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Behavior Management

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DIVERSIFYING TREATMENT OPTIONS FOR ELDERLY PATIENTS WITH PSYCHOSES IN THE LONG-TERM CARE SETTING

CALCULATING THE COSTS OF BEHAVIORAL PROBLEMS IN LONG-TERM CARE SETTINGS

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Objective: To calculate the costs of behavioral problems in elderly residents of long-term care facilities.

Data Sources: Time-and-motion studies were conducted to measure the involvement of all long-term care facility staff in a particular process, with each person's contribution assigned a cost based on 1991 average pay for each staff position.

Data Synthesis: Behavioral problems among patients in long-term care facilities considerably increase the total costs of care. Patients who fight, continuously yell or scream, resist care, wander, or are verbally aggressive require more intense monitoring by nursing staff. In some cases, several staff members may be needed to manage a behaviorally disturbed patient. Time-and-motion studies show the precise costs of managing specific behavioral problems, allowing determination of the cost savings realized from reducing or eliminating problem behaviors. In many cases, polypharmacy is a contributing factor to high costs and counterproductive behavior, making the input of the consultant pharmacist a necessity in managing behavioral problems and decreasing the overall costs of care.

Conclusion: A multidisciplinary team approach is essential for controlling costs, improving patients' quality of life, and achieving desired therapeutic outcomes.

Key Words: Behavioral problems, Elderly, Long-term care, Treatment costs.
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Nearly 70% of residents newly admitted to a long-term care facility have dementia,[1] a disease that causes changes in personality and motor function and impairs memory, judgment, decision-making, problem-solving, and communication skills. As dementia progresses, these changes lead to behavioral disturbances, the most common of which are yelling and screaming, fighting, wandering, resisting care, sleep problems, verbal aggression, unsafe movement, unjustified complaining, and constant requests for attention. These behavioral problems may be temporary in episodes of delirium or permanent in patients with dementia. In either case, behavioral disturbances make caring for elderly nursing facility residents challenging.

Patients' behavior can be affected by their level of stress and changes in the nursing home environment. Because of impaired cognition, patients with dementia are unable to understand and accurately process information from the environment. Changes in routine or the environment can precipitate behavioral problems, as can the demands placed on patients during activities of daily living.

Depression and anxiety, resulting from deep personal loss, are other causes of behavioral problems. The loss of a loved one, home, personal belongings, or ability to care for oneself can cause major depression and frightful distress, for which patients try to compensate through behavioral outbursts. Lack of input into everyday decisions also contributes to depressive episodes among nursing home residents.

To control the costs associated with managing behavioral problems in long-term care residents, constant assessment and evaluation are necessary. Inappropriate use of nonpharmacologic and pharmacologic therapies will add to the cost of care. Side effects from antipsychotic drugs can increase costs while providing no improvement in the patient's quality of life. Use of multiple drugs to treat both behavioral problems and other chronic health conditions can considerably increase costs. Thus disease state and drug therapy management are essential for decreasing both direct and indirect costs.

DETERMINING THE DIRECT AND INDIRECT COSTS OF BEHAVIORAL PROBLEMS

To develop cost-effective interventions and improve a patient's quality of life, both the direct

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and indirect costs associated with individual problem behaviors must be identified.* Direct costs are those for services outside the nursing home cost. They include pharmacy, physical therapy, occupational therapy, psychologic evaluations, supplemental feeding, additional supplies, and hospital admissions. Indirect costs are those incurred by the nursing home for additional staff participation, overtime, work duties, and other costs above those associated with general care of patients. Although indirect costs are realized throughout different health care departments, they are all costs to the system.

Developing cost-effective means of providing care for nursing home residents requires a multidisciplinary approach. Striving for savings by reducing drug costs alone may increase the potential for additional hospital admissions or cause adverse events that increase the total cost to the system. The concept of overall savings, not just departmental savings, must always be considered.

YELLING AND SCREAMING

Yelling and screaming are difficult problems that disturb other patients, staff members, and visitors. Many different staff members are required to control yelling and screaming episodes, thereby increasing indirect costs. Actions necessary to resolve this problem include:

- Giving patients something to eat or suck on, such as candy
- Distracting patients by talking about favorite subjects or involving them in a favorite activity
- Providing comfort by touching or holding hands, listening to music, using a soothing tone of voice, or providing comfort objects, such as dolls or stuffed animals
- Avoiding over- or understimulation

These tasks involve nurses, certified nursing assistants, activities directors, social directors, and dietary managers. The total cost per day of yelling and screaming is $18.75 (1991 dollars).

