Managing Challenging Aggressive Behavior in Persons with Dementia: Cost Effectiveness of Prevention versus Treatment

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Abstract: In 2005, an estimated $315.4 billion was spent worldwide on dementia care (Wimo, Winblad & Jonsson, 2007). Individuals seeking dementia care cost 3.2 times more than other older adults and are hospitalized 3.4 times more often (Alzheimer's Association, 2007). Much of this cost stems from attempts to treat challenging aggressive behaviors with medication, psychiatric hospitalizations, and similar methods. In addition to financial costs, such treatments also accrue significant human costs. The current study compares the cost effectiveness of preventing challenging aggressive behaviors in persons with dementia with comparable regional costs of treating behavioral symptoms. Regional care costs, provided by Prime West Health Systems, are contrasted with care costs for a sample of past and current residents (n=122) of Lakeview Ranch, a care model that focuses on preventing (rather than treating) aggressive symptoms of dementia. Key components of the prevention approach include: a high staff to resident ratio (1:3), in-house full-time RN's, interdisciplinary teamwork, medication reviews, attention to residents' emotional needs, and specialized staff training. While the current findings do not show significant differences between care costs at Lakeview Ranch and the comparison data from Prime West, data comparing costs for Lakeview Ranch residents before and after admission to LVR show decreases in costly behavior-related hospitalizations and behavior-related medication use following admission to Lakeview Ranch. For example, the average cost to stay in a Hospital Geriatric Care Unit ranges from $2500-$5000 per day, while the average cost of a Nursing Home bed in MN is $191 per day. The average cost of care using the Lakeview Ranch Model is about $215 per day. Concurrent "humane" care costs (e.g., to care staff, families, and residents) are similarly reduced with this prevention approach.

Introduction:

Numerous social, emotional and financial costs are associated with providing care for persons with dementia (Karasik, 2003). These costs can be exacerbated by the presence of particularly challenging behavioral symptoms of dementia (e.g., wandering, agitation, aggression) (Palo-Bengtsson & Ekman, 2002). In fact, behavioral symptoms related to dementia are a major factor in the institutionalization of persons with dementia (Boustani et al., 2005), as well as in the increased reliance on behavior-related medication and behavior-related hospitalizations. To reduce the need for medication and repeated psychiatric hospitalizations, as well as to improve the overall quality of care, many care providers are turning to alternative approaches to manage behavioral symptoms, with varying levels of success (Boustani et al., 2005; Buettner & Fitzsimmons, 2006). Some of these approaches focus on the impact of physical activity (Palo-Bengtsson & Ekman, 2002; Eggermont & Scherder, 2006) and social programs (Basting, 2006; Gigliotti & Jarrott, 2005) on reducing challenging behaviors. Others employ models of behavioral programming (Lichtenberg, Kemp-Havican, MacNeill & Schafer Johnson, 2005), or seek to create therapeutic physical and social environments (Werezak & Morgan, 2003). Still others focus on the importance of staff training to reduce aggressive behaviors (Chrzescijanski, Moyle & Creedy, 2007; Egan et al., 2007, Perry & Bottorff, 2005). The current model of care incorporates many of the above strategies, along with additional elements to provide specialized care for persons with dementia-related behavioral issues, while significantly reducing the need for behavior-related medication and hospitalization.

The Lakeview Ranch Model of Care:

The Lakeview Ranch (LR) model focuses on the provision of specialized dementia care for persons with significant behavioral issues. The LR model stems from a grass-roots approach of adopting "the best of" various existing models of dementia care for persons with behavioral issues, while incorporating ideas from family and professional caregivers. The goal of the LR model is to address the specific individual needs of persons with dementia who exhibit behaviors that other care facilities are often unable to address or which are addressed via behavior-related medication use, psychiatric hospitalization, or discharge ("de-admittance") to another facility. Key elements of the LR care model are a high staff to resident ratio (1:3), extensive medication reviews, individualized registered nurse coverage, and a nature-based setting which includes animal therapy and a strong focus on residents' emotional and spiritual needs. Additional attention is placed on support and training of staff, with the goal of decreasing the financial and emotional costs of staff turnover. Changes in staff perception of how dementia affects the resident and a switch from task oriented behavior to person centered behavior are critical to this process.

The Current Study:
The current study sought to explore the effectiveness of the LR model in reducing the need (and hence the cost) of behavior-related medication and hospitalization by providing specialized care for persons with dementia who had previously demonstrated significant behavioral issues. One of the challenges for the current study was to identify suitable methods for making cost comparisons.

Procedure:
Two different approaches and data bases were used for the current study.

