days and thus a gap of 62 days means that there was no billing for two months. There is little likelihood that a resident would be housed in a facility for two months without a claim. The episode of nursing home care in that particular facility was then considered to have ended as of the last service date indicated on the claims prior to that gap. Behavioral health hospitalizations were identified by examining the diagnosis on the inpatient claims. Those containing a BH diagnosis were considered BH hospitalizations.

Results

Question 1: What is the relationship between NH facility characteristics and the prevalence of BA examinations and psychiatric/behavioral health hospitalizations?

Tables 2a and 2b present facility characteristics for all eligible facilities. Of the 704 nursing homes in Florida we were able to gather valid OSCAR and Medicaid data for a total of 584 facilities that housed 32,604 residents. Reasons for the inability to match data for the remaining 120 nursing homes include missing and duplicate Medicaid IDs and/or incomplete data in the OSCAR files.

Overall Facility Characteristics

Results in Tables 2a and 2b reveal that 64% of facilities studied were part of a chain, 77% were for-profit, and 69% were 120 or more beds. On average, only 23% of nursing home residents were private pay, and only 3% or 19 facilities met CMS registered nurse (RN) staffing level requirements. About two thirds had a quality of care (QoC) citation. The facilities average yearly occupancy rate was 87%.

Facility Characteristics and Baker Act Examination

Facility characteristics by BA examination are presented in Table 2a. About a third (32%) of facilities initiated at least one BA examination during the study timeframe. These were more common in facilities with 120 beds and above, facilities with fewer Medicare beds, for-profit facilities, and higher numbers of residents with SMI. A total of 126 facilities initiating a BA examination had below 95% occupancy rates, disqualifying them for reimbursement under the current Medicaid bed-hold policy. Almost all facilities that had at least one BA examination did not meet the Centers for Medicaid and Medicare Services (CMS) registered nurse (RN) staffing requirements.

Facility Characteristics and Behavioral Health Hospitalizations

Facility characteristics by behavioral health hospitalization are presented in Table 2b. Behavioral health hospitalizations were more frequent than BA examinations. There were 656 separate hospitalizations for 601 residents documented in the Medicaid claims files. Data indicate that the facility characteristics associated with BH hospitalizations have a similar pattern as the characteristics associated with BA examinations discussed above. The finding that hospitalizations occur more frequently in facilities not meeting RN staffing requirements is consistent with prior research showing that high RN staffing levels improve service delivery (Steffen, 1997; Polivka, Salmon, Hyer, Johnson, and Hedgecock, 2003)

Table 2a
Facility Characteristics by Baker Act Examinations

Facility Characteristic	Total (N=584)	Baker Act Examinations					
		Yes (N = 187)		No (N = 397)		# of Exams	
		N	%a	N	%a	X	SD
Ownership Type							
For-Profit	452	151	80.7	301	75.8	1.8	1.3
Not for profit	132	36	19.3	96	24.2	1.7	1.5
Multi Facility Ownership							
Member of a Chain	373	117	62.6	256	64.5	1.7	1.3
Not Member of a Chain	211	70	37.4	141	35.5	2.0	1.4
Size							
Below 120 Beds	180	41	21.9	139	35.0	1.8	1.4
120 Beds and Above	404	146	78.1	258	65.0	1.8	1.3
Medicaid Characteristics							
Average private pay, %	23	20	-	25	-	-	-
Medicaid Beds above median	294	125	66.8	169	42.6	1.9	1.4
Medicaid Beds below median	290	62	33.2	228	57.4	1.6	1.2
Medicare Beds above median	286	70	37.4	216	54.4	1.5	0.9
Medicare Beds below median	298	117	62.6	181	45.6	2.0	1.5
Quality Characteristics							
Total citations, above median	307	100	53.5	207	52.1	1.8	1.3
Total citations, below median	277	87	46.5	190	47.9	1.8	1.3
Had a QoI citation	317	108	57.8	209	52.6	1.8	1.4
Had a QoC citation	391	128	68.4	263	66.2	1.9	1.5
Had citation for abuse/neglect	101	33	17.6	68	17.1	1.8	1.2
Nursing Staff (RN) Ratio							
Meets CMS RN Staffing	19	3	1.6	16	4.0	1.0	0.0
Below CMS RN Staffing	565	184	98.4	381	96.0	1.8	1.3
Occupancy Characteristics							
Average yearly occupancy, %	87	87	-	87	-	-	-
Below 95%	410	126	67.4	284	71.5	1.9	1.5
95% and above	174	61	32.6	113	28.5	1.6	0.8
Ratio of persons with SMI over facility bed size							
Low (Below 33 %)	194	35	18.7	159	40.1	1.5	0.7
Medium (34% to 67%)	194	62	33.2	132	33.2	1.5	1.2
High (Above 67%)	196	90	48.1	106	26.7	2.1	1.5