FIGHTING

Fighting not only increases indirect costs but is also a danger to the patient, other patients, staff members, and visitors. Controlling this behavior involves multiple caregivers, including nurses, certified nursing assistants, rehabilitation aides, social services workers, and nursing supervisors. Measures necessary to prevent or control fighting include:

- Separating patients
- Keeping patients at safe physical distances
- Giving patients time to calm down
- Setting definite limits
- Providing privacy and sense of personal space
- Possibly assigning a new roommate
- Avoiding situations that trigger fighting
- Encouraging physical exercise and other ways of working off excess energy

The total cost per day of fighting is $38. Use of restraints adds an additional $24.75 per day.

WANDERING

Wandering, a problem difficult to control in the nursing home, can place patients in danger if they wander off unsupervised. It also disturbs other residents if wanderers enter another patient's room. Managing this behavior involves nurses, certified nursing assistants, rehabilitation aides, occupational therapists, and nursing supervisors. Methods of preventing wandering and ensuring patient safety include:

- Approaching patients from the side or front
- Redirecting patients to a supervised area

*Cost figures for individual behavioral problems discussed in this article were calculated from time-and-motion studies conducted by Institutional Pharmacy Consultants, Griffin, Georgia, in 1991. Time-and-motion studies measure the involvement of all persons in a particular process and assign a cost to each staff member's contribution. For example, the daily cost for use of restraints is calculated by multiplying the average pay for a nurse by the time spent by the nurse each day checking and releasing the restraints and documenting their use. For patient care planning, which involves the care team, costs for and time spent by each team member in this process are calculated.

■ Distracting patients

■ Searching for patients' personal agenda

■ Staying with patients until redirection is successful

■ Limiting patient contact with persons exiting the building

■ Disguising exits

■ Alarming outside exits

■ Checking patients every 15 minutes

The total cost per day of wandering is $18.75. Use of restraints adds an additional $24.75 per day.

RESISTING CARE

Resisting care is one of the most labor-intensive behaviors to manage. Most nursing home patients need help with activities of daily living, medical treatments, and medication administration. When patients resist care, two to four staff members may be needed to resolve a single problem. Overcoming resistance to care requires nurses, certified nursing assistants, nursing supervisors, and various support caregivers. Measures taken to manage patients who resist care include:

■ Locating the staff member who has the best relationship with the patient

■ Avoiding situations that trigger behavioral problems

■ Having another staff member keep the patient focused on something else

■ Allowing patients as much control as possible

■ Having the caregiver explain what is going to be done. If resistance occurs, explaining again what is happening. If resistance continues, stopping and returning later

■ Staying out of range if patients bite or hit and using padding under clothes if needed for protection

■ Putting something in patients' hands to distract them if they grab or use hands to resist

The following measures can be used to decrease resistance to bathing:

■ Bathing patient less frequently to decrease stress associated with bathing

■ Adjusting bath schedule to patient's former habits

■ Creating a feeling of privacy

■ Using bathing method least stressful for patient

■ Keeping water temperature at body temperature

■ Using sponge bath at bedside if necessary

■ Being firm but understanding

■ Progressing slowly as tolerated

To overcome resistance to dressing, the following measures can be used:

■ Limiting clothing choices

■ Laying out clothes in the order they will be put on

■ Simplifying clothing and closures

For resistance to medication administration, measures include:

■ Changing the way in which patients are approached

■ Using liquid formulations if possible

■ Crushing medication and putting it in applesauce or pudding

■ Giving medication the way patients prefer if possible

■ Using positive persuasion to encourage cooperation.

Patients who resist eating can be managed by:

■ Offering differently textured food

■ Providing familiar foods

■ Gently reminding patients to eat and assisting with feeding

■ Providing finger foods

- Decreasing noise and distracting activities
- Allowing patients to eat in small groups
- Limiting the number of foods and utensils placed in front of patients

The total cost per day of resisting care is $33.75. Use of restraints adds an additional $24.75 per day.