Data Set I: The first data set was obtained from Prime West Health Systems, (a Medicaid-managed health plan serving 13 rural counties in western Minnesota) who analyzed claims and enrollment data from three distinct groups served by Prime West Health as part of the Elderly Waiver program. The Elderly Waiver program is operated by the MN Department of Human Services program under a federal waiver to Minnesota's Medicaid State Plan and funds home and community-based services for people age 65 and older who are eligible for Medical Assistance (MA) and require the level of medical care provided in an nursing home, but choose to reside in the community.

The first comparison group was comprised of Lakeview Ranch residents on Elderly Waiver with a primary diagnosis of dementia. The second group was an Assisted Living Control group not residing at Lakeview Ranch who had a primary diagnosis of dementia and also qualified for Elderly Waiver status. The third comparison group was comprised of Elderly Waiver members with a primary diagnosis of dementia who were not living in an assisted living facility. Each group was compared with regard to inpatient admissions, per member per month costs based on duration on the Elderly Waiver program, and per member per month costs based on case mix.

The analyses for this first set of data were conducted by Prime West Health and only summaries of the findings were provided to the authors. Analyses were based on two primary data sources: (1) claims and enrollment data in the agency data warehouse; and (2) data from the Minnesota Senior Health Options (MSHO) files provided by Prime West.

Data Set II: The second data set used LR agency data for the past eight years. Data on behavior-related hospitalizations were gathered from a variety of agency records, including: family interviews; pre admission screenings/assessments (medical records from the resident's physician, resident's psychiatric history, resident's medication history); post admission screenings/assessments (RN's weekly assessments of resident's cognitive decline and behavior changes, physicians' monthly assessments of residents' development, physician's monthly medication review, quarterly public health assessments, annual mini -mental exams). Medication usage was gathered by using past and current medical records. A pre and post admission comparison was made of the overall individual use of behavior- related drugs (e.g., Seroquil, Haldol, Resperidol, and Depakote).

Sample:
Data Set I: Data represents Prime West information for 2006 and 2007. Data for the first group (Lakeview Ranch) reflects 19 member months in 2006 (because it did not appear in the Prime West data base until October of 2006 and 142 member months in 2007 (or an average census of 11.8 Prime West Members). For the Assisted Living Control Group, information was based 467 member months in 2006 and 572 member months in 2007. For the non assisted living control group, information was based on 802 member months in 2006 and 805 member months in 2007. For all three groups, the data included the period beginning when the member was enrolled in the EW program with a primary diagnosis of dementia, and ending when the member was no longer enrolled, or was reclassified from EW status to Community Well or Institutionalized status. Individual demographic data (age, ethnicity, etc.) were not available for this data set.

Data Set II: Data was analyzed for 122 Lakeview Ranch current (n=30, 24.5%) and past (n=92, 75.4%) residents diagnosed with a form of dementia. All of the residents (N=122) were Caucasian, and ranged in age from 56-101 years old, with a mean age of 82.4 years. Of the residents, 76 (62.3%) were female and 46 (37.7%) were male. Many of these residents had lived in one or more care facilities before Lakeview Ranch. Prior to moving to Lakeview Ranch, 68 residents (56%) were de-admitted and/or denied re-admission to the prior facilities for behavioral reasons. Only 23 (18%) of the LR residents came from home, and all but 5 of these were admitted through a hospital psych unit. Of the 30 current residents, 13 (43%) are private pay, while over half (n=17, 57%) receive Medical Assistance.

Findings:

Data Set I:(prepared by Cirdan Health Systems and Consulting)

*Ambulatory Care Sensitive Conditions (*medical conditions where it is expected that hospital admissions may be avoided or reduced by timely/effective ambulatory care)*:* Lakeview Ranch had only one inpatient hospital admission in 2007, which was not for an ACS condition. The Lakeview Ranch experience, however, included only 142 member months, or an average census of 11.8 Prime West members. For the Assisted Living Control Group, the rate of ambulatory care sensitive condition (ACSC) admissions was 21.0 per 1,000 members in 2006, based on 467 member months. Exactly the same rate of ACSC admissions was experienced in 2007, based on 572 member months. By contrast, for the Non-Assisted Living Control Group, the rate of ACSC admissions was a relatively low 14.9 per 1,000 members in 2006, based on 802 member months. This rate increased to 59.6 per 1,000 in 2007, based on 805 member months.

Durational PMPM: For members in the Assisted Living Control Group, the pattern of expenditure does not change dramatically over time. This may be a reflection of a consistent and ongoing level of home- and community-based services (HCBS) required for these members. The PMPM expenditures for Lakeview Ranch are significantly higher in the first six months of residence. This results in an overall higher PMPM for all durations when compared to both the Assisted Living and Non-Assisted Living Control Groups.

