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GERIATRIC NURSING

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Losing and Retrieving



Priscilla Ebersole, PhD, RN, FAAN

When I was young I didn't dream there would be a day when the tip of one finger could control a vast amount of information. Yesterday I deleted 72 e-mail messages by selecting all messages rather than just junk. Later in the day, I retrieved a history of dementia with a few finger taps on google.com (search: History of Dementia, www.sciencedirect.com/science). But how did I recover from that earlier blunder? I have a backup system—our wonderful managing editor, Leslie Flatt, who receives almost everything that is of importance to GN. What possible relevance does this have to dementia? A great deal.

First, and most important in my mind, is forgetfulness panic. "Oh, dear! What have I lost?" Age-associated memory impairment (AAMI) exists and is normal for most people after age 80, although some 40-year-old gerontologists may quibble about this. The average (as if there is such a person) older person will forget details that are unimportant—and maybe a few important ones—and often will not register automatic actions or insignificant events that occur each day, such as, "Did I take my eyedrops this morning?" or "Where did I put my glasses?" Adaptive mechanisms have also developed automatically for most of these people, however. Ordinarily, elders develop backup systems that work beautifully for them. The vial of eyedrops is placed differently in the medicine cabinet after the morning dose than before. Several pairs of glasses are placed at strategic points. Everything that is important is written down. Grandchildren can be tapped for their more exacting, although often misinterpreted, memory of whatever happened last week. When one walks downstairs and forgets why, one simply turns around and goes back up; exercise is a wonderful mental and physical restorative.

The fear of dementia is overactive, and many elders live in dread of developing Alzheimer's disease or a related disorder.

Each little lapse of memory triggers an anxiety reaction that blocks clear thought. The fear of an irreversible dementia is serious because if we lose our memory, we lose our personhood. We "lose it." We lose "I."

My 4-year-old granddaughter often wants to talk about when she was a baby. Initially, I thought her focus on that was a trifle unusual, but now I see it as filling in the amnesia of babyhood. She wants to know who she was and what she did, and especially how "adorable" she was. So yesterday we retrieved a dozen or so photos of her babyhood and talked about each one of them—why, when, and where they were taken, and so forth.

These ideas can just as easily be transferred to working with an elder who has mild to moderate dementia; maybe even beyond that. Whatever threads of memory may be awakened will make life a little bit more worth living, and even if none are stirred, the special attention will feel good. So who has time to do that?

Visual images, foods, objects, fragrances, memorable music—all can be tools of stimulation, used carefully to avoid overload and to enrich daily existence. How about assigning group leadership to select aides?

When dealing with individuals in the home, nurses are detectives, seeking small clues in the environment that may activate thought-provoking comments to an elder or a family member. Irreversible dementias, particularly Alzheimer's disease, have been the subject of a great deal of geriatric research. Nurses and family members are the people who must deal with the manifestations on a daily basis. We are pivotal in identifying the reality of loss, preventing unnecessary loss, and activating methods of personhood retrieval. We are the "backup system."

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Report on Pharmacological Treatment of Dementia

The Agency for Healthcare Research and Quality (AHRQ) recently released the summary of a new report, *Pharmacological Treatment of Dementia*. The report presents evidence that drug therapy for dementia can improve symptoms and outcomes, including global assessment, cognition, behavior, mood, and quality of life. Some deficiencies in the research were noted such as insufficient evidence of the effects of drug treatment on delaying the onset or progression of dementia and the lack of drug-to-drug comparison studies. A print copy of the summary and report are available by sending an e-mail to ahrqpubs@ahrq.gov.

Diabetes and Dementia

Diabetes can accelerate dementia, which in itself hinders the ability to manage one's blood sugar. Early detection and treatment of diabetes could help stall the effects of cognitive decline, including Alzheimer's disease, according to a recent article posted at the SAGE Crossroads Web site. The full article is available at www.sagecrossroads.net/public/news/show_article.cfm?articleID=93

Link Between Inappropriate Medications and Elevated Death Rates in Nursing Home Patients

According to a study recently reported in the January 10, 2005, issue of the *Archives of Internal Medicine*, elderly nursing home residents given potentially inappropriate drugs intermittently over a 3-month period had an almost 90% greater likelihood of dying during the last month of that period than similar residents not administered possibly inappropriate medications. The study, conducted by researchers at the federal government's Agency for Healthcare Research and Quality (AHRQ), is the first known analysis in the United States of the effects of potentially inappropriate medication prescribing in nursing homes based on nationally representative survey data. The most common drugs involved were propoxyphene

(narcotic painkiller), amitriptyline (antidepressant), diphenhydramine and cyproheptadine (antihistamines with strong anticholinergic effects); hydroxyzine (antianxiety drug), oxybutynin (bladder muscle relaxant), ranitidine (antacid), and iron supplements. For a pdf file of the article or for questions, contact Bob Isquith at bisquith@ahrq.gov or call (301) 427-1539.

Forum Develops Initiatives to Further Patient Safety

The nation's first Chief Nursing Officer (CNO) Patient Safety Leadership Forum was recently held in San Diego, California. Nationally recognized experts gathered in Indianapolis to emphasize the leadership role nurses must play in making patient safety a priority within the health care system. The forum highlighted a series of Institute of Medicine reports on patient safety and best practices for how nurses can improve safety within their individual hospitals and through implementation of practices developed by organizations such as the Joint Commission on American Healthcare Organizations and the Food and Drug Administration. An executive summary of the CNO Patient Safety Leadership Forum is posted at www.alarismed.com or www.clarian.org.

Quality-of-Life Measures in Clinical Research and Medical Care

The National Institutes of Health (NIH) Roadmap Initiative recently awarded a 5-year grant to David Cella, PhD, director of the Evanston Northwestern Healthcare Center on Outcomes Research and Education (CORE). The project for which the grant was received—"Patient-Reported Outcome Measurement Information System (PROMIS)"—has the potential to improve patient care because it will develop standardized outcome measures across a wide range of chronic diseases for use in clinical research as well as in medical practice. The NIH Roadmap for Medical Research is a series of far-reaching initiatives designed to transform the nation's medical research capa-

bilities and speed the movement of scientific discoveries from the bench to the bedside. Additional information about the program can be found at <http://nihroadmap.nih.gov>.

New Master's Program in Geriatric Nursing

Dominican University of California has recently been awarded a large grant from the Gordon and Betty Moore Foundation to provide startup funds for the new Master of Science in nursing (MSN) program that will train students to become nurse educators with a specialty in geriatric nursing. The Geriatric Clinical Nurse Specialist/Nurse Educator program, scheduled to start in the fall of 2005, will be the only one like it in the San Francisco Bay area. The program is aimed at working clinical nurses and offers a flexible meeting schedule of alternative weekends for 5 semesters. For more information on the program, contact the school at www.dominican.edu.

Simulation Technology and Nursing Education Quality

The American Association of Colleges of Nursing (AACN) has recently received new funding to investigate the use of simulation technology to assess the competency of graduating nurses and to enhance education quality. Funding provided by the Helene Fuld Health Trust will be used to study and validate a simulation-based training and assessment tool adapted specifically for nursing by Simulis, a leading developer of simulation-based learning systems. AACN and Simulis will initiate the pilot program with a variety of institutions offering baccalaureate nursing programs in the second quarter of 2005. The project will begin by testing an already-developed Pain Management module. Simulis has also recently partnered with Sigma Theta Tau International, the Honor Society of Nursing, to build evidence-based Clinical Reasoning Systems for nursing education and skills assessment.

American Retirement Corporation Joins NADONA/LTC

NADONA/LTC (The National Association of Directors of Nursing Administration in Long Term Care) recently announced that American Retirement Corporation, comprising 66 properties offering independent living, assisted living

facilities, and therapy services to residents, has made 25 of its directors of nursing NADONA members. "It's our people that make the difference," says Elizabeth Barlow, RN, National Director for Quality Improvement for American Retirement Corporation. NADONA/LTC membership for our directors of nursing gives them the educational resources they need and the ongoing support they deserve to make that essential difference in the lives and care of our residents." For more information on NADONA/LTC's Assisted Living Programs, contact Gary Warden (gary@nadona.org) or Jamey Schleue (jamey@nadona.org).

Congratulations

2005 Christiane Reimann Prize Awarded:

The International Council of Nurses (ICN) recently announced that **Dr. Margretta Madden Styles**, a nurse scholar recognized globally as an international leader in nursing education, regulation, and credentialing, has been awarded the 2005 Christiane Reimann Prize for her international achievements and contributions to the nursing profession. The prize is awarded every 4 years and will be presented to Dr. Madden Styles during the opening ceremony of the ICN's 23rd Quadrennial Congress slated for Taiwan in May 2005.

Cherokee Inspired Comfort Award:

Lynda Chever, an LPN specializing in geriatric medicine who has devoted her life to the care of elderly Catholic priests and nuns residing at the Mohun Health Care Center in Columbus, Ohio, was recently selected as one of the 15 national winners of the 2004 Cherokee Inspired Comfort Award. Nearly 1,700 nominations were submitted from which the 15 winners were selected. This award, a national health care recognition program, raises awareness of the vital profession of nursing by highlight the best of the best in health care.

RESOURCES

Dementia and Alzheimer's Resources

- **The Alzheimer's Association**, 225 North Michigan Avenue, Suite 1700, Chicago, IL 60601; phone: (800) 272-3900; Web site: www.alzheimers.org
- **Alzheimer's Disease Education and referral (ADEAR) Center**, P.O. Box 8250,

Silver Spring, MD 20907; phone: (800) 438-4380; Web site: www.alz.org

- **Alzheimer's Caregivers Support Online**, phone: (866) 260-2466; Web site: www.alzonline.net
- **Alzheimer's Foundation of American**, 322 8th Avenue, 6th Floor, New York, NY 10001; phone: (866) 232-8484; Web site: www.alzfdn.org
- **The National Women's Health Information Center**: frequently asked questions about dementia. Available at: www.nlm.nih.gov/medlineplus/dementia.html

Guide for the Aging Driver

A new guide and online video for families worried about an aging parent's ability to drive safely are available at www.thehartford.com/talkwitholderdrivers or by writing to The Hartford, *We Need to Talk*, 200 Executive Blvd., Southington, CT 06489. The guide offers practical information on helping elders know when it is time to limit or give up driving altogether.

Alzheimer's Speaker's Kit Available

The Alzheimer's Disease Education and Referral Center (ADEAR) has developed a Speaker's Kit to help volunteers, health educators, and other community speakers disseminate basic information about Alzheimer's disease, diagnosis, treatment, and current and future research directions. The kit contains a PowerPoint slideshow and booklet based on the ADEAR Center's booklet—"Unraveling the Mystery of Alzheimer's Disease." For more information, go to the organization's Web site: www.alzheimers.org/unraveling/speak_kit.html.

Internet Resource

Health Politics with Dr. Mike Magee is an expertly researched and informative online

commentary from Dr. Magee, a senior fellow in the humanities to the World Medical Association and director of the Pfizer Medical Humanities Initiative. The program topics change weekly, but an archive of articles is available and offers many items of potential interest to geriatric nurses, such as commentaries on driving fatalities in the elderly, osteoporosis, hidden costs of caring for an Alzheimer's patient, and so on. Take a look at this free resource at www.HealthPolitics.com.

Patient Safety E-Newsletter Available

The Agency for Healthcare Research and Quality (AHRQ) has launched the AHRQ Patient Safety E-Newsletter. This new online resource will ensure that subscribers receive important patient safety news and information as quickly as possible. To subscribe to this free service, send an e-mail to listserv@list.ahrq.gov; in the subject line, type: Subscribe. For questions, e-mail Salina Prasad in AHRQ's public affairs office at sprasad@ahrq.gov.

GeroNurseOnline Program

Geriatric nursing resources are at your fingertips with the new GeroNurseOnline program made possible through the Nurse Competence in Aging initiative. You can access "Try This" tips from the Hartford Institute at the new Web site (www.GeroNurseOnline.org) by clicking on "Resources." New issues of the "Try This" series on Dementia include "Therapeutic Activity Kits," "Recognition of Dementia in Hospitalized Older Adults," and "Wandering in the Hospitalized Older Adult."

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CALENDAR

MAY

19-20

Alzheimer's Disease: Update on Research, Treatment and Care, San Diego, California. Contact: (858) 622-5850 or e-mail: jcollier@ucsd.edu.

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10th Annual VAMC San Francisco Nursing Research Conference: Improving Practice Through Research, San Francisco VA Medical Center, San Francisco, California. Contact: Alicia.Levin@med.va.gov, phone: (415) 221-4810 ext. 4901; or Mimi.Haberfelde@med.va.gov, phone: (415) 221-4810, ext. 4679.

21-27

International Council of Nurses (ICN) 23rd Quadrennial Conference, Nursing on the Move: Knowledge, Innovation and Vitality, Taipei, Taiwan. Contact the council's Web site for further information: www.icn.ch/congress2005.htm.

25-28

13th National Conference on Gerontological Nursing, of the Canadian Gerontological Nursing Association: "Gerontological Nursing: The Future's So Bright!" Halifax, Nova Scotia. To register online or for additional information, visit the Web site: www.cgna.net/home.htm.

JUNE

9-10

Pain Management and End-of-Life Care: A Comprehensive Approach to Patient Care, Fairmont Hotel, San Francisco, California. Conference sponsored by the University of California, San Francisco, Schools of Medicine, Nursing and Pharmacy. Contact: (415) 476-4251 or info@ocme.ucsf.edu. You can also visit the UCSF Office of Continuing Medical Education's Web site at www.cme.ucsf.edu.

18-21

International Conference on Prevention of Dementia, Washington, DC. Contact: www.alz.org,

e-mail to prevention@alz.org, or phone (800) 272-3900. Inquiries to the Alzheimer's Association, 225 N. Michigan Avenue, Suite 1700, Chicago, IL 60601.

21-25

Case Management Society of America's 2005 Annual Conference, Gaylord Palms Resort and Convention Center, Kissimmee-St. Cloud, Florida. Contact: www.cmsa.org/conference or phone (501) 225-2229, ext. 10.

20-22

Dementia: Molecules to Management, Brisbane, Queensland, Australia. Contact: Australian Society for Geriatric Medicine, c/o Organisers Australia, P.O. Box 1237, Milton, Queensland 4064, Australia; phone: (+61) 7-3371-0333; e-mail: asgm@orgaus.com.au or their Web site at www.asgm.org.au.

25-29

18th Annual NADONA Conference, New Orleans Marriott, Louisiana. Contact (800) 222-0539 or email to: info@nadona.org.

JULY

16th International Nursing Research Congress: Renewing Nursing Through Scholarship, Hilton Waikoloa Village, Hawaii. Contact: www.nursingsociety.org or e-mail to research@stti.iupui.edu.

26-29

13th Annual Dementia Care Conference, Hyatt Regency Chicago Hotel, Chicago, Illinois. Contact: Alzheimer's Association, 225 N. Michigan Avenue, Suite 1700, Chicago, IL 60601; phone: (800) 272-3900; Web site www.alz.org/careconference.

NOVEMBER

12-16

Sigma Theta Tau International 38th Biennial Convention, Indianapolis, Indiana. Contact: www.nursingsociety.org or e-mail Indy05@stti.iupui.edu.

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DEMENTIA TREATMENT UPDATE

Marti D. Buffum, DNSc, APRN, BC, CS, and John C. Buffum, PharmD, BCPP

Alzheimer's disease, the most common form of dementia, is a progressive and fatal neurodegenerative disorder that affects about 4.5 million persons in the United States. The disease affects about 30% of people older than 80 years, and the risk increases with age over 60 years. The fastest-growing segment of the population is over age 85. Indeed, dementia is estimated to affect 13.2 million persons by 2050.¹ Progressive memory loss and functional decline that characterize dementia pose extensive burden on families and health care resources. With no known cure, much research has been directed to treatment. This column presents an update on the newest medications for Alzheimer's disease (AD).

Emphases are on preventing onset, halting progression, and promoting improvement in cognition in patients with dementia. Prevention research has been focusing on vaccine development for promoting antibodies against amyloid. To date, pharmacologic treatments that have been tested for the above mentioned emphases include selegiline, piracetam, vitamin E, ginkgo biloba, anti-inflammatory agents,^{2,4} and hormone replacement therapy. According to the Cochrane Database of Systematic Reviews, these have not demonstrated efficacy for Alzheimer's disease.^{5,6} Clinical trials are investigating benefits of statins and entirely new medications that may offer neuroprotection.⁷⁻⁹ Medications for slowing progression and promoting improvement have pharmacologic actions that either inhibit cholinesterase or regulate glutamate; other drugs are used to manage behaviors such as depression, agitation, or anxiety. Drugs that have demonstrated benefit in reducing signs of AD are compared in [Table 1](#).

Disclosure of potential conflict of interest—M. D. Buffum owns shares of Pfizer. J. C. Buffum owns shares of Neurobiological Technologies, Inc.

The first cholinesterase inhibitor, tacrine (Cognex[®]), has been associated with hepatotoxicity and is seldom used. Hence, it is not included in the table. Antipsychotics, anxiolytics, and antidepressants that may be used to manage symptoms common to dementia are not included in the table.

The cholinesterase inhibitors differ in their pharmacokinetic properties. Both donepezil and galantamine are metabolized through hepatic cytochrome P450 enzymes (CYP450) involving the CYP2D6 and CYP3A4 pathways. Rivastigmine is metabolized by hydrolysis (not through CYP450), thereby greatly minimizing the drug interactions that exist with the other medications. Donepezil has a long half-life, administered once daily.

Memantine, with pharmacologic actions different from cholinesterase inhibitors, undergoes little metabolism, excreted nearly unchanged in the urine; no drug interactions are identified.

Deciding Which Drug to Select

The selection of the best medication for individual patients requires consideration of the type and severity of dementia, potential for drug interactions, side effects, and comorbidities. All of these drugs are approved for AD at stages described in [Table 1](#). Drug interactions are presented in [Table 2](#).

Because AD is more prevalent than vascular or Lewy body dementia, most medications have been tested for efficacy in AD. Up to 70% of dementias are of the Alzheimer's type, and the medications are more effective in AD than in those dementias. Vascular dementia affects 1% to 20% of people over 65 years and is secondary to vascular injury to the brain; dementia symptoms are related to size and location of cerebrovascular lesions. Interventions usually focus on controlling cardiovascular risks.¹² One study with memantine revealed significant improvement in cognitive function and behavioral

Table 1.
Drugs That Reduce Symptoms of Dementia^{6,7}

| Name (Generic/Trade) | Mechanism of Action | Stage of Dementia (AD) (FDA Indications) | Dose mg/day | Daily Doses | Absorption Affected by Food |
|----------------------|---|--|-------------|-------------|-----------------------------|
| Donepezil/Aricept® | Cholinesterase inhibitor | Mild to moderate | 5–10 | 1 | No |
| Rivastigmine/Exelon® | Cholinesterase inhibitor | Mild to moderate | 3–12 | 2 | Yes |
| Galantamine/Reminyl® | Cholinesterase inhibitor | Mild to moderate | 8–24 | 2 | Yes |
| Memantine/Namenda® | N-methyl-D-aspartate (NMDA)-receptor antagonist | Moderate to severe* | 5–20 | 2 | No |

*Data have been submitted to the Food and Drug Administration supporting memantine efficacy also in mild dementia.

symptoms in mild to moderate vascular dementia.¹³ The multifactorial and heterogeneous nature of vascular dementia poses challenges to conducting drug trials, which is the reason no recommendations are made.¹⁴ Mixed dementia refers to a combination of both AD and vascular pathology, and research offers no information about successful treatment.¹²

The following questions address issues that may be informative for nurses working with patients and their families.