Sleep Problems

Difficulty falling asleep and awakening during the night is disturbing to others and possibly hazardous to patients themselves, if they wander from bed and fall. To prevent injuries, close monitoring is necessary, something that may be difficult to accomplish with limited nursing staff during the night shift. Methods of helping patients with sleep problems include:

- Reorienting patients to person, time, and place
- Providing comfort and reassurance if patients are frightened when awakened
- Allowing patients out of bed if they insist
- Bringing patients close to the nursing station and keeping them occupied
- Providing daily exercise periods to decrease napping
- Implementing a bathroom routine
- Offering a bedtime snack
- Setting a bedtime that is not too early

Sleep problems can progress to serious behavioral problems that place the patient and other residents in jeopardy. In such cases, use of restraints when in bed may be necessary.

The total cost per day of sleep problems is $19.25. Use of restraints adds an additional $24.75 per day.

Verbal Aggression

As cognitive impairment increases, patients with dementia lose impulse control, becoming increasingly hostile and verbally aggressive. This behavior disturbs other patients and frustrates caregivers. Verbal aggression can be a precursor to or be exacerbated by a catastrophic reaction or fighting. It can also occur as part of resisting care or occur unprovoked and consistently. Changes in environment, roommates, or routine can increase verbal aggression. Several caregivers may be required to manage each verbally aggressive episode. The possibility of an unexpected physical attack means that excessive monitoring and increased staffing are needed to avoid harm.

The following measures are used to manage verbally aggressive patients:

- Distracting, calming, and removing patients from others
- Not trying to reason with or settle arguments with patients
- Not threatening patients verbally or through body language
- Allowing patients space by leaving and returning later
- Changing roommates, routines, or caregivers as necessary
- Identifying triggers for verbally aggressive episodes
- Providing activities to work off excess energy
- Telling family members not to discuss unpleasant situations

Controlling verbally aggressive behavior is a demanding task and may require evaluations from psychiatric health professionals.

The total cost per day of verbal aggression is $22.63. Use of restraints adds an additional $24.75 per day.

Unsafe Movement

Injuries from unsafe movement are most common among cognitively impaired patients, the very old (> age 80), those with chronic diseases, and those receiving certain types of drug therapy. Poor eyesight and impaired depth perception and judgment contribute to unsafe movement. Patients who forget they cannot walk or stand, forget the wheelchair will move when trying to stand or transfer to bed, or get up during the night unassisted to use the bathroom are a signifi-

cant concern in nursing facilities. Unsafe movement often leads to use of restraints to protect the patient from injury. However, restraints can cause medical problems, including skin breakdown, kidney or bladder infection, and muscle atrophy, and may exacerbate other problem behaviors.

Methods used to prevent injuries from unsafe movement include:

- Approaching patients calmly when they are at risk for injury
- Helping patients when necessary and attempting to make the situation safer
- Maintaining a slow, even pace when providing care, exercise, physical activities, and other movement activities
- Ensuring patients wear shoes and other safe clothing
- Removing all sharp objects from patient areas if possible
- Keeping equipment in good condition
- Cleaning up spills immediately
- Monitoring patients and documenting times and situations when patients are at risk
- Using night lights in patient rooms
- Using low-level beds
- Ensuring that patients know how to call for help and responding quickly to call lights
- Implementing toileting programs with structured routines
- Putting patients in chairs or recliners that make it difficult for them to get up
- Avoiding furniture rearrangement in patient rooms

Unsafe movement is a behavioral problem which is labor-intensive and frustrating for staff members. Close monitoring of patients is necessary and may require additional staff.

The total cost per day for unsafe movement is $31.55. Use of restraints adds an additional $24.75 per day.

UNJUSTIFIED COMPLAINING

Although not dangerous to the patient, unjustified complaining frustrates nursing staff and causes unnecessary work. As a result, staff members may develop negative feelings toward the patient, and family members may complain that their relative is receiving inadequate care. Unjustified complaining often takes the form of constant concern for health, possibly as a result of anxiety or depression. In some cases, complaining may be in the patient's nature. Family members can help in determining whether unjustified complaining is a new phenomenon or a life-long behavior.