Case Mix PMPM: The total PMPM for Lakeview Ranch is more than $1,200 higher than that of the Assisted Living Control Group, and more than $2,300 higher than the Non-Assisted Living Control Group. This difference can be explained in part by differences in case mix. Lakeview Ranch, however, has a higher percentage of members with more complex behavior and high-cost case mix categories compared to the control groups

Data Set II:

Number of Behavior-Related Hospitalizations (Year Prior to Moving to LR/After moving to LR): Of the 122 current and former LR residents, 62 (50.8%) required no psychiatric hospitalizations in the year prior to or after arriving at LR. Sixty residents (49.2%) had at least one prior psychiatric hospitalization in the year before coming to LR. Of those 60, 56 (93.3%) had no additional psychiatric hospitalizations after arriving at LR. Those 60 residents showed a mean of 2.13 psychiatric hospitalizations in the year prior to arriving at LR but only 0.07 hospitalizations after arriving at LR. This decrease in psychiatric hospitalizations was significant ($t=15.91$, $df=59$, $p=.00$). None of the residents had more than one psychiatric hospitalization after arriving at LR, although prior year psychiatric hospitalizations ranged from one to five.

Behavior-Related Medication Reductions: Of the 122 current and former LR residents, 44 (36.1%) experienced a decrease in the use of behavior-related medications after moving to LR

Discussion:

Two unique approaches were taken to compare costs relative costs for persons with challenging behaviors residing under the Lakeview Ranch model. The data and analyses provided by Prime West did not show significant cost savings from the LR residents compared to persons with dementia at home. According to the Prime West findings, however, the PMPM did show that the Lakeview Ranch care model produces comparable costs to other assisted living facilities for members with dementia. Total costs were found to be less for Elderly Waiver members with dementia who are not in assisted living facilities, including but not limited to Lakeview Ranch. Per month per member costs, however, were found to be higher for Lakeview Ranch residents than for the assisted living and at home members. These PMPM differences may be explained in part by differences in case mix, as well as the fact that current case mix screening tools do not take into consideration significant aggressive behavior. Additionally, the PMPM differences may not take into account the fact all LR residents age in place and do not move on to a skilled facility as end of life nears or skilled care is necessary, as in most comparable residential assisted livings. Overall, the findings from the Prime West analyses are mixed at best – although they do show that while Lakeview Ranch cares for persons with more complex behavior, higher-cost case mix, and care through end of life, they have few hospitalizations (which can be costly). Additional analyses which can access information on level of aggressive behavior are needed to better place these comparisons into context.

Findings from the second data set comparing pre and post costs for Lakeview Ranch residents were more positive in demonstrating a costs savings in that behavior related hospitalizations and medications were reduced significantly after admission to Lakeview Ranch. The Prime West data does not preclude these reductions in their findings – rather it suggests that non-residents of Lakeview Ranch may be less costly because they may not have as many behavior challenges to begin with. The findings regarding case mix seem to support this suggestion. More research, however, is needed in how best to get at demonstrating actual cost comparisons, particularly with regard to the specialized population Lakeview Ranch serves.

Conclusion:

The Lakeview Ranch model is an innovative combination of many of the best practices in the current literature, including person-centered care focusing on meeting the emotional needs of residents, validating feelings, animal therapy, a high staff ratio, and a focus on flexibility with both staff and residents – an essential component of person-centered care (Cohen-Mansfield & Bester, 2006). The Lakeview Ranch model also highlights the differences between a biomedical and a communications approach to care. The biomedical approach, a disease-based model, focuses on treating abnormal behaviors as artifacts of a diseased brain. In contrast, a communications approach, which adheres to the idea that all behaviors are a form of communication, directs attention to the meaning behind the behavior. The goal of a communications-based model of care, such as the one used at Lakeview Ranch, is to properly interpret and meet the underlying need(s) expressed by the residents through their behaviors (McLean, 2007), thus preventing or reducing the occurrence of challenging behaviors that other care models find costly or impossible to treat (and often lead to an increased use of behavior-related medications, hospitalizations, and/or de-admission from the facility.) As the current pre/post admissions findings indicate, the outcome of the Lakeview Ranch model is a clear reduction in the use of behavior-related medications and costly behavior-related hospitalizations due to an overall reduction in challenging behaviors. Demonstrating overall cost savings for the LR model proved more difficult, however, when costs of LR care were contrasted with the costs of care at home or at a local assisted living facility. In this comparison, the cost of overall care was found to be slightly higher under the Lakeview Ranch approach. This comparison, however, does not take into account the potential savings of not having to treat behaviors that might be incurred if not prevented by the LR model. It is also possible that the current comparison is not able to adequately account for the more costly type of resident Lakeview Ranch attracts because they specifically cater to persons who have previously demonstrated significant aggression and other costly behaviors. Additional research is needed to explore comparable cost concerns for persons with significant behavioral challenges.

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