1. Should the Drugs Be Stopped and Switched? Will This Improve the Effect?

Whereas some authors report that deterioration occurs if the drugs are stopped,¹⁵ others report that discontinuing for short periods did not result in irreversible worsening.^{16,17} Nonetheless, if there is need to stop, the time should be minimal and the medication restarted as soon as possible to prevent possible deterioration. Reasons to switch medications might be, for example, cases in which once-daily dosing is easier to accomplish than twice daily dosing or when drug interactions might occur. Titration should always be considered when restarting the medication; as with all geriatric dosing, the rule is to “start low and go slow.”

2. Will Early Initiation Result in Long-Term Benefits?

Clinical trials suggest that starting treatment

early will prevent early decline. It is unknown whether decline prevention occurs if medications are taken when the Mini-Mental State (MMSE) score is close to normal, between 27 and 30.

The cholinesterase inhibitors are approved for mild to moderate dementia. However, the cholinesterase inhibitors have only been studied in patients with a MMSE score of between 10 and 26.

As of November 2004, the Food and Drug Administration (FDA) has accepted Forest Laboratories’ filing of the supplemental New Drug Application for expansion of memantine’s indication to include mild Alzheimer’s disease.¹⁸ This means the FDA will consider approval of memantine for mild AD in the near future. In 1 published abstract, a study of 403 patients with mild to moderate probable AD (MMSE 10–22) were randomly assigned to memantine or placebo; those receiving memantine demonstrated significant cognitive and global function improvements.¹⁹ Furthermore, a review of 4 clinical trials validates safety and effectiveness of memantine across all AD stages of severity.²⁰ Still, it is unknown how early in the disease treatment could be beneficial.

3. Can Medications Be Combined?

When patients are stabilized on cholinesterase inhibitors and suffering from moderate

Table 2.
Drug Interactions^{10,11}

| Name (Generic/Trade) | Drug Interactions |
|---|---|
| Rivastigmine/Exelon® | Increased oral clearance (decreases level of rivastigmine): cigarette smoking |
| Donepezil/Aricept®; Galantamine/Reminyl® | <p>Inhibited metabolism of drug (raising drug levels): CYP2D6 inhibitors (amiodarone, amitriptyline, cimetidine, delavirdine, fluoxetine, paroxetine, propafenone, quinidine, ritonavir) CYP3A4 inhibitors (ketoconazole, quinidine, paroxetine, clarithromycin, erythromycin, fluvoxamine, itraconazole, nefazodone, ritonavir)</p> <p>May cause bradycardia: diltiazem, verapamil, pindolol, digoxin, amiodarone</p> <p>Increased risk of central nervous system adverse events: ethanol</p> <p>Reduces levels of other drugs (antagonist): anticholinergics</p> <p>Synergistic with other drugs: succinylcholine, bethanechol</p> <p>Increased risk for gastrointestinal bleeding or ulcer with concomitant use of NSAIDS</p> <p>Increased metabolism (decreasing drug levels): rifampin, rifabutin, barbiturates, phenytoin, cigarette smoking, St. John's wort</p> |
| Memantine/Namenda® | <p>Decreased renal elimination (increasing levels): drugs that alkalinize the urine (carbonic anhydrase inhibitors, sodium bicarbonate)</p> <p>Reduces levels of other drugs: hydrochlorothiazide</p> |

NSAIDS = nonsteroidal anti-inflammatory drugs.

to severe dementia, adding memantine may show some slowing of decline in cognition, activities of daily living, global outcome, and behavior.¹⁵ Combining memantine with a cholinesterase inhibitor in mild AD is a promising focus for research. More than 1 concurrent cholinesterase inhibitor is not advised.^{21,22}

4. What Are Possible Side Effects?

Side effects of cholinesterase inhibitors include nausea, vomiting, diarrhea, and anorexia with weight loss. These are more frequent at

dose escalation than during maintenance, and dose titration should be done slowly, sometimes over 4 weeks.²² Dosage change may be needed at any point. Administering medications with food may decrease gastrointestinal side effects.

Adverse events reported with the cholinesterase inhibitors include insomnia, abnormal dreams, incontinence, muscle cramps, bradycardia, syncope, and fatigue. Caution is advised in using the cholinesterase inhibitors in patients

with bradycardia, sick-sinus syndrome, active peptic ulcer disease, severe asthma or chronic obstructive pulmonary disease, urinary obstruction, or seizure disorders.^{21,22}

Side effects and adverse effects of memantine include dizziness, headache, confusion, and constipation.^{13,10,21} Caution is indicated with memantine in patients with renal impairment.^{10,21}

How the Drugs are Evaluated

The goals of therapy are to improve ability or prevent decline in cognition and function in patients with dementia while minimizing side effects. Package inserts have reported magnitudes of improvement based on percentages of patients achieving 4- to 7-point improvements on 1 cognitive test (Alzheimer's Disease Assessment Scale–Cognitive Subscale [ADAS-Cog]); these improvements are equivalent to disease reversal of 6 months to 1 year, respectively, depending on sensitivity of the tests used to evaluate cognition, function, and behavior.²² Not everyone shows improvement. Research shows no consistent efficacy differences among the anticholinergic medications.^{16,22} At maintenance doses, patients on trials lasting between 13 and 30 weeks showed significant improvements in cognition when taking any of the 3 cholinesterase inhibitors—donepezil, rivastigmine, and galantamine.²²

Applying Research Findings to Practice: Considerations

Research issues need consideration before applying findings to practice. Symptoms of dementing conditions are devastating for the individual and the family. All involved persons have an urgent desire to prevent deterioration, and they are desperate to try new medications. Nurses play a vital role in instilling hope through accurate education about safe and effective treatments.

Newest findings in the media throughout December 2004 reveal the dangers of anti-inflammatory medications as causing myocardial infarctions. The dangers for gastrointestinal bleeding and prevention of healing of existing ulcers prompt extreme caution. Certainly families need awareness about these dangers before embarking on an unsupervised trial of nonsteroidal anti-inflammatory drugs.

Patients and their families as well as providers can easily be confused by media reports. For example, they may be confused about the risk-benefit of the cholinesterase inhibitors. Of note is that a recent meta-analysis (a powerful statistical technique that incorporates outcomes of different studies and emerges with strong conclusive evidence) of 16 trials concludes that there is a modest but significant therapeutic effect of the cholinesterase inhibitors versus placebo along with modest but significantly higher rates of adverse events and discontinuation.²³ Should this evidence prompt usage?

Mixed-sample populations, sampling, and funding mechanisms need consideration. The similarity among the cholinesterase inhibitors enables generalization from the use of donepezil to the other drugs in this category. A recent large study (N = 565 persons) with donepezil in the United Kingdom, reported slight improvements in function and no delay in institutionalization or prevention of decline over 2 and 3 years; the investigators questioned the value of these medications.¹⁶ One research consideration is that the study was with community residents and included patients with Alzheimer's disease with and without vascular dementia. Because treatment for vascular dementia is problematic, poor responses could skew the results. Community residents with mild dementia and multiple comorbidities are more likely to be representative of real patients in clinical practice than selected patients for clinical trials of drug studies; cognitive and behavioral improvements may be harder to detect in community-based samples. Finally, this study was funded by the British government, the primary health care provider in Great Britain. The cost-benefit analysis prompts thought about the economic value of providing medication when improvement and time to institutionalization are no different from placebo. Other studies are often funded by the drug industry, and the commercial motives may bias reporting of effectiveness. This cost-benefit study is more current than the above-mentioned meta-analysis. Which should be believed?

Caution should be taken when interpreting research and attempting to generalize findings to all individuals. Bias exists because persons selected to participate in clinical trials are

known to differ from unselected populations of AD patients. For example, patients who participate in research tend to be better educated, wealthier, and younger than patients not enrolled in trials; they also tend to be Caucasian, receiving care in an academic environment, and encouraged to stay the study duration.²² To minimize side effects and create more homogeneous samples, patients with comorbid conditions are often excluded from drug studies; thus, healthier people are studied. Additionally, participants may concurrently be taking other remedies for decreasing AD effects. Of note is that baseline medication use in a study combining memantine and donepezil, patients were taking tocopherol (vitamin E; 59%–64%), ginkgo biloba (12%–15%), and calcium (10%–12%);¹⁵ efficacy of these medications is not known and could influence findings when mixed within studies. In sum, medication regimens need to be customized for each individual in the context of their health and environment.

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RELATIONSHIP OF DEMENTIA AND BODY WEIGHT

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The number of people with dementia will increase by an estimated 400% between 2000 and 2050. Obesity and weight loss are related to dementia in what seem to be contradictory ways. Weight monitoring has always been essential to the care of older adults, but it may become an important tool for dementia prevention and treatment in the future.

Obesity

Women obese at age 70 showed an increased risk of developing Alzheimer's disease in their 80s, according to a Swedish study. There was no significant relationship between weight and cognitive function among the men studied. Other research assessed the calorie and fat intake of older adults with and without the Apo E4 allele. Apolipoprotein E is a protein involved in transporting cholesterol in the blood. People with the Apo E4 allele are more likely to develop Alzheimer's disease. The combination of genetic predisposition and higher intake of fat and calories doubled the risk of developing symptoms of dementia. This study did not report the weight status of the participants whose weight may have varied according to their fat and calorie intake.

Weight Loss

Other studies show a relationship between weight loss and dementia. In free-living older men and women followed for a period of 20 years, the group that eventually developed Alzheimer's disease showed a significant decrease in weight over time. There was no significant weight loss in the men and women whose cognition was unimpaired. Researchers concluded that the weight loss was not a consequence of the dementia but an indicator of mild to moderate dementia.¹

Men in the Honolulu-Asia Aging Study lost weight in the 6 years before developing dementia, more weight than those who did not devel-

op this condition. The weight loss seemed to coincide with a period of mild cognitive impairment preceding their dementia diagnosis. These men were followed for 32 years and received several careful assessments of mental status. Most of the men were in the normal weight range at the beginning of the study.²

Dementia and the wandering associated with it are often considered to be a cause of weight loss in older adults with Alzheimer's disease, not the result. With further research on the timing of weight loss in relation to diagnosis, health care professionals may be able to anticipate dementia diagnosis and intervene. Weight loss in older adults already diagnosed with Alzheimer's disease is an indicator of a negative prognosis and greater mortality. The *Physician's Guide to Nutrition in Chronic Disease Management for Older Adults* from the Nutrition Screening Initiative describes weight loss as an early symptom of dementia.

Mechanism for the Weight Loss Effect on Dementia

Weight loss may contribute to cognitive impairment. Atrophy in certain lobes of the brain correlates with lower body weight. High levels of the hormone cortisol resulting from weight loss may be one reason. The complicated relationship between hormones such as cortisol and leptin, an appetite-suppressing hormone, and free radicals that result from metabolism of food may also explain some of the effects of weight loss on brain function. Excess production of free radicals may also partially explain the relationship between dementia and high fat and calorie intakes.

Importance of Monitoring Weight

The Minimum Data Set describes as significant weight loss of 5% or more in 30 days or 10% in 180 days. Weight loss can predict mortality in elderly people. Nursing home staff should mon-

itor weight changes of elderly residents, even though interpretation of weight changes can be complicated. Measuring weight regularly using a systematic method such as a bed, bath, or standing scale promotes accuracy. Policies and procedures developed to help nursing home staff with weight status monitoring are available at the following Web site: http://www.fiu.edu/%7Emutreldr/LTC_Institute/materials/LTC_Products2.htm.

Additional materials at this site include instructions for accurate weighing, evaluating weight change, and a weight record sample form.

Regular weight monitoring combined with mental status assessments can help nursing home staff identify elders at risk for dementia. Drug therapies that slow the progress of dementia can then be instituted and families, and caregivers can adapt living arrangements to prepare for its effects. Nursing home staff consistently overestimate the nutritional intake of residents. Weight is a more reliable indicator of calorie intake.

Intentional Weight Loss

Many elders are at risk for or have chronic diseases that are made worse by overweight and obesity. Carefully monitored, gradual weight loss to control blood sugar or blood pressure is not likely to increase the risk for dementia. In fact, type 2 diabetes and cardio-

vascular disease increase the risk of developing the vascular type of dementia.

Physical Activity

Higher levels of physical activities such as walking are associated with better maintenance of cognitive function and less cognitive decline in women in the Nurses Health Study. Men in the Honolulu-Asia Aging Study who walked more had a reduced risk of developing dementia. None of these studies related physical activity to weight, but it is likely that the weight loss of early dementia is not related to intentional increases in physical activity.

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DEMENTIA: COMPLEX CARE NEEDING ONGOING ASSESSMENT

Author's Note: The following patient scenario highlights the multiple and complex problems that caregivers and families face as they seek to provide the best, safest care for patients and to identify the best setting for that care. The patient scenario is followed by a listing of resources available to assist nurses and family caregivers in this quest.

Mr. Davis is a 76-year-old man living in his own home in a suburban neighborhood. He has been a widower for approximately 6 years, and a home care agency was contacted to provide an assessment because the family is increasingly uneasy with his continuing to live alone. The family reports that he still dresses himself and drives but that he is increasingly forgetful and that "they are worried." When asked for an example about his forgetfulness, the daughter stated, "We turned off the stove so it could not be used, but he is unaware of that and frequently calls the appliance store to turn it back on. Now we are worried that he is going to buy a new stove." The daughter goes on to explain Mr. Davis has 7 adult children, all within a 10-mile area, and they take turns coming over in the mornings and cooking breakfast and then leave him food for lunch and dinner. The daughter also notes that Mr. Davis has lost weight over the past few months. She emphasizes that he will not leave his home, and when they have broached the subject of moving out of the home, perhaps to an assisted living center, he angrily orders them out of the house. In addition, they express concern over his driving and shopping habits; he has spent thousands of dollars in the last months on new TVs and other electronic equipment. She explains that although he has the money, they are worried about his driving and believe he may be experiencing some personality changes. He was recently involved in a fender-bender when he backed into another car and then physically threatened the other driver, a young man.

Fortunately, the young driver called the police on his cell and sat in the car until they arrived. The daughter was later contacted and told that her father should no longer be driving. A court date has been set for the accident, and the daughter is aware that she has to make some changes. Until that time, she wants the home care program to provide an aide as much as possible. The problem is that as soon as the agency identifies an aide for the assignment and takes the aide out to meet Mr. Davis, he "fires" the person and will not let him or her back into his home. Finally, he fell the week before (reportedly while trying to get under the stove to identify why it would not turn on) and now has a cast on his right foot. The nurse case manager refers the family to their doctor, who recommends a geriatrician as a starting point for a safety plan. The daughter and her siblings are now considering whether Mr. Davis should live with them or if they can alternate caring for him in his own home. Months later, the daughter calls the agency to say that their father has been evaluated and diagnosed with dementia and she was told that it might be Alzheimer's disease (AD).

Patients like Mr. Davis have a plethora of problems that all affect safety—his own and that of others. Unfortunately, these patients are increasing as the population ages. In fact, the estimates of how many people with AD drive are staggering and frightening. AD is the most common cause of dementia among people aged 65 and older. Regardless of the diagnosis patients with these problems need assistance primarily related to safety and personal care.

The following are resources to help ensure that the elderly with dementia or AD are properly cared for in the home for as long as safely possible.

Alzheimer's Disease Centers: The National Institute on Aging (NIA) funds 29 Alzheimer's Disease Centers (ADCs) across the country and many of them also have satellite offices in

underserved and rural communities. Many of the centers are located at large university hospitals, including Stanford, Duke, Case Western Reserve, Mayo Clinic, and Johns Hopkins. For patients and families, they provide diagnoses and management, information about the disease, resources and services, volunteer opportunities related to drug trials, support groups, and other programs. For the current listing of ADCs, visit www.alzheimers.org.

Alzheimer's Association: This national association provides education and information about the disease. It can be reached through its Web site: www.alz.org.

Alzheimer's Disease Education and Referral (ADEAR) Center: The ADEAR center is a part of the National Institutes on Aging (NIA) and provides publications and information about AD, including booklets on caregiving and other resources. There are also phone lines staffed by information specialists to provide referral and other information. NIA can be contacted by calling (800) 438-4380 or by visiting its Web site: www.alzheimers.org.

National Institute on Aging: The NIA offers a 60-page book titled *Alzheimer's Disease: Unraveling the Mystery*. This book introduces the concept of Alzheimer's and has a practical definition: Dementia is the loss of memory, reason, judgment, and language to such an extent that it interferes with a person's daily life and activities. It is not a disease itself, but a group of symptoms that often accompanies a disease or condition." The book is in color and explains the brain, factors related to AD, and support for families and other caregivers. The book also offers a glossary of brain and other terms as well as a CD with a brief animation explaining Alzheimer's and text and PDF files of the book. The book can be ordered by calling ADEAR (800) 438-4380.

Caregiver Guide: Tips for Caregivers of People with Alzheimer's Disease. The NIA

offers this 23-page guide free to caregivers and others. Topics addressed include communication, bathing, dressing, eating, activities, exercise, incontinence, sleep problems, hallucinations and delusions, wandering, home safety, driving, visiting the doctor, choosing a nursing home, and more. Call the Alzheimer's Disease Education and Referral at (800) 438-4380 to order.

Eldercare Locator: The Eldercare Locator is a national directory assistance program that helps patients and caregivers locate local services. It is funded by the U.S. Administration on Aging (www.aoa.gov). To contact Eldercare Locator for services, call (800) 677-1116.

Hartford Foundation Institute for Geriatric Nursing: The institute offers many helpful and practical resources. "Try This" is a publication of the Hartford Institute and is a series of assessment tools that focus on issues specific to older adults. All of the tools are considered best practices and include, for example, "Katz Index of Independence in ADLs," "The Mini-Mental State Examination," "Fall Risk Assessment," "Confusion Assessment Method," "Caregiver Strain Index," and "Assessing Pain in Persons with Dementia," among others. These can be viewed on the institute's Web site: www.hartfordign.org.

The 36-Hour Day: A Family Guide to Caring for Persons with Alzheimer Disease, Related Dementing Illnesses, and Memory Loss in Later Life by Nancy Mace is a book that all caregivers and family members should read. It provides insight into the patient with AD and the care needed. Amazon.com or local bookstores offer this text.

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Making the Moments Count: Leisure Activities for Caregiving Relationships

Joanne Ardolf Decker
1997, Johns Hopkins University Press, 192 pages, paperback, \$14.95.

Alzheimer's: The Answers You Need

Helen D. Davies, Michael P. Jensen
1998, Elder Books, Forest Knolls, 138 pages, paperback, \$10.95.

Candle and Darkness: Current Research in Alzheimer's Disease

Joseph Rogers
1998, Bonus Books, 166 pages, paperback, \$13.95.

Caregiver's Reprieve: A Guide to Emotional Survival When You're Caring for Someone You Love

Avrene L. Brandt
1997, Impact, 106 pages, paperback, \$11.95.