Note. X = mean; SD = standard deviation; SMI = severe mental illness; CIS = Charlson Index score; HIV = human immunodeficiency virus.

Table 2b
Facility Characteristics by Behavioral Health Hospitalizations

Facility Characteristic	Total (N=584)	Baker Act Examinations					
		Yes (N = 257)		No (N = 288)		# of Exams	
		N	%a	N	%a	X	SD
Ownership Type							
For-Profit	452	221	74.7	231	80.2	2.3	2.2
Not for profit	132	75	25.3	57	19.8	2.1	1.7
Multi Facility Ownership							
Member of a Chain	373	176	59.5	197	68.4	2.3	2.0
Not Member of a Chain	211	120	40.5	91	31.6	2.2	2.1
Size							
Below 120 Beds	180	74	25.0	106	36.8	2.1	2.2
120 Beds and Above	404	222	75.0	182	63.2	2.2	2.0
Medicaid Characteristics							
Average private pay, %	23	21	-	26	-	-	-
Medicaid Beds above median	294	188	63.5	106	36.8	2.5	2.2
Medicaid Beds below median	290	108	36.5	182	63.2	1.8	1.7
Medicare Beds above median	286	110	37.2	176	61.1	1.6	1.0
Medicare Beds below median	298	186	62.8	112	38.9	2.6	2.4
Quality Characteristics							
Total citations, above median	307	167	56.4	140	48.6	2.3	2.2
Total citations, below median	277	129	43.6	148	51.4	2.1	1.9
Had a QoI citation	317	176	59.5	141	49.0	2.3	2.2
Had a QoC citation	391	206	69.6	185	64.2	2.3	2.2
Had citation for abuse/neglect	101	52	17.6	49	17.0	2.4	2.2
Nursing Staff (RN) Ratio							
Meets CMS RN Staffing	19	6	2.0	13	4.5	2.2	1.6
Below CMS RN Staffing	565	290	98.0	275	95.5	2.2	2.1
Occupancy Characteristics							
Average yearly occupancy, %	87	86	-	87	-	-	-
Below 95%	410	211	71.3	199	69.1	2.2	2.2
95% and above	174	85	28.7	89	30.9	2.2	1.7
Ratio of persons with SMI over facility bed size							
Low (Below 33 %)	194	67	22.6	127	44.1	1.6	1.0
Medium (34% to 67%)	194	94	31.8	100	34.7	1.6	1.2
High (Above 67%)	196	135	45.6	61	21.2	2.9	2.7

Note. X = mean; SD = standard deviation; SMI = severe mental illness; CIS = Charlson Index score; HIV = human immunodeficiency virus.

Question 2: What is the relationship between resident demographic and diagnostic characteristics and the prevalence of involuntary psychiatric examination and psychiatric hospitalization?

Resident Characteristics and BA Examinations

Tables 3a and 3b present the demographic and diagnostic characteristics of the resident sample. A majority of the residents were White females over the age of 65. The mean age was 80.2. Almost forty percent had an Alzheimer's or other dementia diagnosis and 19% had a diagnosis of SMI (defined here as having a diagnosis of schizophrenia, bipolar disorder or major affective disorder).