Unjustified complaining can be managed by:

- Listening and making sure patients know they are being heard
- Ensuring that patients have been evaluated by a physician to rule out medical problems
- Setting limits on the number of times staff members listen to patients
- Not asking how patients feel
- Providing lots of love and reassurance
- Having all staff members discuss pleasant subjects with patients
- Asking family members about things the patient likes to talk about
- Adding stimulating activities to patients' daily routine

The total cost per day of unjustified complaining is $62.50. The cost for responding to each call light is $15.50.

IMPACT OF DRUG THERAPY ON OVERALL COSTS OF CARE

Drug therapy management is defined as use of the minimum amount of drugs that will produce the optimal positive therapeutic outcome. This may include use of more costly drugs that provide improved outcomes, ultimately decreasing the overall cost to the system. Drug therapy amounts to only about 1.5% of the total cost of caring for severely mentally ill persons.[2] Indeed, attempting to control costs by limiting access to drugs may drive up the overall costs of caring for patients

with mental illnesses, as demonstrated in a study by Soumerai et al.[3]

Pharmacy costs for a patient in a long-term care setting average between $125 and $150 per month. With drug therapy management, these costs can be decreased to an average of $95 per month, thereby reducing overall direct costs. By decreasing polypharmacy, the potential for adverse events also can be reduced. For example, substituting one effective antihypertensive drug for concomitant use of three antihypertensive agents can decrease potential for side effects, reduce cost of therapy, and improve therapeutic outcome. Use of an inappropriate antipsychotic drug can exacerbate behavioral problems, necessitate use of additional drugs to treat side effects, and result in excessive use of sedatives, anxiolytics, and antidepressants.

Therapeutic misadventures add an additional burden to the health care system. The wrong drug, wrong dose, wrong regimen, or wrong dosage form can lead to hospitalization, additional health care services, additional drugs, and decreased quality of life or even death. To avoid such problems, consultant pharmacists need to comprehensively evaluate patients' drug therapy. For example, an 86-year-old hypertensive woman receiving beta-blocker therapy who hallucinates at night and cries all day may be prescribed antipsychotic and antidepressant drugs. However, a clear understanding of how beta-blockers affect elderly patients would have prevented the use of this class of drugs, which can cause hallucinations and depressive episodes. Use of antipsychotics and antidepressants in this case would not have achieved the desired therapeutic outcome and would have resulted in considerable indirect and direct costs. Use of an angiotensin converting enzyme inhibitor or calcium channel blocker would have achieved the desired outcome and avoided the side effects associated with beta-blockers in the elderly. Based on the findings in this study, the average cost of a therapeutic misadventure in the long-term care setting is $1,690.

Adverse events can result from therapeutic misadventures or drug interactions. Side effects are most likely to occur when drugs are selected without appropriate attention to a patient's specific situation. The impact of each new drug on other drugs a patient is taking must be evaluated, as must the drug's effects on a patient's medical

TABLE 1. APPROXIMATE COSTS FOR TREATING AN 84-YEAR-OLD WOMAN WITH MULTIPLE MEDICAL PROBLEMS BEFORE AND AFTER IMPLEMENTATION OF CONSULTANT PHARMACIST'S RECOMMENDATIONS

Item	Cost
On admittance to long-term care facility	
Admitting drug therapy per month	$ 225
Psychiatric consultation and hospitalization	8,000
Rehabilitation therapy	3,000
Indirect costs	
Restraints ($24.75 x 30 days = $742.50)	
Assistance with feeding ($6 x 30 days= $180)	
Resisting care ($33.75 x 30 days = $1012.50)	
Continuous yelling ($18.75 x 30 days = $562.50)	
Wandering ($18.75 x 30 days = $562.50)	
Verbal aggression ($22.63 x 30 days = $678.90)	
Total first month's costs	**$14,963.90**
Readmission after first admission to psychiatric hospital	
Readmitting drug therapy per month	$ 209
Psychiatric consultation and hospitalization	8,000
Rehabilitation therapy	3,000
Indirect costs	
Restraints ($24.75 x 30 days = $742.50)	
Assistance with feeding ($6 x 30 days= $180)	
Resisting care ($33.75 x 30 days = $1012.50)	
Continuous yelling ($18.75 x 30 days = $562.50)	
Wandering ($18.75 x 30 days = $562.50)	
Verbal aggression ($22.63 x 30 days = $678.90)	
Total second month's costs	**$14,947.90**
Readmission after second admission to psychiatric hospital	
Readmitting drug therapy per month	$ 206
Rehabilitation therapy	3,000
Indirect costs	
Restraints ($24.75 x 30 days = $742.50)	
Assistance with feeding ($6 x 30 days= $180)	
Resisting care ($33.75 x 30 days = $1012.50)	
Continuous yelling ($18.75 x 30 days = $562.50)	
Wandering ($18.75 x 30 days = $562.50)	
Verbal aggression ($22.63 x 30 days = $678.90)	
Total third month's costs	**$6,944.90**
After implementation of consultant pharmacist's recommendations	
New drug therapy per month	$ 191
Rehabilitation therapy	3,000
Total fourth month's costs	**$3,191.00**
Continuing therapy costs	
New drug therapy per month	$ 191
Total continuing month's costs	**$ 191**