Be Prepared: The Complete Financial, Legal, and Practical Guide for Living with a Life-Challenging Condition

David S. Landay
1998, St. Martin's, 447 pages, hardcover, \$29.95.

Gerontological nurses work not only with patients but frequently also with the caregivers of these patients. The mental and physical health care needs of many of these geriatric patients are dependent on the care provided by nonprofessional caregivers. There are an estimated 7 million unpaid nonprofessional caregivers in the United States. Gerontological nurses must have knowledge of the role of the caregiver to provide better care for the older person with chronic disease or illness. Providing the caregiver with support and ways to survive the work of caregiving are important roles for the geriatric nurse. One way for the geriatric nurse to learn about caregiving is by reading books about caregiving.

This month's reviewed books are written for caregivers and cover a variety of key aspects of caregiving as well as providing specific support for the caregivers of persons with Alzheimer's

disease. Geriatric nurses need to be familiar with these types of books and the information contained in them; they may want to recommend some of these books to caregivers or use them as teaching guides when working with caregivers of all kinds—family, friends, and volunteers. Geriatric nurses may also want to recommend these books to local public or medical libraries.

A certified therapeutic recreation specialist wrote *Making the Moments Count: Leisure Activities for Caregiving Relationships*. Leisure is frequently thought of as something you do if you have completed all your tasks and then have some left-over time. Joanne Ardolf Decker debunks this theory of leisure. She describes to the reader how to bring leisure into all activities using small true-to-life scenarios. She provides strategies that can bring the caregiver and patient closer together. An extensive checklist of leisure favorites when completed will provide the caregiver with ideas of what leisure activities are enjoyed and can still be done by the patient. Activities for ambulatory, limited mobility, and bed-bound patients are described. Chapters are divided into areas of activity called THE P.I.E.S.S. system:

Physical activity: using simple natural body movements with daily activities, rather than a strenuous exercise program. Examples: have the bed-bound patient squeeze stuffed animals; have the ambulatory patient help set the table.

Intellectual activity: keeping the mind active through recall, reminiscence, decision making, following directions, and stimulation of senses. Example: use maps to reminisce about previous vacations and trips.

Emotional and Expressive activity: expression of moods through humor, self-esteem building, creativity and self-expression. Example: caring for a pet, collecting comics, keeping a journal, engaging in hobbies.

Social activity: connections with other people and with plants, pets, and the community. Example: celebrate holidays, plan trips, and maintain association with clubs.

Spiritual activity: being in touch with one's Higher Power, life and death, motivation, and

inspiration. Example: attend church, watch or listen to religious TV shows or radio programs, prayer.

This author does not forget the leisure needs of the caregiver and stresses the importance of caregivers taking time for leisure activities of their own to stay refreshed to continue to provide care. Eighty-eight fun, free things to do are provided for the caregiver. Some of these activities include learning to play the harmonica, making cookies, telling jokes, praying, and throwing away clutter. A list of resources for special needs is found at the back of the book. This is an easy book to read. It is full of wonderful ideas and can be useful for the geriatric nurse and caregiver. Keep this book handy and share its information with caregivers.

Alzheimer's: The Answers You Need is written by a caregiver of an Alzheimer's patient and by the co-director of the Stanford/Veterans Administration Alzheimer's Center. This is a short and quick-read book. It is written in question-and-answer format with each question listed at the top of a page. It is directed at the person with early-stage Alzheimer's and their caregivers. There are questions about sex, driving, stigma, durable power of attorney, finances, work, changes within the family and marriage, treatments, vitamins, and other issues. This book can be read from cover to cover or just skimmed, reading only selected parts. Helen D. Davies and Michael P. Jensen provide caregivers with a quick and easy-to-read book on a difficult topic. Geriatric nurses may find this book useful and share it with patients with early-stage Alzheimer's and their caregivers.

Candle and Darkness: Current Research in Alzheimer's Disease is written by a scientist devoted to studies of aging and Alzheimer's disease. It is a short and quick-read book. Joseph Rogers describes what Alzheimer's is, what treatments are available, and what research is being done. It gives hope that research will find a cure for this disease one day. He discusses who is at risk for Alzheimer's and what happens to the person and the brain of someone with this disease. Technical chapters on apolipoprotein E, amyloid B peptide, and neurofibrillary tangles may be of interest to some caregivers but may be too advanced for others. In the back of the book, the reader is provided with a list of

additional reading material, both technical and nontechnical in nature. The author also lists the names and places of locations of current Alzheimer's research. This book helps make a difficult disease understandable for geriatric nurses and caregivers of Alzheimer's disease.

Caregiver's Reprieve: A Guide to Emotional Survival When You're Caring for Someone You Love is written by a clinical psychologist. In addition, this short, quick-read book provides information about the stressors and emotional aspects of caregiving. Avrene L. Brandt uses stories to demonstrate the role of the caregiver. Caregivers reading this may identify with some of the stories. Caregivers are told that their feelings are normal. She describes the psychological defenses that caregivers use to survive: denial, isolation, rationalization, and displacement. This book looks at caregivers who are family members—parents, spouses, and children—and looks at how family relationships are changed when one takes on the role of caregiver. Examples of emotional aspects of caregiving: fear, denial, anxiety, frustration, resentment, anger, guilt, isolation, depression, and grief are identified. Developing coping tools such as physical exercise, relaxation techniques, time away, humor, and support systems are addressed. A list of personal and social support resources is provided for the caregiver. Caregivers are given guidelines for coping with emotions in a simple format. Gerontological nurses should read this book because it gives insight into the life of a caregiver; caregivers of all types can benefit from reading this book.

Be Prepared: The Complete Financial, Legal, and Practical Guide for Living with a Life-Challenging Condition is written by a practicing attorney who heads an information resource firm dedicated to advising people with life-challenging conditions. This is a large book and not necessarily meant to be read from cover to cover. David S. Landay has given caregivers an excellent reference book. It contains 38 chapters in 8 parts dealing with what the title indicates. The detailed table of contents and index make it easy for the reader to find a subject of interest. There are introductions to all chapters and simple, practical tips are provided in each chapter.

Part 1 consists of one chapter, an overview of the entire book, and the reader is encouraged to

read this chapter to better understand the volume's contents. Part 2 reviews the building blocks for successful living. Attitudes, coping, relaxation, employment benefits, social security, credit status, health, financial information, employment, and net worth are some of the topics discussed. Part 3 reviews topics about income, including disability, hiring, rehiring, confidentiality, advancement, leave of absence, health insurance protection, making your job work better for you, the ideal job, job interviews, disability income, worker's compensation, unemployment insurance, retirement planning, and investments.

Part 4 contains information about protection against increased expenses. Included are discussions on health insurance, Medicare, Medicaid, government programs, property and casualty insurance, financial management and taxes. Part 5 details new uses of assets. Subject matter includes life insurance as a liquid asset, conversion of retirement assets to income, and rethinking credit, real property, and other

assets. Part 6 deals with health matters such as finding a doctor, drugs and treatments, nutrition and exercise, home, assisted living, nursing homes, hospitals, hospice, and bodily changes. Part 7 describes estate planning, advanced directives, health care power of attorney, wills, taxes, and funeral arrangements. Part 8 talks about the importance of support groups, describes who is on a support team, and addresses travel and a few other topics such as student loans, pets, and disabled parking.

This book is an excellent resource for anyone who is or may become a caregiver for a person with a chronic disease or illness. It should be required reading for all gerontological nurses.

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NGNA NEWS

**Robin E. Remsburg, PHD, APRN, BC, FNGNA, and
Neva L. Crogan, PhD, APRN, BC, FNGNA, Section Editors**

NGNA: WHAT'S IT ALL ABOUT?

The **mission** of the National Gerontological Nursing Association (NGNA) is to promote gerontological nursing in order to influence the clinical care of older adults.

The **goals** of NGNA are to:

1. Provide a forum in which gerontological nursing issues are identified and explored
2. Promote the specialty of gerontological nursing
3. Conduct educational programs
4. Promote research in gerontological nursing
5. Support the professional development of nurses whose practice includes older adults
6. Engage in programs designed to demonstrate innovative techniques and approaches in gerontological health care to better meet the needs of America's aging population
7. Advocate for legislation which enhances the care of older adults and the role of gerontological nursing in the care of older adults
8. Provide grants to conduct activities which further the goals and purposes of NGNA
9. Disseminate information related to gerontological nursing

Then NGNA Board of Directors, in conjunction with its committees, task forces, appointed representatives, and NGNA Fellows, are dedicated to carrying out the mission and goals of the Association. Members are encouraged to participate through committee and task-force activities, running for a position of leadership at the local chapter or national level, and recruiting new members to NGNA.

Some highlights of 2004 NGNA activities include the following:

- Chartering 3 new NGNA chapters
- Initiating plans for redesign of the Web site
- Collaborating with the Canadian Gerontological Nursing Association to write a joint position statement
- Reviewing and revising important organiza-

tional documents such as the policy and procedure manual, strategic plan, and awards and scholarship applications

- The Clinical Practice Committee published 4 Innovations in Clinical Practice (ICP) papers and identified topics for ICPs in 2005
- The Convention Planning Committee planned an exciting and lively 2004 Convention in Las Vegas
- The Research Committee reviewed poster abstracts for the convention and selected the Judith V. Braun Research and Innovations in Practice Award recipients
- The Education Committee completed a member needs assessment process and planned the Certification Preparation Review course that was presented at the 2004 Convention
- The Nominating Committee recruited members for the 2004 Elections; the membership elected a new treasurer, 2 directors-at-large, a president-elect, and 3 Nominating Committee members
- The Board initiated many e-mail communications to notify members of important and late-breaking information
- NGNA collaborated with the Cancer Care Network
- Members represented NGNA at numerous national meetings including the Nursing Organizations Alliance, Nurse Competence in Aging Program, Senior Clinicians Task Force, Centers for Medicare and Medicaid Services (CMS) Staffing and Quality Partners Projects

A Few Words About the 2004 Convention

Kudos to the NGNA Planning Committee for the work that contributed to the very successful 2004 Convention, *Gerontological Nursing: Aging Is a Work of Art*, at the Stardust Hotel in Las Vegas, Nevada. Examples of comments from convention participants include the following:

"I learned a lot, but most importantly there was great networking. I always knew special people took care of our seniors."

"So inspiring! Excellent topics/speakers, valuable to my practice."

"This was one of the best conferences that I have attended. It was so very well organized. Staff was extremely helpful and pleasant—very professional. The food was superb! Thank you! Presenters were outstanding! Information was current and accurate. I am so proud to be a gerontological nurse!"

"The speakers were all dynamic and interesting. The Planning Committee did a fantastic job."

"The convention was outstanding in every aspect! Great quality of presentations, quality of the hotel, and quality of the food."

"Poster presentations were some of the best I have ever seen! Excellent!"

"Excellent conference. My first one!"

"I'm looking forward to next year in Myrtle Beach."

"Gala outstanding!"

20th Anniversary Convention in 2005

The 2005 Planning Committee is hard at work preparing for the 20th Anniversary NGNA Convention, October 21–23, 2005, in Myrtle Beach, South Carolina. The theme is *Gerontological Nursing: Looking Toward the Horizon!* Mark your calendars and make plans to join your peers in the anniversary celebration of NGNA's dedication to the clinical care of older adults across diverse care settings. For more information, visit the NGNA Web site at www.ngna.org.

2005 Call for Poster Abstracts

The *Call for Posters* for the 2005 NGNA Annual Convention, October 20–23, 2005, Myrtle Beach, South Carolina, is available on the NGNA Web site (www.ngna.org) or by contacting the NGNA National Office at (800) 723-0560. Abstracts selected for presentation at the annual meeting will be featured in the 2006 January/February issue of GN.

2005 Opportunities for Leadership— A Call for Nominations

The NGNA Nominating Committee is seeking candidates for the office of vice president, secretary, directors-at-large, and Nominating Committee members (2). The National Office must receive nominations no later than April 30, 2005, for consideration by the Nominating Committee. All current members of NGNA are eligible to be nominated. Self-nominations are also encouraged. Nomination does not guarantee that a person's name will appear on the final slate. Complete instructions and nominations can be obtained from the National Office at (800) 723-0560 or by visiting the NGNA web page at www.ngna.org.

NGNA Recognition and Scholarship Opportunities—A Call for Nominations

Excellence in Gerontological Nursing Awards

The Excellence in Gerontological Nursing Awards were established to recognize excellence in individuals who provide direct care to older adults. Four awards honor a recipient in each of the following categories: registered nurse, advanced practice nurse, licensed practical nurse, and a certified nursing assistant; the honorees will have consistently provided outstanding care to older adults and been inspirational role models and mentors to other health care workers.

Mary Opal Wolanin Scholarship Program

NGNA currently offers 2 scholarships in memory of Mary Opal Wolanin. The Board of Directors recently removed the requirement that applicants must be members of NGNA; a 1-year membership in NGNA will now be given along with the award.

Graduate—A nursing student with a major in gerontology or geriatric nursing enrolled in a nationally accredited nursing program and carrying a minimum of 6 credits. Applicants must submit proof of U.S. citizenship. A \$1,500 scholarship will be awarded at the annual convention.

Undergraduate—Eligible applicants include full-time or part-time nursing students in a

nationally accredited U.S. school of nursing. Applicants must have an intent to work in a gerontology or geriatric setting after graduation. A \$1,500 scholarship will be awarded at the annual convention.

Distinguished Service Award

The Distinguished Service Award, established in 1999 by the NGNA Board of Directors, is presented to a NGNA member in recognition of outstanding leadership, participation, and contributions toward achieving NGNA goals.

Cindy Shemansky Travel Scholarship

The National Gerontological Nursing Association Travel Scholarship was established to provide assistance to NGNA members who wish to attend the annual convention but who need financial assistance with travel expenses. Each Scholarship is a \$1,000 cash award that can be used for registration fees, lodging, and other travel costs. Individuals who have been members of NGNA for at least 1 year are eligible for the Scholarship. Members of the Board of Directors are not eligible for the Scholarship.

NGNA Photo Contest

Each year NGNA holds a photo contest to identify pictures that promote and highlight positive aspects the older adult population. The NGNA photo contest is open to NGNA members and NGNA Chapters. The contest winner receives a complimentary registration to NGNA's 2005 convention.

2004-2005 Board of Directors

The members of the Board of Directors for 2004-2005 are as follows:

President: Cindy Shemansky, MEd, RN,C, LNHA, FNGNA

Vice President: Neva L. Crogan, PhD, APRN, BC, FNGNA

President Elect: Robin E. Rensburg, PhD, APRN, BC, FNGNA

Secretary: Victoria Schirm, PhD, RN, CS

Treasurer: Amy Cotton, MS,CS,FNP

Director: Barbara McCabe, PhD, APRN, BC, FNGNA

Director: Anita Siccardi, EdD, APRN, BC

Director: JaNellyn Hannah, BSN, RN,BC, PHN, CDE

Director: Martha Sparks, PhD, RN, GCNS

The NGNA Board of Directors would like to extend thanks to outgoing Board members Shirley Travis and Kay Cresci for their hard work and dedication to the organization. Kay and Shirley were presented plaques in recognition of their service at the 2004 NGNA convention.

News From the Chapters

Three new Chapters were chartered in 2004: the Southwest Texas Chapter, Atlanta Area Chapter, and North Carolina Piedmont Regional Chapter. The NGNA Chapter Committee is available to assist NGNA members start a chapter. If you are interested in starting an NGNA chapter, contact Barbara Broxson at the National Office, (800) 723-0560.

Call for NGNA Section Manuscripts

Calling all NGNA members! We are seeking manuscripts for the NGNA section of *Geriatric Nursing*. We would like to showcase NGNA members' research studies, clinical projects, and innovative clinical practices. In particular, we are interested in evidenced-based care, translating research into practice, use of new technologies or new applications for established technologies, end-of-life care, effective ways to reduce nursing errors, cost-effective care, innovative staffing strategies, and new care models. Manuscripts that address health care issues for older adults in any setting where gerontological nurses practice (e.g., long-term, acute, ambulatory, and home care) are highly desired. Manuscripts may focus on administration, education, research, clinical practice, community service, or health policy implications.

The NGNA section provides members an opportunity to share their expertise and experience with fellow gerontology nurses. Query letters are welcome (but not necessary). For instructions on manuscript preparation see "Author Guidelines" at www.mosby.com/gerinurs. Send all correspondence and manuscripts to the National Office: NGNA, 7794 Grow Drive, Pensacola, FL 32514; fax: (850) 484-8762; e-mail: ngna@puetzamc.com.

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Incorporating Medication Regimen Reviews Into the Interdisciplinary Care Planning Process

Judy Binch, RN, Ron Beamon, MD, Stephanie Clontz, BSW, Patti Goodwin, RN, BSN, Heather Hartwig, CTRS, Ratna Kolhatkar, RD, Mike List, RPh, Pharm D, and Shirley S. Travis, PhD, APRN, FAAN

Although many long-term care providers regard medication utilization reviews in terms of regulatory mandates, survey deficiencies, practice intrusion, and policy violations, not all consider these activities in such negative terms. This article describes the approach used by a large interdisciplinary team at a private continuing-care retirement community (CCRC) in North Carolina that includes medication regimen review in the larger context of resident care planning. (*Geriatr Nurs* 2005;26:89-93)

One recent national study reported that nursing home residents received an average of 6.7 routine prescription medications and 2.7 prn (as needed) medications per day in 2000.¹ Because the rate of medication error increases with the number of medications given, and elders in long-term care are among the highest users of potentially lethal drug combinations, few people question the importance of drug utilization reviews in these settings.²⁻⁵

For those long-term care facilities that receive Medicare and Medicaid reimbursement, the Centers for Medicaid and Medicare Services (CMS) exert a powerful influence on drug utilization patterns through a vast array of policy mandates and state surveyor procedures.⁶ Even with this mandated oversight by many individuals at many levels of review, polypharmacy, medication error, and adverse drug reactions with resulting hospitalization and death are long-standing and persistent medication-related problems for vulnerable older adults who reside in long-term care facilities.^{2,7-9}

Our purpose is to describe the care planning practices at a private-pay continuing-care retire-

ment community (CCRC) in the southeastern United States where drug utilization reviews are a routine part of interdisciplinary team meetings for residents in both assisted living and nursing home care. The mission statement of this organization specifically addresses the need to attend to the physical, emotional, intellectual, social, and spiritual needs of the residents. This mission translates into 3 primary themes for medication administration practices: 1) drug utilization review is just “good practice,” 2) measuring therapeutic outcomes in long-term care requires a holistic mind-set that considers all aspects of a resident’s care and his or her response to treatment, and 3) concerns about intrusion or meddling in someone else’s professional practice domain are counterproductive to cohesive team management of the residents’ needs. We also discuss 3 common barriers to creating interdisciplinary teams and conclude with suggestions for improving the practice of medication utilization review in environments where cohesive interdisciplinary teams do not exist.

Interdisciplinary Teaming and Effective Medication Regimen Reviews

In this large CCRC, the monthly team meetings are regularly attended by the medical director, nursing administrator, nursing team leaders, dietitian, social services coordinator, activities coordinator, and the consulting pharmacist. This interdisciplinary team cares for residents on nursing home units, a memory impaired unit, and an assisted living unit.