During the study timeframe 287 residents experienced a total of 339 BA examinations. Data in Table 3a show that, as a percentage of the total resident population, males, residents 22-64 years old, and residents with bipolar disorder were the most likely to receive a BA examination. While as a percentage of the total population elderly NH residents are at lower risk for a BA examination, more than half (61%) of the residents who experienced a BA examination were nonetheless aged 65 and older. Males made up about 28% of the study population and accounted for 56% of the residents experiencing a BA examination. Although minorities made up 28% of the study population they accounted for 36% of persons experiencing a BA examination. In this study 56.4% of the residents receiving a BA examination had a diagnosis of AD or other type of dementia and 70.7% had a diagnosis of SMI. Residents with the Charlson Index above the median were more likely to experience a BA examination, indicating that they were in poorer physical health. Similar findings emerged with respect to BH hospitalizations.

Resident Characteristics and Behavioral Health Hospitalizations.

Data in table 3b shows that a total of 601 residents were hospitalized between December 31, 2002 and July 1, 2005. More than half (66.2%) of those hospitalized were 65 years of age or older, 41.6% were male, 36.6% were minorities and 74.4% had a diagnosis for AD or other dementia. As might be expected, more than half (64.9%) of BH hospitalizations were for persons with SMI.

Table 3a
Demographic and Diagnostic Characteristics by Baker Act Examinations

Resident Characteristics	Total NH Pop		Baker Act Examinations; N = 339			
	N=32604		Yes; N = 287		No; N = 32317	
	N	%	N	%	N	%
Age						
21 years or younger	95	0.3	0	0.0	95	0.3
22-64 years	3817	11.7	112	39.0	3705	11.5
65 years and older	28692	88.0	175	61.0	28517	88.2
All, mean (SD)	80.2 (13.4)	-	68.7 (13.6)	-	80.3 (13.4)	-
Gender						
Male	9002	27.6	160	55.7	8842	27.4
Female	23602	72.4	127	44.3	23475	72.6
Race						
White	23415	71.8	185	64.5	23230	71.9
Black	5311	16.3	53	18.5	5258	16.3
Other	3878	11.9	49	17.1	3829	11.8
Dementia Diagnosis						
Alzheimer's Disease	4614	14.2	54	18.8	4560	14.1
Other Dementia	8137	25.0	108	37.6	8029	24.8
SMI Diagnosis						
Major Psychotic	3036	9.3	150	52.3	2886	8.9
Bipolar Disorder	300	0.9	14	4.9	286	0.9
Major Affective	2982	9.2	39	13.6	2943	9.1
Other MH Disorder						
SMI Population	6318	19.4	203	70.7	6115	18.9
Mental Retardation	311	1.0	11	3.8	300	0.9
Alcohol use disorder	429	1.3	20	7.0	409	1.3
Drug use disorder	162	0.5	12	4.2	150	0.5
Physical Health						
Charlson Index, mean (SD)	1.1 (1.3)	-	1.6 (1.6)	-	1.1 (1.3)	-
CIS Above the median	19347	59.3	212	73.9	19135	59.2
CIS Below the median	13257	40.7	75	26.1	13182	40.8
HIV/Aids	230	0.7	6	2.1	224	0.7

Note. X = mean; SD = standard deviation; SMI = severe mental illness; CIS = Charlson Index score; HIV = human immunodeficiency virus.

Table 3b
Demographic and Diagnostic Characteristics by Behavioral Health Hospitalizations