problems. Thorough drug evaluation may not only prevent serious side effects, but can also provide considerable savings by avoiding these events. The following case illustrates the importance of drug therapy management.

CASE STUDY

An 84-year-old woman is admitted to a long-term care facility with diagnoses of hypothyroidism, dementia, congestive heart failure, hypertension, psychotic behavior, Parkinson's disease, and malnutrition. On admission, she is taking haloperidol 2 mg TID, sustained-released diltiazem 180 mg daily, benztropine 1 mg TID, lorazepam 1 mg TID, amantadine 100 mg TID, levodopa-carbidopa 10/100 mg TID, levothyroxine 0.125 mg daily, and intramuscular haloperidol 5 mg as needed for extreme agitation. She has severe tremors and requires complete assistance with feeding and other activities of daily living. She also has several behavioral problems, including continuous yelling, resisting care, incontinence, and attempts to leave the facility at night, necessitating use of restraints. The consultant pharmacist's suggested changes in drug therapy are rejected. A psychiatric consultation is ordered and the patient is admitted to a psychiatric hospital for evaluation.

On returning to the long-term care facility, the patient is readmitted with drug orders for thioridazine 25 mg TID, sustained-release diltiazem 180 mg daily, benztropine 1 mg TID, lorazepam 1 mg TID, amantadine 100 mg TID, levodopa-carbidopa 10/100 mg TID, levothyroxine 0.125 mg daily, and intramuscular diazepam 10 mg at 4 p.m. for extreme agitation. The patient's condition does not improve, and she continues to need extensive nursing care. A few days later, her gait deteriorates, and she is lethargic and unaware of self or surroundings. All the consultant pharmacist's recommendations are again rejected, except for one: the dose of amantadine is decreased to 100 mg three times a week, given the patient's calculated creatinine clearance of 22 mL/min.

The patient continues to deteriorate. After another psychiatric consultation, she is readmitted to a psychiatric hospital for evaluation. When she returns to the long-term care facility, her drug therapy is changed to valproic acid 250 mg TID, sustained-release diltiazem 180 mg daily, benztropine 1 mg TID, lorazepam 1 mg TID, amantadine 100 mg TID, levodopa-carbidopa 10/100 mg TID, levothyroxine 0.125 mg daily, and intramuscular diazepam 10 mg at 4 p.m. for extreme agitation. Her condition does not improve. At this point, all the consultant pharmacist's recommendations for drug therapy are implemented. All medications are discontinued, which includes tapering some of the medications.

New drug therapy suggested by the consultant pharmacist consists of sustained-release diltiazem 180 mg daily; levothyroxine 0.125 mg daily; risperidone 0.5 mg HS for 12 days, then 0.5 mg BID; nefazodone 50 mg HS for 12 days, then 50 mg BID for 12 days, then 100 mg BID; and buspirone 10 mg TID. Antiparkinson agents are removed from the drug regimen because the pharmacist concluded the tremors were drug induced. Thirty days later, the patient experiences considerable cognitive improvement, is aware of self and surroundings, is not incontinent, is able to feed herself, does not try to leave the facility, participates in activities programs, and can converse with staff members and other patients. Her quality of life has improved significantly, and costs to the system are substantially decreased or eliminated. The approximate costs are shown in Table 1.

CONCLUSION

In today's health care environment, a multidisciplinary team approach is essential for controlling costs, improving patients' quality of life, and achieving desired therapeutic outcomes. The consultant pharmacist's valuable input, not only relating to drug therapy but also to the overall aspects of patient care, can considerably improve patient well-being and decrease the total costs of care.

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