Just Good Practice

Mandates, regulations, and the threat of deficiencies may lead a team to address medication

utilization issues, but they will not necessarily make the team focus on what constitutes good practice and good resident care. There are many ways to organize a discussion about a resident's care that enable teams to focus on what is working and what is not. In our team meetings, the medical director serves as chair. Before the meeting, the director of health services (a nurse), the nurse manager, or the head nurse of the nursing home unit provides the chairperson with a verbal summary of the relevant issues for each resident on the list for discussion. Residents may also be added at the last minute when new problems emerge over night. All residents' charts are transported to the conference room the morning of the meeting and are readily available if needed.

The presentation of a resident to the team by the medical director usually begins with a statement of the problem, need, or concern that has been identified from regular resident assessments, family members, or the resident. The staff member who is closest to the issue (nurse, social worker, dietician, etc.) follows the introduction with details for the team discussion. Others on the team are then invited to add information, ask questions, or propose solutions and changes to the plan of care.

Medication-related issues regularly include discussions about benefits and potential adverse effects of adding or eliminating a medication from the resident's current medication profile, the resident's response to previous trials of a medication under consideration, any known idiosyncratic responses to medications, past adverse drug events, and cost comparisons of medications. A secondary gain of these discussions is ongoing educational opportunities for the team to learn about geropharmacology, pharmacokinetics, and pharmacodynamics. A standing rule is that no questions are off limits.

Although much of the information offered for discussion about medication regimens comes from the medical director and consulting pharmacist, the other members of the team are also important resources. The dietician, for example, is a trusted and valued source of information about potential drug-food interactions, weight loss and weight gain issues, and general nutrition considerations and pharmacotherapy. The nursing members of the team regularly provide

expert insight into the trials and tribulations of administering medications to frail older adult populations and the needs of individual residents. For example, swallowing multiple pills and capsules is a common problem in long-term care settings. Problem solving includes discussions about mixing medications with different foods and food textures, alternative routes of administration, dosing and administration schedules, and changing a medication to one that is more palatable to the resident. Ultimately, the team arrives at the medication regimen that is most suited to the needs of the individual resident to achieve the desired outcomes. These sessions tend to be lively, dynamic, and high-energy exercises in problem solving and clinical decision making with input from the entire team.

Outcomes in the Context of Holistic Care

Providing care for frail residents in long-term care settings is extraordinarily complex. By the time an individual reaches his or her eighth decade, alterations in physiologic functioning, mentation, affect, and social relationships create challenges for even the most astute clinician. Treating a single symptom without considering the effects on the whole person simply does not work.

Considering the whole person is a 2-fold process. First, there are the clinical signs and symptoms of well-being that staff members monitor when medication changes occur. Routinely, time is given in team meetings to review any changes in a resident's sleep patterns, food intake, activity level, mobility, behavior, and affect that might be related to the medication regimen. Input from the nursing staff on all 3 shifts is essential for this discussion. Second, knowledge of the resident's lifelong behaviors and preferences—determined from input of family members and significant others—provides an understanding of traits, behaviors, and preferences that could affect a resident's responses to medications. Consultations with family members by members of the nursing and social work staff are a regular part of preparing for a team meeting. When changes in medications need to be made, the principle "start low, go slow" is routinely followed. Consequently, it may take 2 or more team meetings before a satisfactory outcome in the resident's condition is achieved.

Turf Issues and Effective Interdisciplinary Teams

As others have noted, medication utilization reviews work best when integrated into the activities of a facility's interdisciplinary team.⁶ Interdisciplinary teams, by definition, are expected to have highly visible lines of communication among team members to facilitate team assignments, share information, and evaluate the team's progress toward achieving patient care goals. One of the most striking characteristics of these teams is the purposeful blurring of disciplinary boundaries so that the team members can focus on total resident care rather than separating the resident's needs into disciplinary compartments.¹⁰⁻¹¹

Barriers to Interdisciplinary Teaming in Long-Term Care

In our collective experiences, there are 3 major problems listed (Table 1) that staff members in long-term care facilities can face when they attempt to implement successful interdisciplinary teams: overcoming familiar and static routines, dealing with scheduling difficulties and time constraints, and the lack of good team models or prior interdisciplinary experiences.

Overcoming Routines

Regulatory oversight in long-term care settings is often noted to create a burdensome system of reports for the documentation of patient care.³ If the primary foci of the team's efforts are on charting procedures and getting the paperwork done, team cohesion and the importance of improving patient care can be affected. Staff members have to believe that the results of working as a team are worth the effort it takes to change from solitary or discipline-specific care planning to interdisciplinary teamwork.

Time Constraints

Historically, teams often have little time to schedule meetings when the entire team can meet to discuss residents' needs and progress toward therapeutic goals. Consequently, many nurses may have experienced fragmented discussions, incomplete information about the resident, and unsatisfying action plans. Unless a strong organizational commitment to interdisciplinary teaming exists and an effective team

Table 1.
Barriers to Effective Interdisciplinary Teaming in Long-Term Care

I. Familiar or static routines resistant to change

- Regulatory mandates
- Preference for discipline-specific practice
- Blurred focus on improving resident care

II. Time constraints

- Scheduling difficulties for the team members
- Lack of organizational commitment to team meetings
- Low expectations for attending meetings
- Lack of good team models or prior interdisciplinary experiences
- Few interdisciplinary opportunities during formal educational experiences
- Low trust and/or respect among potential team members
- Prior negative experiences with disciplinary turf battles

III. Lack of an effective organizational leader to create an interdisciplinary team

leader emerges to keep the work on track, most efforts at interdisciplinary teaming will not succeed.^{12,13} Given the holistic care mission of the CCRC, the opening message of our team meetings is always the same: 1) the work before the members requires a group effort and 2) the best solutions will come from the team's collective wisdom. Therefore, everyone is expected to attend the meeting and to participate in the work of the team.

The group convenes at the same time (7:30 a.m.) on the same Wednesday of each month.



The CCRC interdisciplinary team at work.

Coffee and a light breakfast are served for those in attendance. The relaxed meeting atmosphere and spirit of collegiality give members the freedom to move around during the meeting without disturbing others or disrupting the discussion. All members view interdisciplinary meetings as stimulating and satisfying opportunities to engage in high-quality care planning activities.

Good Interdisciplinary Models

Most health care professionals have never had experience with or instruction about how to work in an interdisciplinary environment.^{12,14,15} There are pitfalls in the process. For example, the spirit of interdisciplinary work can easily break down into professional turf wars and resentment when others make suggestions about elements of practice that historically belong to a given discipline.

In the case of medication utilization review, consulting pharmacists and physicians often find themselves trying to negotiate the meaning of interdisciplinary work and collaboration.⁶ Similarly, nurses may feel out of the input and decision-making loop that exists between the pharmacist and the physician. In our experience, fully integrating the consulting pharmacist into the team provides this team member with knowledge of the residents, opportunities to interact with the nursing staff on a personal basis, and a synergistic working relationship with the medical director and the nursing staff during team meetings. It is common in meetings for the nurses, the dietician, or the medical director to ask the consulting pharmacist for his opinion.

Ideally, health and human service professionals will increasingly be exposed to interdisciplinary models of care while they are in training.¹² For those professionals already in practice, modeling the collaborative practices of others will have to suffice. In our work, the development of the team was not driven by preexisting experiences with interdisciplinary teaming models or preconceptions about how the model should work. Rather, the spirit of teamwork was first embraced by the medical director and the director of health services. The trust and enthusiasm that other team members observed in the relationship between these 2 organizational leaders gave them confidence to participate in team meetings.

Because the facility's medical director chairs the committee, he has to be sensitive to traditional power hierarchies in health care settings and ensure that everyone on the team has a chance to participate in discussions. Paying close attention to body language and inviting individual team members to comment, who may otherwise be hesitant to participate, are important functions for a physician who chairs an interdisciplinary team meeting. By design, the director of health services for the organization, who is a nurse, takes a leadership role only when an administrative decision needs to be made. This approach avoids the model in which an agency administrator and the medical director have discussions and make decisions that are void of team input. When team members understand that their expertise counts in care planning decisions and that they are expected

to participate in care planning decisions, an enthusiastic and cohesive team will develop.

Conclusion

Many nursing facilities complete medication utilization reviews because they are required to do so. What may be lacking is a more dynamic and comprehensive review process for total resident care. Organizations that desire a more effective process would do well to follow 5 simple suggestions.

- First, choose an effective team leader or coleaders to maximize team involvement in resident care discussions.
- Second, place medication utilization review in the large context of exemplary resident care.
- Third, expect all staff members to prepare for team meetings and to participate fully in the discussions.
- Fourth, help team members learn to trust and respect each other and to see team meetings as opportunities for ongoing education and professional development. Our team has had the advantage of a stable membership for a number of years. However, each time a new member is added, an assimilation process must occur to maintain team trust and respect.
- Finally, do not allow a mandated activity to become so rote that the value and intent of the activity are lost in the process.

Currently, many facilities are looking for ways to improve medication management and to reduce error and adverse events.¹⁶ As we described in this article, at least some of this change will come from the commitment of the interdisciplinary team members to go beyond minimum performance standards and to rediscover the excitement that comes from knowing that they are creating “best practices” within their own organization. Moreover, teams that work in high collaborative cultures are widely known to produce superior clinical outcomes of care.¹⁷

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PHARMACOLOGY UPDATE: DEMENTIA

Ann Schmidt Luggen, PhD, GNP

The Food and Drug Administration (FDA) has approved 5 prescription drugs for the treatment of Alzheimer's disease (AD). Four of these are cholinesterase inhibitors and are usually used for the treatment of mild to moderate AD. The fifth drug (memantine) is an NMDA (N-methyl D-aspartate) antagonist and is usually used to treat

moderate to severe AD. No study has been published that directly compares these drugs to one another; however, the National Institute on Aging (NIA) has published a summary that provides information in a table format for easy review of information about all 5 of these drugs. This information is provided in the following table, although 1 drug has been omitted (tacrine or Cognex[®]) because it is no longer marketed by the manufacturer.

| Drug/Action | Type and Treatment | Recommended Dose | Interactions |
|---|--|--|---|
| Aricept [®] (donepezil) Prevents breakdown of acetylcholine in the brain | A cholinesterase inhibitor used to treat mild to moderate AD | 5 mg qd; increase to 10 mg qd after 4-6 weeks if well tolerated | None observed in lab studies; NSAIDs should be used with caution with donepezil* |
| Exelon [®] (rivastigmine) Prevents breakdown of acetylcholine and butyrylcholine in the brain [†] | A cholinesterase inhibitor used to treat mild to moderate AD | 1.5 mg bid; total of 3 mg/day; increase by 3 mg/day every 2 weeks to 6 mg bid (12 mg/day) if well tolerated | None observed in lab studies; NSAIDs should be used with caution rivastigmine |
| Reminyl [®] (galantamine) Prevents breakdown of acetylcholine and stimulates nicotinic receptors to release more acetylcholine in the brain | A cholinesterase inhibitor used to treat mild to moderate AD | 4 mg bid (8 mg/day); increase by 8 mg/day in 4 weeks to 8 mg bid (16 mg qd) if well tolerated; increase to 12 mg bid (24 mg/day) if well tolerated | NSAIDs should be used with caution with galantamine; drugs with anticholinergic properties, especially antidepressants such as paroxetine, fluoxetine, fluoxetine, and amitriptyline cause retention of galantamine, which may cause problems |
| Namenda [®] (memantine) Blocks toxic effects associated with excess glutamate and regulates glutamate activation | NMDA antagonist used to treat moderate to severe AD | 5 mg qd; increase to 5 mg bid (10 mg/day) after 1 week if well tolerated; continue to increase weekly up to 20 mg/day in divided doses (bid) if well tolerated | Other NMDA antagonists such as amantadine, dextromethorphan, and ketamine have not been fully investigated with memantine and should be used with caution with this drug |

Definitions of acronyms: AD, Alzheimer's disease; bid, twice daily; NMDA, N-methyl D-aspartate; NSAIDs, nonsteroidal anti-inflammatory drugs; qd, daily.

*Increased risk of stomach ulcers when used with cholinesterase inhibitors. Prolonged use of NSAIDs (non-steroidal anti-inflammatory drugs) such as aspirin or ibuprofen can cause ulcers even when used alone.

[†]Butyrylcholine is a chemical in the brain that is similar to acetylcholine.

The information contained in the table is a brief summary and should not be assumed to be complete but should provide minimal guidance to practitioners. The drugs listed are used to delay or prevent increasing symptomatology in those with AD. They help for a limited time and may control some of the behavioral symptoms of AD. Researchers do not completely understand how cholinesterase inhibitors work to treat AD, although it is known that they prevent breakdown of acetylcholine, which is important for memory and cognitive function. In advancing AD, less acetylcholine is produced, thus the limited use of these drugs. NMDA antagonists are used to delay progression of symptoms (for example, loss of self-toileting) of moderate to severe AD. This drug regulates glutamate which causes cell death in excessive amounts. The two kinds of drugs can be used together at the moderate stage of AD because they work differently.

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**GERONTOLOGIC NURSE PRACTITIONER
CARE GUIDELINES:
DEMENTIA BEHAVIORS:
RECOGNITION AND MANAGEMENT**
Ann Schmidt Luggen, PhD, GNP

CAUSES OF DEMENTIA

There are many causes of dementia.¹ The best known, Alzheimer's disease (AD), is also the most common, accounting for at least 50% to 60% of dementias. Dementia with Lewy bodies (DLB) is the second most common cause of dementia, probably making up 20% to 30% of cases. Vascular dementia is thought to be the third most common cause of dementia, accounting for 10% to 20% of cases. An elder may have more than one type of dementia at the same time, however, and because subcortical vascular dementia (SVD) is caused by chronic problems that are common in elders—hypertension and diabetes—it is likely to occur in combination with other forms. The least common of the dementias are the frontal temporal lobe dementias (FTDs). Pick's disease is the most common of these rarer types. Others include FTDP-17, progressive supranuclear palsy, corticobasilar degeneration, parkinsonism linked to chromosome 17, and neurofibrillary tangle dementia.² The classification of FTDs is ongoing. Another dementia, of less concern today, is dementia caused by syphilis, a disease that is on the rise again in the United States.³ Other dementias are caused by vitamin B-12 deficiency, hypothyroidism, and alcoholism to name a few of approximately 60 causes of dementia.¹ Some of these problems are reversible.

RECOGNITION OF DEMENTIAS

Most readers will know that AD and vascular dementias can be differentiated by their presentation. AD is slow and insidious; vascular dementia has a “stepping stone” advancement caused by the progression of multiple small strokes. [Table 1](#) compares the most common dementias on several variables.

BEHAVIORS COMMON TO DEMENTIAS

One important thing to remember is that like beauty, behaviors are in the eye of the beholder. What may not be disturbing to the person with dementia may be very disturbing to family members or the caretakers in a long-term care setting. Certain behaviors may be disturbing to

Table 1.
Differentiating Dementias¹⁻³

| Type | Age at Onset/Sex | Prognosis | Symptomatology |
|---------------------------|--|---|---|
| Alzheimer's Disease | 65+, greatest in 80+, most common in women | 8-10 years median, range 3-20 | Gradual memory loss, change in personality, loss of language skills, disorientation, impaired judgment |
| Dementia with Lewy bodies | 60-80, most common in men | 6+ years | Rigidity, visual hallucinations, slowed movements, fluctuation in cognition |
| Vascular | 70s, most common in men | Depends on control of causative factors: hypertension, diabetes, lipids | Amnesia, aphasia, apraxia, depression, socially inappropriate behaviors, loss of visual field, seizures, paralysis |
| Other (Pick's) | < 65 | 5-7 years (Pick's) | Disinhibition, poor insight, apathy, verbal aggression, hygiene neglect, perseveration,* (Pick's) Neurosyphilis, memory loss, hallucinations, loss of language skills |

*Perseveration = repetitive thoughts.

the patient, however, yet not always discernible to others. Pain can be a common precipitant of disturbing behaviors and is difficult for the patient and staff if not managed.

The most disturbing behaviors in the home are suicide threats, agitation, insomnia, restlessness with wandering, and incontinence behaviors. In the nursing home, agitation, screaming, and combativeness are disturbing behaviors because they upset other residents as well as the staff. Inappropriate sexual behaviors can be distressing to other residents and visitors as well.

CAUSES OF BEHAVIORS

Gerontological nurse practitioners know well that the most common causes of behavior changes are urinary tract infections (UTI) and respiratory infections. A high index of suspicion is essential in any setting if there is an abrupt change in behavior. Infection may precipitate a fall, cause pain, or cause metabolic changes if eating and drinking are slowed; hypoxia may occur with pneumonia and increase confusion. A new drug may cause a change in behavior, especially if it is an anticholinergic drug such as Benadryl®.

Some changes in behaviors with dementia are

actually delirium. Hypoglycemia, encephalitis, medications, hypoxia, and intracranial bleed may be manageable. It is important to work up the UTI or respiratory infection immediately to begin the search for other problems in the event that these are not the source of behavior change.

Depression can also be confused with dementia. Like dementia, the onset is usually slow and insidious. It commonly occurs in those with dementia, especially dementia with Lewy bodies. It is common to miss this diagnosis. In an elder with dementia, the loss of a roommate or lack of family attention in the nursing facility can precipitate or aggravate an already present depression.

MANAGEMENT OF BEHAVIORS

Environmental manipulation is an excellent start for management of disturbing behaviors. Strict routines in the daily schedule are relaxing to the anxious or restless elder. Toileting every 2 hours is helpful for the elder who is beginning to become incontinent. Nightlights are often mentioned as helpful tools. I find that even in early dementia or for those in a new environment, nightlights are confusing, changing the environment so that it is unrecognizable. Usual

lighting, at least in the hallway, is more useful for those who have insomnia, or in those for whom day becomes night and night becomes day, which commonly occurs in DLB.

Separating residents in the nursing home can be helpful if some are particularly disruptive (e.g., residents who scream, rummage through other residents' rooms and drawers, climb into others' beds, etc.). These behaviors are disturbing and cause stress to many residents with dementia. Methods to decrease environmental stress are helpful.

Maintaining a safe environment is difficult in the home and is one reason many elders are moved to the nursing home. In this instance, the nursing facility can generally provide a safe environment. A rule is that the best quality of life for an elder is the least restrictive environment, and this can be provided in a nursing facility.⁴

Conducting an environmental assessment of stressful stimuli is a good practice in any setting. Auditory, visual, tactile, and multiple competing stimuli are unmanageable for elders with dementia.¹ TVs that are on all day can precipitate hallucinations in those vulnerable to this problem, for example, the elder with DLB. The elder cannot distinguish reality from TV drama. Conversations should not be complex because they will not be understood. Open-ended questions (e.g., "Why?") are useless. "What would you like to wear today?" will go unanswered. A better choice is, "Would you like to wear a blue shirt? Here, this is a blue shirt." Too often medical management is seen as the answer for nursing facility staff and managers.

MEDICAL MANAGEMENT OF BEHAVIORS

A number of helpful drugs are available now that are effective in slowing the progression of dementia and reversing behaviors disturbing to the elder. Cholinesterase inhibitors approved by the Food and Drug Administration (FDA), including Aricept®, Exelon®, and Reminyl®, are

used extensively today. Cognex or tacrine is no longer on the market but was the first drug on the market for treatment of AD.