	Total NH Population		Behavioral health hospitalizations; N = 656			
	N = 32604		Yes; N = 601		No; N = 32,003	
Resident Characteristics	N	%	N	%	N	%
Age						
21 years or younger	95	0.3	1	0.2	94	0.3
22-64 years	3817	11.7	202	33.6	3615	11.3
65 years and older	28692	88.0	398	66.2	28294	88.4
All, mean (SD)	80.2 (13.4)	-	71.7 (15.5)	-	80.3 (13.3)	-
Gender						
Male	9002	27.6	250	41.6	8752	27.3
Female	23602	72.4	351	58.4	23251	72.7
Race						
White	23415	71.8	381	63.4	23034	72.0
Black	5311	16.3	133	22.1	5178	16.2
Other	3878	11.9	87	14.5	3791	11.9
Dementia Diagnosis						
Alzheimer's Disease	4614	14.2	189	31.5	4425	13.8
Other Dementia	8137	25.0	258	42.9	7879	24.6
SMI Disorder						
Major Psychotic	3036	9.3	295	49.1	2741	8.6
Bipolar Disorder	300	0.9	16	2.7	284	0.9
Major Affective	2982	9.2	79	13.1	2903	9.1
Other Disorder						
SMI Population	6318	19.4	390	64.9	5928	18.5
Mental Retardation	311	1.0	21	3.5	290	0.9
Alcohol use disorder	429	1.3	54	9.0	375	1.2
Drug use disorder	162	0.5	29	4.8	133	0.4
Physical Health						
Charlson Index, mean (SD)	1.1 (1.3)	-	1.7 (1.4)	-	1.1 (1.3)	-
CIS Above the median	19347	59.3	507	84.4	18840	58.9
CIS Below the median	13257	40.7	94	15.6	13163	41.1
HIV/AIDS	230	0.7	16	2.7	214	0.7

Note. X = mean; SD = standard deviation; SMI = severe mental illness; CIS = Charlson Index score; HIV = human immunodeficiency virus.

Question 3. What is the relationship between Medicaid reimbursement/bed hold policy, prevalence of BA examination, psychiatric hospitalization, and return to the sending NH upon discharge?

To investigate the impact of the Medicaid bed-hold policy enacted on July 1, 2004 we examined the frequency of BA examinations and BH hospitalizations and resident relocation status one-year before and one year after the change in reimbursement policy. Our findings show that the frequency of both BA examinations and BH hospitalizations declined following the change in the policy. Further, the percent of residents returning to their original nursing home after these events also declined. The exact cause of the decrease in these events is unknown. However, it is possible that the new policy decreased any potential financial incentive to initiate these events. Once a resident was out of a nursing home, lack of payment for their empty bed might have reduced the capacity of the nursing home to readmit the resident after their BA examination or BH hospitalization. Given these findings we recommend that the impact of the current bed-hold policy on relocation rates should be monitored to check for unintended consequences of the bed-hold policy.

Table 4a
Bed Hold Policy and Frequency of Events One Year Before and After July 1, 2004

Bed Hold Policy	Prevalence of events			
	Baker Act Exam		Hospitalization	
	N	%	N	%
Old Policy	101	65	233	63
New Policy	54	35	137	37

Table 4b
Bed Hold Policy and Relocation Return One Year Before and After July 1, 2004

Bed Hold Policy	Returned to the Same Facility			
	After Baker Act Exam		After Hospitalization	
	N	%	N	%
Old Policy	57	52	165	69
New Policy	26	46	87	61

Question 4: What was the treatment history, including pharmacotherapy, of NH residents that preceded and followed a BA examination or behavioral health hospitalization?

Tables 5a-5d present data on residents’ service use for the six-month time period before and after their first BA examination and their first BH hospitalization that occurred between January 1, 2003 and December 31, 2004. This part of the analysis was limited to events occurring during that time period to allow for six months before and after the event. Review of Tables 5a and 5b reveals that most of the residents who had a BA examination were provided psychotropic medication before and after their BA examination. In general there was a slight increase in the number of persons taking antipsychotic, antidepressant or other psychotropic medication after their BA examination. However, less than half (42%) of the residents who had a BA examination were receiving non-pharmacological BH services before or after their BA examination. These services included all outpatient services with a BH diagnosis on the claim and all services with a procedure code such as counseling services that were by definition considered a BH service.

**Table 5a
BA Examinations by Services Received**

	Provided Behavioral Health Services				Provided Psychotropic Medication			
	Yes		No		Yes		No	
	N	%	N	%	N	%	N	%
Baker Act	142	54	120	46	257	98	5	2
Before	109	42	153	58	246	94	16	6
After	105	40	157	60	251	96	11	4

**Table 5b
BA Examinations by Services Received**

	Provided Antipsychotic Medication				Provided Antidepressant Medication			
	Yes		No		Yes		No	
	N	%	N	%	N	%	N	%
Baker Act	230	88	32	12	197	75	65	25
Before	206	79	56	215	179	68	83	32
After	221	84	41	16	180	69	82	31

The pattern of BH service use before and after BH hospitalization shown in Tables 5c and 5d below are similar to those observed before and after a BA examination and reveal that while most residents were prescribed psychotropic medication less than half received non-pharmacological BH out-patient services.

Table 5c
BH Hospitalizations by Services Received

	Provided Behavioral Health Services				Provided Psychotropic Medication			
	Yes		No		Yes		No	
	N	%	N	%	N	%	N	%
Hospitalization	263	48	281	52	464	85	80	15
Before	197	36	347	64	445	82	99	18
After	213	39	331	61	446	82	98	18

Table 5d
BH Hospitalizations by Services Received

	Provided Antipsychotic Medication				Provided Antidepressant Medication			
	Yes		No		Yes		No	
	N	%	N	%	N	%	N	%
Hospitalization	377	69	167	31	338	62	206	38
Before	333	61	211	39	307	56	237	44
After	349	64	195	36	306	56	238	44

Question 5: What is the relative importance of identified risk factors for BA examination and psychiatric hospitalization?

We used multivariate logistic regression to estimate the odds of receiving at least one BA examination during the course of the study given a certain individual or facility-level independent variable (predictor). All predictors were mutually adjusted in the analyses. Data collected within each facility could be correlated, hence reducing the size of the standard error. Therefore, we used the Huber-White sandwich estimator where nursing home residents were considered both as unique individuals and as residents in one of the participating facilities. Because only 95 participants were in the youngest age group, this age group was combined with those between 22 and 64 years of age.

Results for the multivariate logistic regression model showing the odds of at least one BA examination in relation to individual and facility characteristics of the entire sample are presented in Table 6a. Since variables were entered into the same model, the results show odds of a BA examination adjusted for all individual and facility characteristics presented in this table. Among individual level characteristics, BA examination was significantly less common among the older residents, independent of all study variables. The odds of a BA examination were more than 50% lower in NH residents at least 65 years old compared to those under 65 years of age. BA examinations were also more than twice as likely to occur in men compared to women, with women having significantly lower odds of a BA examination. Race was not associated with the odds of a BA examination but having dementia increased the odds of a BA examination. Serious mental illnesses considered in this study increased the odds of a BA examination, with the major psychotic disorder and bipolar disorder showing the strongest effect of about 11-fold increase in the odds of a BA examination.

Co-morbidity, measured with the Charlson Index score, was not significantly associated with the odds of a BA examination. Among facility level characteristics, only profit status was associated with the odds of having at least one BA examination within the facility, such that a BA examination was more likely to occur in for-profit facilities compared to non-for-profit facilities.

Table 6a
Relation of Baker Act Exams to Individual and Facility Characteristics

	Estimate	SE	OR	p-value
Intercept	-5.10	0.40	-	< 0.001
Individual-level predictors				
Age, ref. = under 65 years	-0.89	0.15	0.41	< 0.001
sex, ref. = male	-0.94	0.13	0.39	< 0.001
White, ref. = non-White	0.10	0.14	1.10	0.465
Dementia, ref. = no	0.65	0.13	1.92	< 0.001
Major psychotic disorder, ref. = no	2.43	0.14	11.38	< 0.001
Bipolar disorder, ref. = no	2.36	0.31	10.53	< 0.001
Affective disorder, ref. = no	1.18	0.20	3.27	< 0.001
Alcohol use disorder, ref. = no	0.27	0.26	1.30	0.306
Drug use disorder, ref. = no	0.87	0.34	2.40	0.010
Charlson index score, ref. = 0	0.03	0.14	1.03	0.835
Facility-level predictors				
For-profit status, ref. = no	0.35	0.16	1.41	0.034
Member of a chain, ref. = no	-0.17	0.13	0.84	0.177
Size, ref. = above 120 beds	-0.11	0.15	0.90	0.464
Medicaid beds, ref. = above median	-0.12	0.14	0.89	0.415
Occupancy, ref. = above 95%	0.21	0.29	1.24	0.468
Quality of care citations, ref. = above median	0.06	0.13	1.06	0.653
RN staffing ratio, ref. = meets CMS standards	-0.86	0.62	0.43	0.165

Note. SE = standard error; ref. = reference group; RN = registered nurse; CMS = Center for Medicare and Medicaid Studies.