A number of drugs can be useful to treat psychosis and agitation that can be problematic in moderate to severe dementia. Risperidone is an atypical antipsychotic that has been studied extensively. The atypical antipsychotics have fewer extrapyramidal effects compared with the older antipsychotics of 10 to 20 years ago. Other medications for this purpose include olanzapine, quietapine, and aripiprazole, and others. These drugs have not been found to be superior to other agents in treating elders with dementia; however, they are safer, more easily tolerated, and have fewer side effects.⁵ Clozapine is another drug in this class, but it has major side effects and is not recommended for patients with dementia.

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Development of Nurse Competencies to Improve Dementia Care

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The rapid increase in the number of elders who need dementia care and the critical need for skilled care providers prompted Florida legislators to enact legislation to improve the care of these residents. One component of the new legislation mandated dementia training for long-term care staff and led to the development of dementia care competencies that would guide a competency-based curriculum to meet the demand for training. The competencies, methods used for development, and information regarding how to access these newly developed resources are described in this article. (*Geriatr Nurs* 2005;26:98-105)

Demographics related to the care of residents in long-term care (LTC) are providing the impetus to improve care in nursing homes for residents with dementia. At least 60% of all nursing home residents have some form of dementia,¹ and that number will continue to grow.² Consistent with this trend, the state of Florida legislature enacted major reforms in 2001 through Senate Bill 1202. The legislation established new nurse staffing levels, dementia training for staff, and tort reform.³ Specifically, the legislature mandated that all nursing home staff members who have direct contact with residents receive 1 hour of required dementia care education and further, that clinical staff with direct patient contact receive 3 additional hours of dementia training (SB 1202, page 62, section 26).

The state of Florida allocated responsibility for the implementation of this new law to 2 state agencies—the Department of Elder Affairs (DOEA) to “prescribe training standards” by establishing a program to approve curriculum and certification of Alzheimer’s trainers and the Agency for Health Care Administration (AHCA) to monitor if nursing home staff received the required dementia training as proscribed by law. New rules, based on the language of SB1202, were promulgated by the DOEA, including a set of recommendations called “Training Guidelines

for the Special Care of Nursing Home Residents with Alzheimer’s Disease or Related Disorders (ADRD).” These rules required 1 hour of content to include an understanding of ADRD, characteristics of ADRD, and communicating with residents with ADRD, as well as 3 additional hours of content for direct-care staff to include information on behavior management, assistance with activities of daily living, activities for residents, stress management for the caregiver, family issues, resident environment, and ethical issues (Florida Administrative Code 58A-4.001. F.A.C.).

The state of Florida had a unique resource to help develop new materials to meet the training requirements. In 2000, recognizing the increasing number of elders in Florida and the need to educate health care providers about how to care for them, the state funded the Teaching Nursing Home (TNH) to “formulate, implement, advocate, and disseminate best practices.” Florida House Bill 1971 charged AHCA with the establishment of a Teaching Nursing Home Pilot Project “to improve and expand capacity of Florida’s healthcare system to respond to the medical, psychological, and social needs of the increasing population of frail older citizens. In 2001, as the TNH was establishing its structure and products, the Advisory Committee chose to develop a model curriculum to meet the new dementia training requirements. The TNH Steering Committee convened a statewide Advisory Committee of Dementia Care Experts,² who were given the charge for curriculum development. The Advisory Committee of Dementia Care Experts included representatives from AHCA, DOEA, the Alzheimer’s Association, Florida Association of Homes for the Aging (FAHA), Florida Health Care Association (FHCA), and the Department of Veteran’s Affairs (DVA), as well as from Florida’s leading universities and professional organizations. The committee’s responsibility was to create a model for development, dissemination, evaluation, and validation of the dementia training materials.

Two realities shaped the decision to focus the educational development efforts toward LPNs. In 2002 and 2003, LPNs averaged 0.9 hours of care per resident day in comparison to 0.6 hours of care from RN staff in Florida long-term care facilities.⁴ LPNs are the largest group of licensed caregivers, and they provide the majority of licensed nursing care to long-term care residents. Furthermore, at the same time the Advisory Committee was deciding about the audience for the curriculum, the Florida Board of Nursing approved a rule change to expand LPNs' role to include direct supervision of long-term care paraprofessional staff if the LPN took an additional 30 hours of supervisory training. Thus, LPNs' role of caring for residents with dementia evolved to include supervision and mentoring of the most numerous nursing home workers, certified nursing assistants (CNAs), who were responsible for the day-to-day care of dementia residents. The Advisory Committee also realized that the LPN focus would be optimal for future repeated efforts; professional materials could be edited for the RN audience and simplified for CNAs.

Recognizing that a competency-based curriculum is more likely to improve care outcomes,⁵ the TNH Advisory Committee, composed of nursing educators and experts in dementia care, met to develop dementia education competencies. This initial process of competency development was considered crucial; it drove the content development and is the focus of this article.

Development of Competencies

Ballantyne and colleagues⁶ stressed the need for the development of competency criteria that could ensure effective care provided by nurses working with the older adults. Zhang⁷ defined nursing competencies as "sets of knowledge, skills, traits, motives and attitudes that are required for effective performance in a wide range of nursing activities" (p. 469). To begin the process of developing competencies, a literature search was conducted. Results indicated that although significant progress has been made toward the development of "best practices" for care of the older adult, little published material was available directed specifically toward LPN practice in LTC and the person with dementia.⁸

Competency-based education focuses on performance of measurable outcomes; the value of this approach is that one can measure outcomes by assessing differences in quality of care per-

formed by the care provider. In an attempt to implement the state mandate and improve care delivery in LTC, the task force focused on the development of competencies that would provide desired outcomes for the curriculum. A review of LPN curricula, National League for Nursing (NLN) publications, and Florida scope of practice for LPNs was completed, providing necessary direction to identify the appropriate level of knowledge, skills, and attitudes.

The task force identified a comprehensive level of dementia knowledge necessary to provide high-quality care. Members further delineated which of these content areas were basic to dementia care delivery and necessary to include in the initial hour of training and which would be included in the additional 3 hours of training mandated for direct care staff. Advanced competencies, such as identification and treatment of pain in dementia and end-of-life care, were identified but could not be included in the initial state-mandated training because of time constraints. It was decided that content with this focus could be developed at a later date, building on the basic knowledge mandated in the 4 training hours.

Another dilemma was how to integrate the state-mandated areas with the outcome competencies defined by the group and considered crucial to quality care. For example, the group had identified competencies related to the importance of the LTC environment well beyond the training guidelines promulgated by DOEA. The group recognized the importance of quality of life for persons with dementia as well as ethical content and chose to include these additional competencies. Negotiations involved a year-long process of competency development, presentation and feedback from an advisory committee, and development and continued refinement of content modules.

Taylor⁹ identified 4 broad areas of nursing competencies—interpersonal, intellectual, technical, and moral—and stated that nurses often emphasized technical and intellectual competencies to the exclusion of interpersonal and moral competencies. The task force group concurred that it was important to include moral and interpersonal competencies, especially considering the care required for the vulnerable population experiencing dementia in nursing homes. The task force evaluated the competencies needed for dementia-specific care in long-term care, with a broad focus of including the

Table 1.
Domains for Nursing Competencies

| | |
|---------------|---|
| Interpersonal | Establishing and maintaining caring relationships |
| Intellectual | Reasoning to achieve valued goals |
| Technical | Manipulating equipment skillfully |
| Moral | Living is consistent with one's personal moral code and role responsibilities |

Table 2.
Nursing and Dementia Competencies

| Dementia-Specific Competencies: Phase 1 Training | | Nursing Competencies |
|--|---|-----------------------------|
| Competency 1.1 | Understands the characteristics of dementia and the special needs of the person with dementia | Intellectual, interpersonal |
| Competency 1.2 | Adapts communication to cognitive/emotional needs of the person with dementia | Interpersonal |
| Competency 2.1 | Demonstrates a working knowledge of dementia | Intellectual |
| Competency 2.2 | Recognizes, prevents, and manages distress behaviors including agitation, pacing, exit-seeking, combativeness, withdrawal, and repetitive vocalizations | Interpersonal, moral |
| Competency 2.3 | Understands special needs of family and friends of persons with dementia | Interpersonal, intellectual |
| Competency 2.4 | Promotes independence in activities of daily living | Intellectual, interpersonal |
| Competency 2.5 | Promotes an optimal environment that will support resident autonomy and enhance capabilities | Intellectual, interpersonal |
| Competency 2.6 | Recognizes ethical issues that arise in dementia care and incorporates these into care approaches | Moral, intellectual |

Note: These categories (excluding the technical category) provided a framework from which to organize the competencies that were developed (see [Table 1](#)).

intellectual skills required in the state mandate and the additional moral and interpersonal skills the group considered important to quality of care. For example, one of the state-mandated content areas was “managing problem behaviors.” Members of the task force decided to shift the focus to person-centered

care that involved responding to the needs of the resident rather than focusing on the problem for the staff. This philosophy is consistent with the national Alzheimer’s Association approach to care.¹⁰ Taylor⁹ defined the competencies as abilities in a variety of domains (see [Table 1](#)).

Table 3. **Competencies**

Phase 1. 1 Hour of Training

Competency 1: Understands the characteristics of a dementing illness and the special needs of the person with dementia

Knowledge, skills, attitudes:

- Defines dementia as decreasing brain function including memory problems, loss of some thinking and communication skills, and changes in personality
- Contrasts dementia with cognitive changes of normal aging and delirium
- Describes the early, middle, and late phases of dementia
- Recognizes and incorporates into the dementia care plan that quality of life is a realistic goal
- Interprets individual responses, mood, and other feedback as meaningful
- Seeks to create a homelike and comfortable environment
- Seeks a wide range of resources, such as community volunteers in daily care, whenever possible
- Uses individual's preferences and social history in daily practice

Competency 2: Adapts communication to cognitive/emotional needs of the person with dementia

Knowledge, skills, attitudes:

- Explains changes in communication skills that occur during progression of dementia
- Describes the relationship between communication and distress behaviors
- Demonstrates strategies for effective verbal and nonverbal communication
- Uses touch to gain person's attention
- Uses simple sentences
- Presents 1 idea at a time
- Asks 1 question at a time
- Avoids negatively worded statements
- Breaks down tasks
- Gives simple choices
- Identifies nonverbal expressions of physical discomfort and pain
- Demonstrates communication skills and strategies for managing disruptive, aggressive, or other problem behavior
- Listens and responds to emotional message
- Uses verbal redirection
- Uses written and visual cues
- Allows time to respond
- Avoids asking "why," arguing, correcting misinformation, confrontation
- Avoids raising voice
- Avoids sarcasm with person with dementia
- Demonstrates desired action
- Reacts appropriately to negative communication by individual with dementia
- Avoids responding to negative language by individual with dementia
- Uses redirection
- Reinforces (own) positive (caregiver) self-image using techniques such as positive self-talk
- Discusses cultural differences in individuals with dementia and how to appropriately adapt communication strategies
- Includes emotion-focused communication strategies in interactions with individuals
- Gives recognition
- Expresses positive regard
- Uses verbal encouragers
- Explores incomplete expressions of ideas

Table 3. **Competencies (continued)**

- Adopts an attitude of respect for individuality and dignity of the person with dementia
- Uses individual's name in communication
- Approaches individual in a calm, unhurried manner
- Avoids confrontation and arguments in communication

Phase 2: 2–4 Hours of Training

Competency 1: Demonstrates a working knowledge of dementia

Knowledge, skills, attitudes:

- Lists several diseases or conditions that may cause dementia
- Identifies polypharmacy, depression, and other conditions that may result in symptoms of dementia
- Describes how the disease progresses, as well as its symptoms, behaviors, and challenges associated with each stage.
- Discusses current research findings, including the research on cause, prevention, cure, and the recommended diagnostic process

Competency 2: Recognizes, prevents, and manages distress behaviors including agitation, pacing, exit-seeking, combativeness, withdrawal, and repetitive vocalizations

Knowledge, skills, attitudes:

- Recognizes antecedents and consequences for distress behaviors
- Monitors, documents, and reports to team the time, place, and circumstances accompanying distress behaviors
- Looks for patterns that reveal potential causes (correlates vs. triggers) of distress
- Monitors, documents, and reports to team staff responses to residents' distress behaviors and residents' responses to consequences
- In collaboration with interdisciplinary team and family, plans prevention or modification strategies and addresses residents' needs
- Under the direction of a registered nurse, teaches and supervises nursing assistants regarding their responses to dementia-related behaviors
- Assists in the design and implementation of care plan
- Cooperates in modification of care plan
- Teaches and supervises nursing assistants in reporting behaviors
- Under the direction of a registered nurse, teaches and implements recommended staff stress-relieving strategies such as social support
- Promotes quality of life and mental health consistent with resident's individual history and preferences through:
 - pet therapy
 - music therapy
 - structured activities
 - family photos and/or tape recordings
 - physical exercise
- Describes the risks associated with wandering, pacing, and exit-seeking
- Identifies and addresses mental health issues appropriately
- Identifies and reports symptoms of psychological distress, acute confusion, or depression
- Describes the effects of pain, illness, limited mobility, and sensory loss on behavior
- Discusses the use, effects, side effects, and undesirable effects of medications used in memory loss
- Discusses the use, effects, side effects, and undesirable effects of medications used to manage symptoms of dementia
- Understands the use and misuse of restraints

Table 3. **Competencies (continued)**

Competency 3: Understands special needs of family and friends of persons with dementia

Knowledge, skills, attitudes:

- Discusses the psychological needs and stress of family members including
 - stages of grief, anger, concern, and guilt
 - cultural differences in expressions of grief, anger, concern, guilt
 - how to respond to family expression of these needs and stresses
- Identifies and reports family member needs, problems, and concerns to the team
- Plans with team strategies to address family issues and includes family input
- Supervises nursing assistants regarding their responses to families' concerns
- Includes family members in planning care and devising strategies as a means to provide quality care
- Incorporates resident's philosophy and values in an individualized care plan

Competency 4: Promote independence in activities of daily living

Knowledge, skills, attitudes:

- Incorporates an approach to remaining capabilities and capitalizes on individual's potential for rehabilitation
- Breaks tasks down to manageable components
- Promotes independence in activities of daily living
- Looks for appropriate process as outcome in chosen activities rather than successful product
- Encourages direct care staff in "doing with" rather than "doing for" approach to activities of daily living
- Allows for personal choices and preferences using past history and other family information

Competency 5: Promotes an optimal environment

Knowledge, skills, attitudes:

- Maintains safety and security of residents
- Monitors environmental stimuli
- Provides information as to date, day, season, and weather
- Ensures needed auditory and visual aids and mobility and memory aids
- Increases lighting to prevent shadows
- Identifies and responds to individual's feelings and fosters their expression
- Reduces isolation through group activities, through family, friend, and community visits, and intergenerational experiences
- In collaboration with other departments and consultants, promotes physical, social, and mental health
- Avoids overhead paging
- Promotes social interaction among individuals with dementia as well as staff members
- Uses simple designs and colors
- Avoids mirrors in hallways or common rooms
- Provides sheltered freedom
- Initiates appropriate conversation to maintain abilities
- Provides opportunity for productivity
- Decreases background noise (e.g., TV, radio)
- While maintaining resident confidentiality, posts signs as reminders; puts labels on family photos, uses other written cues
- Promotes constancy and predictability through a consistent and individualized routine, familiar caregivers, and appropriate activities

Table 3. **Competencies (continued)**

Competency 6: Recognizes ethical issues that arise in dementia care and incorporates these into care approaches

Knowledge, skills, and attitudes:

- Articulates an awareness of issues such as privacy, honesty, and autonomy in the daily care of persons with dementia
- Identifies common ethical conflicts that may arise when caring for residents with dementia
- Discusses ethical decision-making process using problem-based learning
- Recognizes variability in family and cultures in making ethical decisions
- Identifies the resources available for resolving ethical dilemmas

Advanced Competencies

- To prevent excess disability, incorporates an approach to support remaining capabilities and capitalizes on potential for rehabilitation
- Identifies physical discomfort, pain, fatigue, dehydration, hunger
- Identifies verbal and nonverbal pain and discomfort, reports changes in cognitive function, anticipates individual's needs to prevent pain, fatigue, dehydration, and hunger and assists with plan to address same
- Understands the end-of-life issues facing residents, staff, families, and guardians related to dementing illness
- Explains the complex and terminal nature of providing care for persons with advanced, progressive dementia
- Incorporates palliative care principles into planning, supervision, and delivery of care
- Discusses the concept and implementation of an Advance Directive

Dementia-specific competencies were prioritized for each phase of state-mandated training. Phase 1 (1 hour of training) included an overview of dementia and communication issues. Phase 2 included more detailed content on dementia and its treatment, related behavioral changes, the role of the family, and ethical issues. Time constraints of the state-mandated training necessitated creating advanced competencies for other content that the task force considered important but could not be included in either phase 1 or phase 2 (see [Table 2](#)).

The task force constructed a draft of the LPN competencies, as well as a diagram depicting the progression from core to advanced competencies within a novice-to-expert framework. The draft was distributed to the Advisory Committee members for review and in a face-to-face meeting; each competency was discussed along with questions and comments from LPNs at the TNH who reviewed earlier drafts. Suggestions from the wider group were incorporated, and consensus was reached. The revised document was distributed by e-mail for comments and revisions.

At the end of 2001, the final version was ready to be used for the development of the curriculum.

Although core competencies will change as knowledge and skills in dementia care advance, the list in [Table 3](#) represents the current consensus of the TNH Steering Committee. The proposed phases of training for LPN competencies is organized to reflect training that might occur in 1- and 3-hour sessions in compliance with the dementia training mandate of SB1202.

With the projected increases in the number of elders with dementia in nursing homes and the rapidly growing dementia population in the LTC system in Florida, it was imperative to ensure that Florida's nursing home care providers were prepared to care for these residents. The Florida legislature signed into law SB 1202 in 2001 to begin the process of improving dementia care.³ Legislation passed in 2002 requires the same 4-hour mandatory dementia training for hospice and adult day care personnel and recognizes the pressing need to train all staff who work with community living elders to be competent in dementia care.

The competencies for dementia care and the curriculum based on those competencies are currently available through the TNH online educational site GeriU (www.GeriU.org). GeriU is the first online geriatric university dedicated specifically to the provision of accurate and timely information on the care of older patients for health care providers. Although these educational resources were developed with State of Florida funding for Florida nurses, by accessing this Web site, any health care provider can use the dementia education learning modules without cost. The learning modules are available from the "Public Content" link at the GeriU Web site. From there, the learner will be directed to a link to Florida's Teaching Nursing Home Program. The instructional activities titled "Nursing Home Alzheimer's Disease and Related Disorders Training for LPNs" include learning modules divided into 2 sections representing basic and more advanced training. The basic modules ("Understanding Dementia" and "Communication") provide an overview of dementia, quality of life, person-centered care, types of communication, and accommodations to improve communication with cognitively impaired residents. There are 5 modules that make up the second phase of the program ("Distress Behavior," "Loved Ones," "Activities of Daily Living," "Environment," and "Ethics"). Each module begins with a set of objectives, followed by learning activities, practice exercises, and resources for further information. Modules are presented as computer-based interactive learning that can be completed independently.

A complete description of the training materials and the curriculum is beyond the scope of this article; it will be the subject of a forthcoming paper.¹¹ The results of a preliminary evaluation of the program are reported elsewhere.¹² With its high concentration of older residents, Florida is positioned to develop models of care and education for long-term care providers. This article has described the process we used to develop not only the most comprehensive competencies to guide staff training but also the need to establish buy-in from all of the constituents who provide and would benefit from this training.

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Falls Associated With Dementia: How Can You Tell?

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In any practice setting, professional nurses must be skilled to assess and manage medical problems rapidly. Post-fall assessment among those with dementia is a daunting task. Emergent medical problems after a fall are difficult to detect among those with dementia, because impaired communication portrays a false reality that the older adult is uninjured. Furthermore, early detection of potential post-fall injuries may not occur within a health care system that relies on verbal communication and eyewitness accounts as the main source of fall occurrence information. Professional nurses must turn to other means of fall detection. One such strategy relies on observable changes in function and behavior, such as a recent decline in mobility, change in gait, level of consciousness, neurological function or vital signs. Those most susceptible exhibit prior observable signs of visual-spatial impairment such as impaired clock drawing, gait apraxia, and inability to negotiate their environment without falling. (*Geriatr Nurs* 2005;26:106-10)

Perhaps the most difficult assessment of any condition comes when an older adult client cannot vividly recall an event, or circumstances surrounding that event, for which an evaluation is requested or sought. When the event in question is a fall, the difficulties are no less complex. If a fall happens to occur within the confines of a long-term care facility, clinicians search for validation that the fall occurred by questioning staff members and families. If no eyewitness accounts are available and others deny the occurrence, clinicians may still wonder, did the fall actually happen? Although there is no “absolute,” evidence-based technique to answer this question, there are a handful of valuable clinical findings that indicate a recent fall occurrence among older adults with dementia. Early detection of any fall is crucial to treat underlying predisposing fac-

tors such as orthostatic hypotension or infection and to assess for injury. When a fall is suspected in a person with dementia (and impaired communication), time is of the essence because it may be unclear when the fall actually occurred.

Post-fall assessment of an individual with dementia differs from the standard post-fall assessment of an older adult without dementia. The difference lies in recognizing some of the latent or subclinical findings such as behavioral or functional changes indicative of injury. Following a stepwise approach that considers all of the past static characteristics (Table 1) of the older adult coupled with evaluation of current or dynamic characteristics (Table 2) are integral components of the post-fall assessment. Many of the past static characteristics are well known to the clinician from the medical record and review of fall risk assessment tools. None, however, are more important than current or dynamic events revealed on an immediately performed comprehensive post-fall assessment. Because falling may be unobserved, and the resident may be unaware that it took place, assessment must be thorough and interventions should always consider patient safety first. Consider this scenario of an ambulatory older adult with advanced dementia who resided in a long-term care unit.

Mrs. S, aged 82 years, was admitted to a long-term care facility because of continued wandering and getting lost at home. She was diagnosed with moderate stage Alzheimer's disease and demonstrated a need for complete assistance in activities of daily living. She was aphasic with both expressive and receptive inabilities to communicate, but would roam the long-term care unit for hours on end. After dressing in the morning, she would ambulate back and forth on the unit, stopping to stare at the room numbers. When approached by name, she continued to walk uninterrupted. Mrs. S had

Table 1.
Important Static
Characteristics of the Older
Adult With a Presumed Fall

| |
|------------------------------------|
| History |
| Dementia* |
| Parkinson's disease* |
| Subdural hematoma |
| Head trauma/traumatic brain injury |
| Hip fracture |
| Osteoporosis |
| Gait or balance impairment* |
| Visual impairment* |
| Hearing loss |
| Orthostatic hypotension* |
| Delirium* |
| Medications |
| Vasodilators |
| Neuroleptics |
| Agents that lower blood pressure |
| Narcotic analgesia |
| Diuretics |
| Behavior associated with dementia |
| Wandering and elopement |
| Agitation and restlessness |
| Visual hallucination |
| Motor or gait apraxia |

*Items found on fall risk assessment tools.

no other medical problems and took no medications.

One day, staff reported the resident as having upper respiratory symptoms of nasal congestion and poor oral intake that resulted in bed rest. Once recovered, the staff noted her balance to be "off" as she leaned to the right and dragged her leg. No adverse events were reported. Closer physical examination revealed a large ecchymosis of the right hip and pelvis with exquisite pain to range of motion. An x-ray was ordered of the right hip showing a recent intertrochanteric fracture. A bone mineral densitometry showed no osteoporosis. The likely etiology of the fracture was presumed to be a fall because review of the progress notes showed that while she was

Table 2.
Important Dynamic
Characteristics of an Older
Adult With a Presumed Fall

| |
|---|
| Assess for acute changes in |
| Vital signs |
| Level of consciousness |
| Neurological system—gait or balance instability |
| Skin integrity—skin tear, hematoma, bruises |
| Musculoskeletal system—sprain, strain, fracture |

in bed, there were several attempts to get out of bed, and on one occasion, she was found sitting on the floor, voicing no complaints.

Case Analysis

The onset of an acute medical event as mild as an upper respiratory infection can change baseline patterns of mobility for a resident with advanced dementia. Nasal congestion may cause lightheadedness and generalized fatigue exacerbated by restlessness. In this case scenario, the resident's baseline motor function, chronic restlessness, was operative, raising the likelihood of a bed fall. Also, evidence of moderate dementia and impaired communication precluded a reliable history, therefore symptoms may never be elicited. Rather, more reliable indicators of a fall might be clinical observation of a change in behavior or function such as limping with ambulation.

The Clinical Relevance Of A Diagnosis Of Dementia

Dementia is a serious, often insidious disease that destroys the white matter substrate of the brain, eventually affecting all aspects of higher cognitive function including mobility. The destruction of white matter involves irreversible neuronal damage. The location of the destruction is important in terms of areas of cortical involvement, but a diagnosis of

Table 3.
Tips to Possible Dementia-Related Causes of a Fall

Clinical Tips

Clinical progression of white matter disease/dementia

Impairments in clock drawing (refer to diagnostic criteria)

Unexplained falls despite comprehensive evaluation

Motor or gait apraxia

Sitting down when there is no furniture or object present to sit on

With intact vision, walking into objects, furniture, or persons

Apraxia with walking aids—inability to utilize an aide despite prior knowledge or teaching

Alzheimer's disease typically causes global deterioration highlighted by neurofibrillary tangles and plaques.^{1,2}

One of the most obvious signs of dementia is impaired communication, with both expressive and receptive loss. However, it should be kept in mind that impaired communication, the end product of neuronal damage, is only one of the many changes. Others include loss of visuospatial skill. If the area of destruction involves the basal ganglia, signs of Parkinsonism—such as shuffling with walking, balance instability, and truncal rigidity—can be evidenced. These changes supplement the chronic disorientation, confusion, and memory loss of dementia. Illnesses such as Alzheimer's disease often result in frequent falling because of visuospatial impairment and motor apraxia. (Apraxia is loss of a learned skill such as walking, dressing, and bathing.)

The baseline cognitive screen using the Folstein Mini-Mental State Examination (MMSE) can provide invaluable information

about the resident's overall cognitive capabilities and executive function noting specific areas of impairment. In particular, the clock-drawing component of the MMSE has been shown in research to contribute to the diagnosis of dementia.³ The MMSE identifies disorientation, visuospatial impairment, loss of recall, as well as impaired communication and language abilities. Research centered on clock-drawing skills has found correlations between dementia and impairment in visuospatial abilities, as evidenced by impaired clock drawing.⁴ In this study, the severity of dementia was found to be a good predictor of the deficit in visuo-constructive performance. In one recent study, the clock-drawing test was a valid screening method for mild cognitive impairment.⁵ When correlated with neuroanatomy by magnetic resonance imaging, it was found that interruptions in large cortical-subcortical neural networks underlie impairment in the clock-drawing test.⁶

Given the significance of a diagnosis of dementia, the index of suspicion for a fall among older adults with dementia should be considered high. Valuable components of any post-fall assessment when a diagnosis of dementia is present would include interviews of the resident, his or her roommate, or staff; review and observation of baseline function and behavior; and observation for pertinent changes in the resident's condition.

Interview The Resident

There is always the possibility that questions of falling will trigger a memory of a recent or distant fall. Care must be taken in the interpretation of this information because the resident may be recalling a fall from long ago, and in the absence of a witness, there is no reliable means to determine the accuracy of this description. Further probing about where the fall occurred and associated circumstance may reveal the exact time of its occurrence. Typical statements from residents with dementia who fall include both "I don't know" responses and "I don't remember falling." Sometimes having the resident tell his or her story of a recent fall is helpful. This can be noted in the medical record, and should a fall reoccur, another story can be elicited and compared with the previous one.

Interview Potential Witnesses— Roommate, Staff, And Family

Should a fall occur in the resident's room or hallway, it is likely to have been observed by someone such as the housekeeper or a roommate or a staff member. Important information includes the nature of the fall in terms of whether the fall was broken by, for example, a slide to the floor, and whether the person landed on a hard surface or experienced a head injury. Family members may have received a call by telephone from the resident stating that they fell earlier in the day. These sources of information need further follow-up.

Review Baseline Behavior And Function (Static Events)

The baseline data obtained from the comprehensive health history and reflected on the Minimum Data Set (MDS) provides for a template of information about overall baseline function, past medical history, and medications. This information forms static characteristics about the resident. Key areas to review on the MDS include notation of gait or balance impairment and behavioral manifestations such as chronic restlessness, aimless ambulation, or wandering. Although not on the MDS, residents with dementia should be observed for walking into objects such as furniture or into other people, which suggests visuospatial or judgment impairment. Other observations include the inability to judge space relationships, evidenced by attempts to sit down when a seat or chair is not present. Other observations include the resident's ambulation pattern. Does the resident take large bounding steps or appear to step over objects on the floor that are not present? These findings may signal visuospatial impairment or visual misperceptions such as hallucinations, especially when the older adult's vision remains intact.

Observe Resident Function And Behavior For Change (Current-Dynamic Events)

Despite an inability to communicate verbally, many nonverbal cues can give light to an impending medical problem. Failure to eat or drink as before is often a general marker of an imminent underlying problem. Any holding of a body part may be a sign that the resident is experiencing pain at that site. Examples

include when a resident holds his or her lower back (indicating backache) or the jaw (indicating toothache). Inability to walk, stand, or transfer may indicate an underlying musculoskeletal problem, not solely a cognitive deterioration reflective of dementia. Changes in behavior such as a new onset or intensification of an existing behavior, such as agitation or restlessness can signal the post-fall effects associated with trauma. All of these changes are significant and require additional assessment.

Assess For Pertinent Signs Or Symptoms (Current-Dynamic Events)

Vital signs provide for important information about overall physiology and homeostasis. Residents who have fallen and fractured a rib may present with guarding of respiration and shallow breathing. Sudden drops in blood pressure or hypotension can be observed in crush injuries or systemic results of a lower extremity fracture. Any acute change in level of alertness that progressively deteriorates is a medical emergency. Often, regular vital signs and neurological checks (typically up to 72 hours post-fall or more) can detect these events. Observation of the integument can point to skin tears, new and old bruises, and the potential for underlying muscular strain or fracture. Signs of head trauma may be as vague as a mild headache of new onset, changes in vital signs, or neurological decline.

Nurse's Observation And Perception Of The Resident

The nurses' perception that a fall event potentially occurred is as valuable as any other information. Daily observations of the resident allow for the nurse to accrue information incrementally about changes in function. Gradual deterioration, for instance, can be surmised when the nurse reflects back on previous types of function or behavior. Knowledge gained assists in an overall real-time perception of the resident's current status. When these observations yield a high degree of suspicion for a fall, it is vital not only to evaluate the resident thoroughly, but also to consider interventions that will promote patient safety. Injury prevention strategies that are initiated for protective reasons range from

padded and elevated side rails to use of hip protectors, low-rise beds, or bed alarms. Great variability exists in the type of intervention chosen; selection is typically based on the specific needs of the resident and facility resources.

Conclusion

Overall, the post-fall assessment of the older adult with dementia and impaired executive function translates to greater use of the nurse's observation of the resident for subtle or dramatic changes in function and behavior. The vital signs, assessment of integument, cardiovascular, respiratory, and neurological systems remain unchanged as the standard components of a post-fall assessment. The MMSE and its clock-drawing components have special value in identifying visuospatial impairment along with loss of higher cortical function that may explain why the fall occurred in the first place. If the workup of the fall etiology is uneventful, the clinician should consider assessment using the clock-drawing test and MMSE to identify root causes associated with visuospatial impairment that may be the underlying diagnosis of dementia.

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Imposed Versus Involved: Different Strategies to Effect Driving Cessation in Cognitively Impaired Older Adults

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In the lives of persons with cognitive impairments, a time comes when it is necessary to give up driving. This may be a particularly difficult issue for the driver, his or her family members, and their health care professionals. In this study, the phenomenon of unsafe driving by cognitively impaired older adults and the process of affecting driving cessation, was explored through guided interviews with 216 persons throughout the state of Florida. Participants included professionals working in the aging network, mobility counselors, safety officers, individuals with a mild degree of cognitive impairment and their family members. The strategies employed to influence or effect cessation could be categorized as those that *involved* the individual affected and those that were *imposed* on the individual. Conditions that appeared to influence whether driving cessation would occur were observed. There were distinct pros and cons to each strategy. In this article, specific information is provided to guide nurses working with cognitively impaired people who have become unsafe drivers. It is expected that driving cessation can be voluntarily effected in many cases but may have to be imposed in others. The skilled nurse will know when and which type of recommendation is appropriate. (*Geriatr Nurs* 2005;26:111-16)

The acquisition of a driver's license is a critical developmental task associated with achieving adulthood in the United States. It symbolizes independence and confers a certain social status on the driver and owner of a vehicle. The ability to drive permits individuals not only to meet basic needs more easily in most locales (for shopping, seeking health care, and travel to places of employment) but

also permits connection with the community by facilitating attendance at religious, social, sporting, or entertainment events, and visiting with friends and family, thus preventing social isolation.¹⁻³ As a result, having to relinquish one's driver license often causes much distress to the older driver and, consequently, to his or her family as well.⁴⁻⁶

On the other hand, 7,269 people aged 65 and older died from motor vehicle crashes in a single year. Older drivers are more likely to die as the result of injuries associated with a motor vehicle accident. When calculated on the basis of estimated annual travel, the fatality rate for drivers aged 85 and over is 9 times greater than the rate for drivers aged 25 through 69 years.⁷ Based on current rates, the numbers of traffic fatalities involving older drivers will more than triple by 2030.^{1,8}

Many older people continue to drive even though they may not be able to do so safely.⁵ A substantial proportion of their driving problems are associated with the disease processes that increase with advancing age and diminish the skills needed to drive. For example, older persons are more likely to be taking medications, many of which can affect driving ability.² Of particular concern are changes involving visual, perceptual, cognitive, and motor skills.^{9,10}

Although individuals with mild dementia actually have fewer accidents per year than young people (16-24 years), as dementia progresses, it becomes an important risk factor for motor vehicle accidents.¹¹ Cognitive changes, especially visuospatial, agnosic, apraxic, and attention deficits, have been implicated in unsafe driving.¹² Some individuals with dementia appear to either lack insight or deny any decline in driving competence, often deciding to stop driving only after one or more accidents have occurred.¹³ Freund and Szinovacz⁵ found that more than half of those with mild cognitive

Table 1.
Types and Gender of Respondents (N = 216)

| Category of Respondent | Men | Women |
|--|-----------|------------|
| Older drivers | 15 | 25 |
| Family members | 42 | 59 |
| Paraprofessionals/ professionals in aging | 12 | 51 |
| Persons who are both family members and work in the field of aging | 4 | 9 |
| Total | 73 | 144 |

Participant age ranged from ~35 to 97 years.

impairment continue to drive. Almost 20% of the men and 6% of the women with severe impairment continued to drive long distances. Not surprisingly, the lack of an alternative driver was found to be a significant factor in the continuation of driving for both men and women. Those who do not drive or who must stop driving have to depend on public transportation, walking, the favors of friends or relatives, or hiring someone to drive them. These alternatives are often inadequate, increasing reluctance to cease driving.⁶

Although the effects of driving cessation and some of the salient factors (e.g., gender, driving partner, metropolitan residence) that influence driving cessation have been explored, the process of arriving at that outcome has not been articulated. The purpose of this study was to identify and describe the strategies health and social service professionals, paraprofessionals, older persons and their families find to be effective and ineffective in bringing about driving cessation.

METHODS

Participants

We recruited 216 persons from across the state of Florida to participate in a guided interview related to driving cessation in older adults with

cognitive problems (Table 1). Participants were selected on the basis of their personal or professional experience dealing with this issue. They included professionals working in memory disorder clinics, Alzheimer's Association chapter staff, mobility counselors, safety officers, older drivers, and laypersons who attended support groups for people with a mild degree of cognitive impairment and their family members.

Data Analysis

Participant responses were hand written during the interviews and later transcribed. The data were subjected to concurrent analysis using a grounded theory strategy.¹⁴ As themes emerged in the early stages of data collection, they were discussed with later participants and among the investigators to refine and revise the thematic structure.

When saturation was reached, the investigators separately read and reread the transcripts, and then came together to compare and reconcile the thematic structures identified. The results were further refined, and the themes were again reviewed for coherence and consistency. Finally, the themes were reviewed with selected key informants for purposes of establishing validity of the findings.

RESULTS

The phenomena under study were those of unsafe driving and driving cessation related to cognitive impairment. The themes identified related to the context of unsafe driving, the intervening conditions that affected cessation and action and intervention strategies employed to effectuate cessation of unsafe driving. The analysis has implications for counseling cognitively impaired persons regarding driving cessation. Interestingly, there was considerable concordance in the responses of the participants from various groups, that is, individuals with mild cognitive impairment and their family members vis-à-vis professionals. Where substantive differences arose, these are noted and the reasons discussed.

Unsafe Driving

Potentially unsafe driving was observed by the participants in the presence of topographic agnosia, apraxia, or attention deficits (Table 2). Impaired drivers got lost coming or going to familiar places (topographic agnosia), had impaired ability to use car equipment correctly

Table 2.
Conditions Indicating High Risk for Unsafe Driving (Relating to Cognition)

- Topographic agnosia (e.g., getting lost going to or from common places)
- Apraxia (e.g., loss of ability to use care equipment correctly such as key, brake pedal, etc.)
- Attention deficits (e.g., decreased awareness of other cars, pedestrians, stationary objects or condition of the car)

(apraxia), and had decreased awareness of other cars, pedestrians, and so on (attention deficits). People spoke of such things as the failure to identify the brake and gas pedals correctly, crossing lines of traffic without realizing it, and driving with the car door open.

Unsafe driving was described as occurring most often under certain conditions (Table 3). It was reported that people with cognitive impairment would often continue to drive if one or more of the following were present: the individual had a strong desire or need to drive, the individual had access to a car, the lack of an alternate driver, and alternative transportation that was not available, difficult to use, or of unacceptable nature (e.g., rowdy adolescents encountered on public buses).