Results for the multivariate logistic regression model showing the adjusted odds of having at least one behavioral health (BH) hospitalization in relation to individual and facility characteristics of the sample are presented in Table 6b. Among individual level characteristics, the odds of a BH hospitalization were more than 60% lower in participants at least 65 years old compared to those under 65 years of age. BH hospitalizations were also more likely to occur in men compared to women, with women having 33% lower odds of at least one BH hospitalization. Race was not associated with the odds of a BH hospitalization. Similar to the results in analyses using BA examination as the outcome (Table 6a), having dementia was associated with increased odds of a BH hospitalization. Dementia more than quadrupled the odds of a BH hospitalization. The included serious mental illnesses were all associated with increased odds of a BH hospitalization, particularly major psychotic disorder which increased the odds just more than 8 times. Co-morbidity (the Charlson Index score) was associated

with increased odds of a BH hospitalization such that having a score of 1 or more increased the odds of a BH hospitalization by about 50% compared to having a score of 0. Among facility level characteristics, only the variables indicating whether or not a facility was a member of a chain yielded a result that at least approached statistical significance ($p = .047$). Specifically, BH hospitalizations were somewhat more common in facilities that were members of a chain compared to those that did not belong to a chain.

Table 6b
Relation of Hospitalizations to Individual and Facility Characteristics

	Estimate	SE	OR	p-value
Intercept	-4.40	0.25	-	< 0.001
Individual-level predictors				
Age, ref. = under 65 years	-1.04	0.10	0.35	< 0.001
sex, ref. = male	-0.33	0.09	0.72	< 0.001
White, ref. = non-White	0.04	0.10	1.04	0.701
Dementia, ref. = no	1.47	0.10	4.36	< 0.001
Major psychotic disorder, ref. = no	2.10	0.10	8.19	< 0.001
Bipolar disorder, ref. = no	1.51	0.29	4.51	< 0.001
Affective disorder, ref. = no	0.90	0.14	2.45	< 0.001
Alcohol use disorder, ref. = no	0.95	0.20	2.58	< 0.001
Drug use disorder, ref. = no	1.37	0.28	3.93	< 0.001
Charlson index score, ref. = 0	0.45	0.12	1.56	< 0.001
Facility-level predictors				
For-profit status, ref. = no	-0.07	0.11	0.93	0.487
Member of a chain, ref. = no	-0.18	0.09	0.83	0.047
Size, ref. = above 120 beds	0.10	0.11	1.12	0.312
Medicaid beds, ref. = above median	-0.15	0.10	0.86	0.135
Occupancy, ref. = above 95%	-0.21	0.18	0.81	0.241
Quality of care citations, ref. = above median	-0.16	0.09	0.85	0.067
RN staffing ratio, ref. = meets CMS standards	-0.15	0.31	0.86	0.619

Note. SE = standard error; ref. = reference group; RN = registered nurse; CMS = Center for Medicare and Medicaid Studies.

Discussion

Study findings indicate that facility characteristics, resident characteristics and Medicaid bed-hold policy all impact the rate of BA examinations and BH hospitalizations. A surprising finding is that almost all (98%) of facilities studied did not meet CMS RN staffing standards. This is particularly unfortunate because in facilities with inadequate staffing, exacerbations of psychiatric symptoms in residents with mental illness are more likely to occur, and less likely to be well managed. Improving RN staffing would likely decrease the frequency of these events.