Driving was also particularly likely to occur in the company of a “copilot,” or someone available in the car who could direct, instruct, and supervise. A number of the women interviewed preferred to act as a copilot to their impaired husbands rather than to assume the responsibility of driving.

Intervening Conditions

Intervening conditions are those factors believed to influence the continuance of unsafe driving or the cessation of driving. The conditions reported included the visibility of the driving deficits; available economic resources; the relationship the driver had with family members, health care providers, and law enforcement personnel; and the meaning the driver attached to his or her vehicle and driving.

Table 3.
Conditions That Increase the Likelihood of Unsafe Driving

- Desire to drive
- Need to drive (no alternatives available or acceptable)
- Access to a vehicle
- Willing copilot

The visibility of specific driving impairments was a particularly important intervening condition. For example, a daughter reported that she had not known her father was having difficulties until she visited him and was a passenger in the car. Her father asked her which pedal was for gas. Stunned, she refused to stay in the car if he continued to drive. In another case, a son never knew his father was a dangerous driver because he automatically assumed the role of the driver during his visits and thus his father’s deficits remained invisible.

Actions and Intervention Strategies

Two different—and in many respects conflicting—strategies to achieving driving cessation were espoused by the respondents (Table 4). An *involved* strategy is based on open communication and inclusion of the cognitively impaired person in the decision to stop driving. An *imposed* strategy, in contrast, uses direct action to prevent the cognitively impaired person from driving without discussion or participation in making the decision. Few, if any, cognitively impaired respondents supported the imposed strategy, whereas a significant minority of family members and professionals did, providing examples and arguments in favor of its efficacy and, at times, necessity.

Involved Strategy. An involved strategy is based on the principle that the cognitively impaired person is an adult who has the right to be included in decisions affecting his or her life. It is further argued that the person who understands the reasons for stopping will, in most cases, agree that it is necessary to stop driving.

Table 4.
Action Strategies Used to Bring about Driving Cessation

| Action Strategies | |
|--|--|
| Imposed Type | Involved Type |
| Report person to division of motor vehicles for possible license suspension | All family members and individual meet, discuss the situation, and come to a mutual agreement of the problem |
| Use of deception or threats such as false keys, disabling the car, saying car was stolen | Dialogue is ongoing from the earliest signs of cognitive impairment of the eventuality of the need to stop driving |
| Attempts to order or control such as provider writing a prescription, commands from children to stop driving | Arrangements are made for alternative transportation plans that are available when needed and acceptable to the individual |

Combining suggestions from a variety of respondents, including people with a mild degree of cognitive impairment, the involved strategy would begin with discussion of the eventual need to stop driving, preferably long before it becomes a critical safety issue. Any discussion of driving errors should be specific, not global. "You went through that stop sign" is considered preferable to "You never pay attention to what you are doing." A calm, empathetic sharing of views is thought to be more likely to occur under this scenario than if the subject is brought up during an argument or when an accident or near accident has occurred. Acknowledging the losses incurred when one stops driving is considered important. Equally important is the creation of a realistic, affordable, and acceptable plan for alternative transportation.

A number of respondents raised an interesting point about convincing the cognitively impaired person that it has become dangerous to drive. Danger to oneself, many reported, is not persuasive to a cognitively impaired older adult. Danger to others, especially a beloved grandchild, neighbor's child or even a pet, was reported to be far more persuasive.

A somewhat different but nevertheless involved tactic is to point out the legal and economic ramifications of having an accident, particularly after the person has been advised to stop or had the driver's license revoked. The danger of losing one's savings in the resulting law-

suit can be persuasive to some. Others may be persuaded by an analysis of the cost of owning, maintaining, and insuring a car compared with paying someone to drive or using a taxi service.

The involved strategy is time-consuming, and its effectiveness is uncertain, particularly with more advanced impairment. On the other hand, it helps to maintain relationships and demonstrates respect for the individual with cognitive limitations.

Imposed. Use of the imposed strategy is based on several arguments. The first is that cognitively impaired persons are either unwilling or unable to make a wise decision, so the family member or professional must do it for them. The second major argument is that the safety of the cognitively impaired driver and anyone in the vicinity of this driver is in jeopardy and that safety considerations supercede any other considerations. The third is that this strategy works.

One or more respondents mentioned a number of strategies that fall within the imposed category:

- Keep the car out of sight and put the keys in a new place where they are not easily found.
- Tell a "therapeutic fib" that the car won't work, the keys are lost, or the insurance was cancelled.
- Disable the car or put an antitheft device on the steering wheel to lock it.

Table 5.
Factors That Positively Influence the Success of Driving Cessation Counseling Interventions

- Visibility of the impaired driving skills
- The occurrence of recent accidents or “near misses”
- Positive relationships with family member and health care provider
- Individual is female
- There are acceptable options for transportation alternatives

- Sell the car or give it away.
- Report the person to the Division of Motor Vehicles pursuant to having that license revoked. (It was noted that this is not as certain a solution as it would first appear because some people drive without a license.)

On one hand, the imposed strategy includes a number of strategies that may be highly effective and quick to accomplish. On the other hand, imposed strategies may be considered dehumanizing and have the potential to undermine trust and damage the relationship between the cognitively impaired person, his or her family, and professionals involved in caring for the impaired person. Health care providers who use the imposed strategy may be “fired” by the patient, and family members may be the target of much displeasure if not anger, but driving cessation is usually achieved.

DISCUSSION

The participants in this study described specific safety concerns regarding people who have cognitive impairment continuing to drive. These areas of concern were consistent with the literature: getting lost coming or going to familiar places, inability to use car equipment correctly, and decreased awareness of other cars, pedestrians, and so on. Once these factors become apparent, intervention was deemed necessary.

Many cognitively impaired adults voluntarily stop driving when the potential dangers

Table 6.
Sources of Information About Driving Testing Locations

- Local department of motor vehicles
- State department of transportation
- Area agencies on aging
- Senior help lines
- National Safety Council
- National Highway Transportation Safety Administration (www.nhtsa.dot.gov)
- Health care facilities with outpatient occupational therapy services

Most driving testing is for persons with physical challenges. It is important that this testing is specifically designed for persons with cognitive limitations.

Table 7.
Factors to Consider in the Development of an Alternative Transportation Plan

- Specific information about transportation needs (e.g. distance, frequency of reoccurring needs such as trips to church)
- Specific costs of current transportation (e.g., insurance, gas, maintenance, payments)
- Meaning that independent transportation and vehicle(s) holds for driver
- Pros and cons of each form of alternative transportation available and suitability for the persons with a cognitive impairment
- Level of cognitive impairment

become apparent to them (Table 5). Some are frightened by an incident that occurred while driving; others are happy to have someone else

drive. In either instance, they stop with little or no argument. Naturally, these individuals are less likely to come to the attention of professionals than are those who resist.

Among people reluctant to give up driving, driving cessation is more problematic. Because dementia affects the quality of decision making, multiple judgment issues arise. Dementia patients may have reduced insight about their own capabilities and try to do things that they are not capable of doing,¹⁵ including driving. Professional intervention, through counseling the driver and significant others, may be necessary. Counseling can prepare family members for the expected course of disease and increase the caregivers' ability to cope.¹⁶ The reality of the unsafe driving must be made visible to both the driver and the family. This may occur through simple observation or through driver testing, preferably testing that is specific to persons with cognitive impairment (Table 6).

Once unsafe driving is made apparent, health care professionals and others in the aging network have a responsibility to provide the cognitively impaired person and his or her family with a range of options and informed strategies for effecting cessation. Measures to influence the context of driving and the intervening conditions—for example, reducing the need for driving and developing reasonable and acceptable alternatives to driving (Table 7)—may be fruitful. Involving the impaired driver in the process from the beginning would be the preferred strategy from a humanistic point of view, but the potential necessity of the imposed strategy is recognized.

As the number of older persons and, therefore, older drivers with cognitive impairment increases, so does the need to implement an effective yet caring strategy to bring about driving cessation. This article presents information that should be of use to nurses dealing with driving cessation for a person with cognitive impairment. By incorporating the information presented, the intervention may be affirming whenever possible but may become directive when necessary. Further research is needed to test the effectiveness of these interventions on drivers with cognitive impairment.

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Subcortical Vascular Dementia

Donna Fladd, NPP, RN

Vascular dementia is the second most prevalent type of dementia in the United States today. This article includes a review of its pathophysiology, which involves the damage of small vessels in the brain, an abundance of which are in the subcortical region, thus creating a subcategory called subcortical vascular dementia (SVD). Various diseases, such as diabetes and high blood pressure, predispose the individual to damage to these small vessels. The symptoms of SVD are included as a review and helpful outline to differentiate SVD from Alzheimer's dementia and depression. Additionally, evidence-based interventions are reviewed. Nurses play a unique role in preventing and minimizing this dementia, which afflicts such a large percentage of our elderly population. (*Geriatr Nurs* 2005;26:117-21)

When an elderly patient presents to a visiting home nurse, psychiatric nurse, or a nurse working in a medical clinic, it is important to recognize that there may be other health problems that mimic depressive-like symptoms. One of these conditions is subcortical vascular dementia (SVD). Vascular dementia is the second most prevalent dementia in the United States.¹⁻³ In the early stages, the presentation is subtle and can be mistaken for depression. Oftentimes, months and even years go by with the patient trying expensive but ineffective treatment, which is frustrating to all involved. As nurses, we are patient advocates when we have a good knowledge base. With this base internalized, we can critically analyze the data, determine whether interventions are working, and provide feedback to the primary care provider. Nurse practitioners can determine whether there is a need for further diagnostic workup to rule out underlying medical conditions, such as SVD, and adjust the course of treatment accordingly. Cognitive decline from SVD can be slowed and stabilized

when the risk factors are managed.³ This article reviews the physiology of the brain, outlines the pathophysiology of SVD, compares Alzheimer's dementia (AD) with SVD, and differentiates SVD from depression. Finally, evidenced-based interventions are discussed.

Background

The brain is an interactive mass of neurons conducting information from within and around the body, processing this information, and relaying responses back through our thoughts and actions. Damage to brain tissue can occur through a variety of mechanisms, resulting in dementia and estimated to cost the nation \$30 billion annually.⁴ Dementia is defined by Cummings² as impairment "in 3 out of 5 behavioral domains": personality, memory, visual-spatial skills, language, and cognition, which includes problem solving and mathematical calculations. Of those people over age 65 years, 5% have severe dementia, and 10% have mild to moderate dementia.^{5,6}

Pathophysiology

One way brain tissues become damaged and that dementia sets in is through atherosclerosis—the thickening and hardening of the arteries. The 2 main risk factors that accelerate atherosclerosis of the arterioles are hypertension (HTN) and diabetes mellitus (DM).³ Within the brain the smaller lumen arterioles lack the elasticity that the larger arteries possess, making them more susceptible to damage by atherosclerosis. As the vessel walls thicken and stiffen, the lumen gradually narrows and the vessel twists, eventually creating 2 conditions: hypoperfusion or occlusion.³ Hypoperfusion *slowly* cuts oxygen and nutrients to brain tissue. Occlusion *suddenly* halts the blood supply to a particular region of tissue. Both result in ischemic brain tissue.

Areas in the brain where arterioles are most abundant are in the subcortical region, at the point where it connects to the frontal lobe.

Therefore, vascular damage most likely occurs in the subcortical-frontal lobe areas of the brain.^{1,3} With enough damage, dementia emerges with behavioral changes that correlate to the region of the brain where there is ischemia. With subcortical vascular dementia, changes may be sudden or gradual and then progress in a stepwise manner.¹ Although normal intelligence is maintained, behavioral changes may be seen, including a change in or impairment of a person's sense of social judgment, speech and language patterns, and problem-solving ability.⁷ Motor slowing, blunting of emotion, and lack of initiation are or can also be seen because the motor circuit is damaged between the basal ganglion and frontal cortex.^{7,8} These changes give the person the appearance of being depressed. Populations in which subcortical vascular dementia is seen with the most frequency are in those where hypertension and diabetes mellitus are more prevalent. These populations include African Americans and Japanese Americans.³

Identifying SVD

"The main feature [that differentiates] subcortical dementia . . . from other dementias is psychomotor slowness."⁷ Straub and Black⁷ note that a quick clinical test developed by Power and colleagues⁹ assesses cognitive slowing by asking the patient to write the alphabet in uppercase letters. The normal range in this timed test is less than 21 seconds. Longer than 21 seconds indicates cognitive slowing,⁹ as in a patient with SVD. Further diagnostic workups can then be justified to determine the appropriate diagnoses and treatment.

Various workup interventions and blood tests can be gathered to rule out other illnesses and support dementia diagnoses. Magnetic resonance imaging (MRI) is the most definitive diagnostic tool.³ A retinal examination can also reveal arteriole damage. Observation of arteriole damage could be the wake-up call to reevaluated diabetes and hypertension management. Chui³ noted that a benefit of knowing whether there is hypoperfusion of the brain tissue is to manage the blood pressure accordingly, that is, not to bring it too low so as to exacerbate ischemia through hypoperfusion. Chui³ suggested systolic blood pressure remain in the range of 135 to 150 mm Hg. Another important factor to consider with an accurate diagnosis

of SVD is that whereas AD is progressive, SVD can be slowed and stabilized by managing risk factors.

Differentiating SVD from AD

Alzheimer's dementia (AD) is the most common type of dementia in the United States, affecting 2–4 million people.¹⁰ AD is a progressive degeneration of the cerebral cortex neurons, where memories are stored. The cortex is also where the ability to learn new things, abstract thinking, and visual-spatial understanding takes place. With progressive cortex deterioration, knowledge of the most basic skills ebbs, resulting in progressive amnesia, loss of meaning in speech, impairment in visually understanding the world, and an inability to think abstractly.¹¹ Refer to [Table 1](#) for a summary of the presentation of SVD and AD and applied mental status examination techniques that the clinician can perform to assess various cognitive functions. In many cases, AD and SVD occur simultaneously.

Differentiating SVD from Depression

When it comes to assessing whether an elderly patient has depression or dementia, several considerations need to be addressed, summarized from Straub and Black.⁷ First, a history must be obtained by interviewing the patient and those people who know the person best. Determining whether there is a history of depression or psychiatric problems, including alcohol or drug abuse, is helpful. Second, it is important to find out the onset and course of cognitive decline. With dementia there is usually a long delay between the onset of symptoms and seeking help. Suspect depression if the onset of cognitive decline is sudden and if social stresses precipitate decline in functioning. Next, evaluate whether the cognitive exam results are consistent and valid. The depressed elderly patient may provide inconsistent results because his or her cooperation and concentration may wax and wane. Anything that requires mental energy will be difficult for the depressed patient. On the other hand, the person with dementia will present as willing to attempt the cognitive examination. The depressed patient may also complain about poor cognitive decline, whereas the person with dementia is unaware of cognitive changes. Sometimes the evening hours worsen dementia

Table 1.
Comparing and Contrasting AD to SVD Using the Mental Status Exam

| Mental Status Exam | Test | Alzheimer's Dementia | Subcortical Vascular Dementia |
|-----------------------|--|-------------------------------------|-------------------------------|
| Motor speed | Observe gait | Spastic hyperreflexia | Small steps |
| Attention | Rule out delirium test with digit repetition test | Normal | Normal |
| Psychomotor speed | Writing the alphabet in upper case letters (normal < 21 seconds) | Normal | Slowed |
| Memory | Test memory with register and recall | Amnesia | Patchy retrieval defects |
| Speech | Observation | Aphasic, empty with loss of meaning | Dysarthric |
| Visual-spatial | Request a cube drawing from an example | Poor | Occasional defects |
| Executive functioning | Multitask questions, math calculations, and proverb interpretation | Dysfunction with poor insight | Poor |

Adapted from Lauterbach.¹² For more information on the Mental Status Examination, please refer to Straub and Black.⁷

Table 2.
Differentiating Between Dementia and Depression

| Depression | Dementia |
|--|--|
| Inconsistent presentation | Usually an unchanging presentation |
| Complains of loss of cognitive functioning | Few complaints of any changes in cognition |
| Gives little effort on examination items | Struggles with tasks |

Adapted from Straub and Black.⁷

symptoms and will have no effect on the person with depression. Refer to [Table 2](#) for a summary of the differences between depression and dementia. If health care providers determine that depression is present, treatment should proceed and improvement should be expected.

Evidence-Based Interventions

Evidence-based intervention (EBI) is a term used to classify the type of research that supports interventions used in the medical community. The type of research is divided into 3 classes. Class I describes research evidence from 1 or more well-designed, randomized, controlled

clinical trials. Class II provides evidence based on 1 or more well-designed clinical studies from case-control, cohort, and other less controlled studies. Class III describes evidence provided by expert opinion, nonrandomized historical controls or 1 or more case reports.

Primary prevention, the most effective means to prevent or reduce SVD, is demonstrated by several Class I studies that show, that management of hypertension (HTN) improves cognitive functioning and prevents dementia.¹³⁻¹⁶ Other noted studies include the use of antiplatelet medication as prevention of vascular damage.¹⁷

Secondary prevention describes treatments to prevent the recurrence of a vascular accident or minimize further cognitive decline. Class I studies include the management of HTN as well as antiplatelet medications.¹⁷ Other Class I studies with rivastigmine tartrate and galantamine hydrobromide^{18,19} show enhancing cholinergic functioning improves cognitive functioning or slows cognitive decline in people with vascular dementia. Additional Class I studies of donepezil hydrochloride showed cognitive improvement over placebo in people with vascular dementia.²⁰⁻²² Finally, tertiary care or treating the symptoms as best as possible, includes several studies in progress that include research on acetylcholinesterase inhibitors and ginkgo biloba.¹²

Nursing Management

An important aspect of nursing management of SVD is to facilitate prevention of HTN and DM. Paramount to prevention includes, but is not limited to, a good diet, at least 8 hours of sleep, and regular exercise. Health care providers who list these recommendations without inquiring about a patient's lifestyle are not really providing information or education. As nurses, we are in a position to ask questions pertaining to lifestyle and listen to the patient who may describe barriers to basic health maintenance. Poverty, limited support systems, stressful life styles, and drug or alcohol abuse are but a few unhealthy situations and behaviors that predispose a person to chronic health problems, including HTN and DM. Once a barrier is identified, the nurse should be ready to provide appropriate information and encouragement, supporting the patient to make changes. When HTN and DM are diagnosed, the nurse may be the primary health care provider

who runs educational groups, is asked medication questions, and follows up with patients regarding lab results.

Summary

This article presents a comprehensive review of SVD and offers a clear outline to assist nurses in differentiating among patients with SVD and those with AD or depression. Research-based interventions are included to support nurses in providing effective patient and family education and treatment to prevent or minimize SVD by managing HTN and DM.

Conclusion

Knowledge of the various types of dementias becomes poignant when caring for patients who struggle to accomplish seemingly simple activities. This underscores the importance of primary prevention through education and regular health checks for diabetes and hypertension. As nurses, we are the main providers of such multifaceted care and can provide education and support for management of DM and HTN. The long-term consequences are too critical to ignore. Tools for early detection of vessel damage are sorely lacking, and more research in this area is needed. Perhaps in the future, MRI dementia screening will become as routine as mammograms and prostate screening. Tools designed to collect information to assess changes in a patient should also include questions for significant others. Likewise, further research is needed to determine whether poor glycemic control of DM contributes to the prevention of cognitive decline.

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The Frail Elderly Community-Based Case Management Project

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Nationally, the older population is expected to double in numbers through the year 2030. Health care providers are challenged to develop new models of care delivery for this unique population. Described in this article is one project that demonstrates successful outcomes for a community in eastern North Carolina. The model implemented community-based geriatric case management for frail elderly citizens residing in a private home or in an assisted living facility. Conventional hands-on delivery was combined with the distance-based convenience of telehealth. The outcomes prove this model to be cost-effective while improving quality of life for enrollees. (*Geriatr Nurs* 2005;26:122-7)

As the U.S. geriatric population continues to grow, utilization of health care resources will also continue at its increased rate among this population, compared with other age groups. This is particularly true for the frail elderly, aged 85 and older, which is the fastest-growing segment of the elderly population.¹ In North Carolina, the number of people aged 65 and older is expected to increase by more than 50% from 2000 and 2030,² which implies a demand on the health care system consistent with national projections. As of 2000, Pitt County's elderly population had approximately 13,000 senior citizens, and projections are that this will increase to 26,000 by 2025.³ Because of these projections, new models of care must be undertaken to determine models for cost-effective delivery of care for this unique population while ensuring that the quality of care is not sacrificed.

Program Overview

In June 2000, Pitt County Memorial Hospital (PCMH) and the Brody School of Medicine (BSOM) at East Carolina University Geriatric Clinic joined efforts to execute a 3-year study. The Duke Endowment funded the project, and

the PCMH and BSOM Geriatric Clinic provided in-kind support. The purpose of the study was to investigate the effects of community-based case management for frail elderly residents of Pitt County and what effect this would have on health care utilization among this population group. This new health care initiative had never been attempted in eastern North Carolina. The clinical staff consisted of 2 nurse case managers (NCM) and 1 social-work case manager (SWCM). One of the NCMs was an advanced practice nurse and was board certified as a gerontological nurse; and the other was BSN-prepared with extensive rehab and community health experience. The SWCM was masters-prepared and a licensed counselor. The program service provided a combination of traditional hands-on care by nurse and social-work case managers, as well as the technology of distance-based health care utilized through a telehealth unit. This unit is approximately the size of a breadbox and allows regular physical assessments in the convenience of one's home by providing two-way audio and visual interface, allowing the nurse to complete a comprehensive physical assessment. It was proposed that this part of the case management model would allow earlier identification of health-related problems, an overall decrease in fragmentation of health care delivery, and reduction of health care costs for this population.

Program Development And Goals

A steering committee was formed that included medical staff from the BSOM Geriatric Clinic, PCMH staff, executive directors from local assisted living facilities, representatives from the local council on aging (regional ombudsman of the MidEast Commission on Aging), legislative representatives, the Pitt County Department of Social Services, and the Eastern Area Health Education Center (AHEC). Through a collaborative effort, the following goals were created for the program:

- Establishment of a community-based med-

ical case management program for residents with symptoms of frailty

- Evaluation of home telehealth technology and outcomes in a population-based application
- Reduction of emergent visits to the hospital and physician's office related to chronic disease as well as other health issues and a decrease in hospital admissions
- Increased understanding and acceptance of end-of-life options
- Establishment of a community-based educational program for assisted living residents, caregivers, and staff to learn about aging issues and prevention of frailty and other debilitating diseases and syndromes.

The Steering Committee met on a quarterly basis throughout the 3-year grant period to provide program oversight and assist with ongoing program development and evaluation.

Enrollment Methodology And Data Collection

After approval from the hospital internal review board was obtained, enrollment methodology consisted of obtaining signed informed consent from the patient or his or her legal representative for case management services and telehealth services, as well as a consent waiver and release for images when pictures were obtained for educational use at various local and national presentations. To obtain objective baseline data, the nurse and social-work case managers developed comprehensive discipline-specific assessment forms, which were administered to all enrollees.⁴⁻⁸ The enrollment data also included administration of the Folstein Mini-Mental State Exam (MMSE) and the Modified Geriatric Depression Scale (MDGS), which were administered at time of enrollment and annually thereafter.^{6,9} A health care satisfaction survey was developed by one of the nurse case managers and administered at the time of enrollment and the completion of the project.

Those enrolled into the program were aged 65 or older, resided in a private home or in 1 of 3 local assisted living communities in Pitt County, and received their health care at the BSOM Geriatric Clinic. The enrollees were identified by their primary care physician as those who would benefit from intense monitoring of chronic illnesses that could not be done through regular clinic visits. On average, the enrollees had 12

chronic diseases and took 15 daily medications. The number enrolled totaled 107.

During the week, whenever a case manager had contact with a patient, whether face-to-face, in a telehealth assessment, or by phone call, data were documented into a paperless electronic database, developed by a hospital data analyst. This comprehensive relational database was used to document, trend, and report clinical, social, and behavioral changes. Cumulative data were compiled throughout the grant period to track outcomes. Information such as type of visit, length of visit, cumulative number of visits, as well as all general and clinical information was collected in this database. Other capabilities, such as when the next assessment was scheduled, could be stored and retrieved. The same clinical data was also communicated, in a "cut and paste" fashion to the physicians in real time using an electronic medical record, called Logician, which is used by all staff members at the BSOM clinics. This time-effective communication allowed faster treatment for exacerbations of disease states, quicker turnaround time on prescription refills, and kept the physician informed on a patients' overall status between regular clinic visits.

Program Components

Depending on individual needs, interventions consisted of case management of medical and social conditions, telemedicine assessments for medically compromised patients, and utilization of hospice and promotion for acceptance of end-of-life decision making. On a monthly basis, the nurse case managers also provided education about specific health care issues for assisted living staff members and residents and their family members.¹⁰⁻¹³ Assisted living facilities in North Carolina are required to provide continuing education for staff on an annual basis. The nurse case managers were able to help meet this need by facilitating monthly staff inservices on various subjects that could positively impact the needs of the residents (Table 1). Weekly patient care conferences were conducted at the geriatric clinic; the case managers, geriatricians, geriatric fellows, pharmacy and medical students, and the geriatric clinic support staff attended these. Through a collaborative effort between the primary care physicians, geriatric clinic and assisted living community staff, and nurse and social-work case

Table 1.
**Examples of Education Sessions
 Provided to Assisted Living
 Staff, Residents, and Family
 Members**

| |
|--|
| Fall prevention and gait instability |
| Dementia, depression, and delirium |
| Stroke prevention |
| Osteoporosis |
| Skin care and pressure sore prevention |
| Nutrition and hydration |
| End-of-life issues |
| Pneumonia and influenza prevention |
| Diabetes |
| Polypharmacy |
| Constipation |
| Dental care |

managers, this unique health care delivery model was successfully executed over a 3-year grant period. An overview of services provided by the model is as follows:

- Case management of medical and social conditions
- Telehealth assessments for medically compromised patients
- Hospice use and acceptance for end-of-life care needs
- Education for the patient or resident, staff of the assisted living communities, and family members or primary caregivers about specific care needs and concerns

Outcomes

Because of the outcomes of this project, Geriatric Case Management is now a permanent outreach community service for Pitt County geriatric residents provided by Pitt County Memorial Hospital. These services are now

completely funded by PCMH with 2 full-time nurse case managers at no cost to the client. It has been found to be financially worthwhile for PCMH to provide this service for community-dwelling seniors. It also provides a needed service to an identified elderly population known to be at risk for fragmented, costly health care. The total number of case-managed days was compared with the number of days before case management enrollment. This was done so that those who died or moved away could still be included in the outcomes data. The project demonstrated positive outcomes in all areas that were studied. The figures provide pre- and postenrollment cumulative outcomes, including emergency department visits (Figure 1), emergency department costs (Figure 2), hospital admissions (Figure 3), hospital admission costs (Figure 4), and total number of hospital days (Figure 5). It should also be noted that the average MMSE score declined over time, indicating a progressive deterioration of mental functioning, but the MGDS scores demonstrated an improved perception on quality of life.

Lessons Learned

During the execution of the grant, we discovered that telehealth was not always “user friendly” for people who had middle-stage Alzheimer’s disease. At times, it caused unnecessary frustration or agitation for the enrollee who had difficulty learning a new task, such as how to navigate correctly with the telehealth machine itself. Training was provided to the assisted living staff, and when needed, they would assist those residents with functional limitations. After discussion with the case managers, facility staff, and Dr. Kenneth Steinweg, the program medical director, it was decided not to implement telehealth as an assessment modality for those enrolled with moderate to severe Alzheimer’s-type dementia.¹⁰ Face-to-face assessments were provided for these individuals, which proved to be the most appropriate assessment standard.⁸

One ideal example that demonstrates the positive effects of telehealth was with a legally blind resident with stage IV heart failure. She was able to memorize by touch and sound which button to press while being assessed by the NCMs and commented that telehealth was “better than indoor plumbing.” Through the use of this technology, this resident was able to

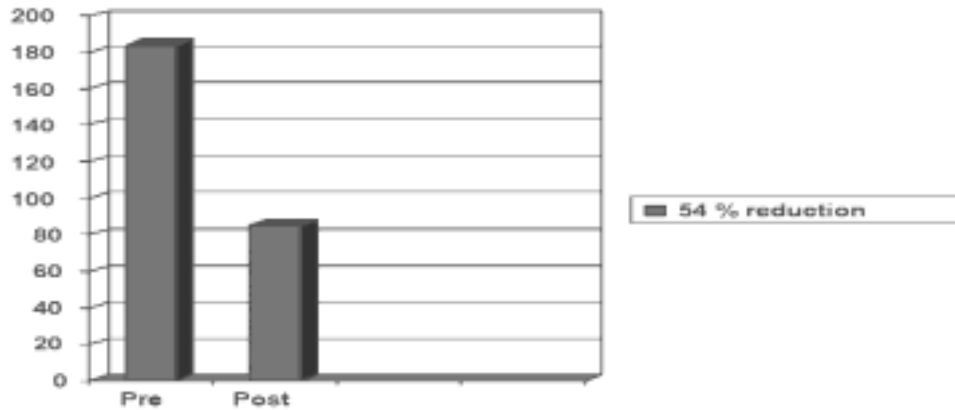


Figure 1. Emergency Department Visits

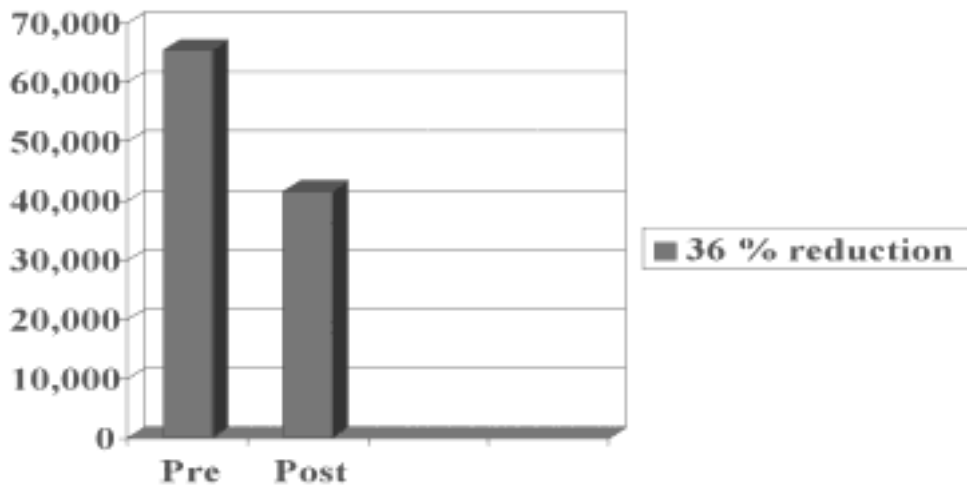


Figure 2. Emergency Department Costs

reduce significantly her trips to the emergency department because of frequent heart failure exacerbations. In this particular case, the patient used telehealth 2 to 3 times a week. The NCMs were able to perform a comprehensive cardiovascular assessment, including auscultation of heart and lung sounds, obtain blood pressure and weight measures, and inspect lower extremities for degree of edema.^{5,13} The NCMs were also able to review with the patient and staff what the patient's recent diet consisted of and provide guidance on strategies for reducing dietary sodium. Depending on these assessment findings and contact with the physician through the Logician database, the NCMs would make a subsequent face-to-face visit to administer intravenous Lasix when nec-

essary. This intense monitoring prevented multiple trips to the emergency department through early intervention and symptom management.

Data from this project have been shared on the national level with the American Geriatrics Society and the National Gerontological Nursing Associations, and the project was nominated for the Judith Braun Clinical Research Award, as well as the local level for the East Carolina University School of Nursing and Pitt County Memorial Hospital's Collaborative Research Day, an annual event.

Other benefits included monitoring the enrollees in their own environment and learning individual idiosyncrasies. The case managers were also able to complement the knowl-

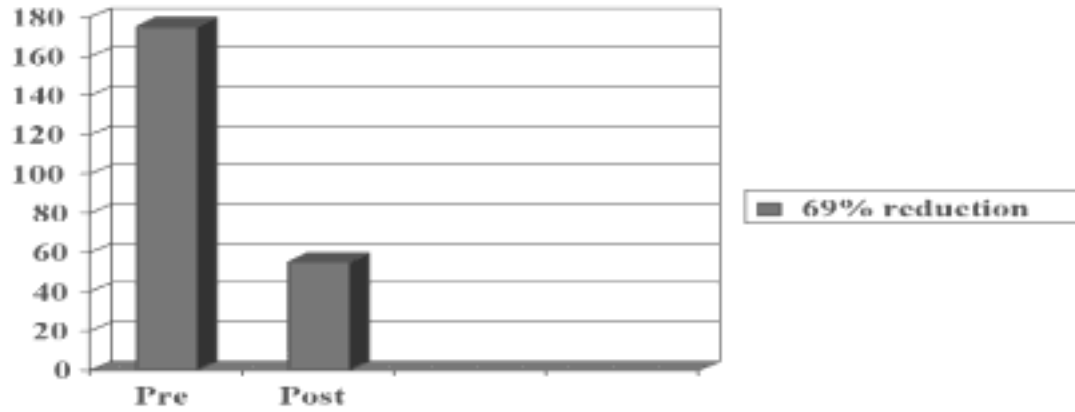


Figure 3. Hospital Admissions

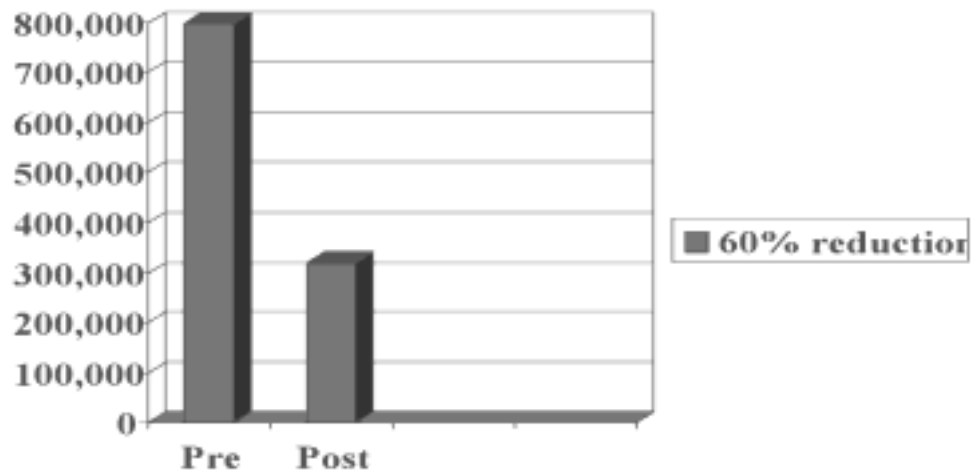


Figure 4. Hospital Costs

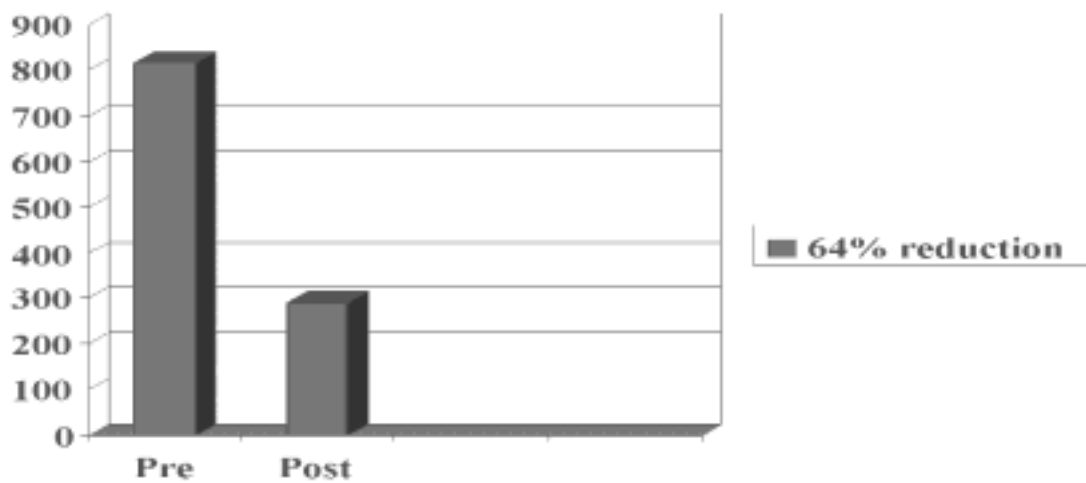


Figure 5. Hospital length of stay (LOS)

edge base of the geriatric clinic staff by sharing significant information with them that is typically not discovered in the clinic setting. Over time, the staff at the assisted living facilities and the NCMs developed a close working relationship, and when a question arose or a change in a resident's status was discovered, many times it was the nurse case manager the staff would call first. This allowed quick assessment of the situation and frequently prevented a trip to the clinic or hospital.

Outcomes One Year After The Grant

Data from June 2002 to July 2003 demonstrate continued benefit in reducing hospital cost, length of stay, number of hospitalizations and trips for emergency care. The role of the NCMs has changed. Both NCM positions are now filled by BSN-prepared nurses. One of the NCMs has been in her role since the implementation of the grant and focuses completely on community-based needs, utilizing the model developed during the grant period. The other NCM has an inpatient focus and makes contact with every inpatient admitted, aged 85 and older, and makes a phone follow-up after discharge to determine whether medical needs are being met. Interestingly, the makeup of those case managed have changed since the grant ended. Of those 48 individuals case managed during that first year following the grant, 33 are those who reside in a private home. During the grant period, the majority of the case-managed population resided in an assisted living facility. The change in population makeup may be an effect of staff education, which resulted in a greater knowledge base for the particular needs of this unique population. This occurred due to regular contact with the NCMs, attending education sessions, assisting with telehealth assessments, and learning which findings indicated a problem.^{7,9} They became more alert to significant changes and knew when to notify the health care provider before an exacerbation of a chronic illness occurred. Overall, the outcomes are as follows:

- 13% decrease in hospital admissions
- 38% decrease in emergency room visits
- 22% decrease in length of stay
- 73% decrease in total hospital cost

The Frail Elderly Community-Based Case Management Project is a successful example of what can happen when a community pulls

together various experts and resources for the benefit of the local geriatric population. With adequate funding, this model can and should be proactively duplicated by other communities.

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