Considering the demographic and diagnostic characteristics of residents that are actually experiencing the most BA examinations and BH hospitalizations we suggest that better understanding of the behavioral health needs of older adults with dementia would help reduce the frequency of preventable BA examinations and BH hospitalizations.

Given that the goal of a bed-hold policy is to provide a continuous place of residence for nursing home clients it would appear that the recent changes in the Florida bed-hold policy had a positive effect on the number of BA examinations and BH hospitalizations and a negative effect on the relocation rate of residents after a hospitalization or BA examination. The reduction in the frequency of BA examinations and BH hospitalizations following changes in Florida's bed-hold policy are consistent with prior research indicating that, when the marginal profit associated with the Medicaid bed-hold payment is greater than the marginal profit associated with nursing home Medicaid payment for continued care in the nursing home, then the bed-hold payment introduces a financial incentive to hospitalize nursing home residents (Freiman & Murtaugh, 1993; Intrator, Grabowski, Zinn, et al. 2006). Unfortunately this study did not examine the impact of the bed-hold policy on hospital length of stay. If the bed-hold policy change resulted in residents have longer hospital stays the policy change would potentially increase costs considerably.

Study Limitations

This study relied solely on administrative data from one state so results may not generalize to other locales. Administrative data limitations include imperfect record keeping, coding errors within the data, and incomplete data. However, the administrative data used here provided detailed information on Medicaid enrollees, NH facility characteristics, and BA examinations that would otherwise not be available. Using administrative data avoids attrition due to lost contact over time and the data were used at minimal cost because they were already in place.

Conclusions and Policy Implications

Study results warrant further longitudinal research to determine if the patterns of BH hospitalization and BA examination observed here remain constant over a longer timeframe and if some residents might refuse needed hospitalization to avoid loss of their bed when reserve payment is not available to their nursing home. Our findings highlight the impact of resident and facility characteristics on prevalence of BA examinations and BH hospitalizations. Findings reveal the importance the state's bed-hold policy and indicate a need to aligning state Medicaid and federal Medicare policies with regards to payment for acute, maintenance, and preventive behavioral health care in nursing home settings. Future studies should investigate factors associated with ambulatory sensitive (potentially avoidable) hospitalizations and also factors that potentially impact (lengthen) hospital stays for NH residents.

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Appendix A



JEB BUSH, GOVERNOR

ALAN LEVINE, SECRETARY

October 26, 2004

Dear Nursing Facility Administrator:

This policy is to clarify Medicaid reimbursement in emergency situations during 2004 declared hurricanes Ivan, Charley, Frances and Jeanne, where evacuations became necessary and the nursing facility did not meet the 95% occupancy rate for bed-hold.

In previous communications, the Agency for Health Care Administration has informed you of a change in bed-hold policy that took effect on July 1, 2004. The bed hold policy was changed to: "Medicaid will not pay for bed hold when a resident goes to the hospital or on therapeutic leave if 5 percent or more of certified Medicaid beds are available."

The reimbursement policy due to these hurricanes is as follows: when a Medicaid nursing facility is required to evacuate by mandatory or voluntary orders from the local and state emergency management officials and a resident wishes to be with his/her family, Medicaid will pay for a maximum of 16 days of therapeutic leave regardless of the occupancy rate. This leave is counted as part of the therapeutic leave taken within the same fiscal year. The therapeutic leave period is limited until power is restored or the facility is structurally safe to move back into, whichever date is less. The effective date of payment will be after a hurricane evacuation order is declared and the facility evacuates the residents.

Please note that any discharges resulting from an emergency situation or disaster must be consistent with federal guidelines expressed in 42 CFR 483.12, state law expressed in s. 400.0255, Florida Statutes, and Medicaid policy for admissions and discharges established in the Nursing Facility Services Coverage and Limitations Handbook.

Please contact Sam Chaaban of my staff at 850-487-3028 should you have any questions.

Sincerely,

Thomas W. Arnold
Deputy Secretary for Medicaid

cc: Medicaid Area Offices
Peggy Rigsby, Florida Health Care Association
Erwin Bodo, Florida Association of Homes for the Aging

TWA/sc



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