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PERSPECTIVES on
Neurophysiology and Neurogenic Speech and Language Disorders
American Speech-Language-Hearing Association
SPECIAL INTEREST GROUP 2

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American Speech-Language-Hearing Association
SPECIAL INTEREST GROUP 2

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Perspectives on Neurophysiology and Neurogenic Speech and Language Disorders
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Guest Editor Column

Nancy Paul

Implementing Direct and Indirect Interventions for Persons With Cognitive-Communicative Disorders of Dementia

Earlier in my career as a practicing clinician, a publication of *Seminars in Speech and Language* made a significant impact upon me. At the time, I worked both in a medical hospital setting and in a long-term care facility. In both settings, the main referrals received for persons with dementia were swallowing evaluations. I knew there were needs that were being unmet in the areas of cognition and communication and sought information on how to provide a broader range of services to persons with cognitive-communicative disorders related to dementia. Two specific articles in that issue of *Seminars* opened my eyes to a wide array of viable interventions that could be included in the SLPs' clinical practice: *Direct interventions for improving the performance of individuals with Alzheimer's disease* (Mahendra, 2001) and *indirect interventions to facilitate communication in Alzheimer's disease* (Hopper, 2001). The work of Dr. Mahendra and Dr. Hopper led to a thirst to read the original literature on the interventions used for individuals with dementia and to match the interventions to appropriate clients. When I transitioned to a university teaching position, I was thrilled to have the opportunity to expose my students to the multitude of possible interventions for cognitive-communication disorders associated with dementia and to create service learning opportunities through which students could implement them.

Given my personal clinical and academic experiences, the primary impetus for the current issue of *Perspectives* was to provide information on the direct and indirect interventions for persons with cognitive-communicative disorders of dementia that are currently being utilized by clinicians as well as to explore the barriers and facilitators affecting implementation in real-world settings. Serving persons with cognitive-communicative disorders of dementia is considered one of the fastest growing segments of the speech-language pathology profession (Bayles & Tomoeda, 2014). For those involved in evaluation and treatment of persons with cognitive-communicative disorders of dementia, challenges continue to arise.

It is hoped that the issue will provide information to practicing clinicians that might prove helpful to improve implementation. In the first article, Paul and Mehrhoff offer a glimpse into the barriers and facilitators that clinicians experience when implementing cognitive-communication intervention for individuals with dementia. Through a survey completed by the SIG 2 members, we are also able to gain a snapshot of the direct and indirect interventions and collaborations utilized most often used in the varied settings in which persons with dementia are treated. In the second article, Hopper, Douglas, and Khayum build on this theme through a consideration of interventions from the lens of person-centered care. The authors provide case examples to give clinicians a framework for implementing this approach in their own clinical practice. Finally, Mason-Baughman and Kinder close the issue by addressing the intersection of evidence-based treatment in the current regulations and reimbursement environment. This article gives clinicians valuable information by providing a practice update with specific emphasis on ensuring the direct and indirect speech-language pathology services provided to persons with cognitive communicative deficits related to dementia are reimbursable.

We hope practicing speech-language pathologists (SLPs) will find the information in this issue of helpful in their practices. The person with cognitive-communicative disorders due to dementia will benefit from improved skills of the SLPs with whom he/she works. At the heart of this issue of *Perspectives* is the person with dementia and those within the person's environment. It is for them that this issue was created.

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Descriptive Analysis: Survey of Direct and Indirect Interventions for Persons With Dementia-Based Communication Disorders

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Abstract

Results of a survey made available to SIG 2 and SIG 15 affiliates via the SIG listservs revealed information on direct and indirect interventions utilized for persons with dementia-based communication disorders. Fifty-eight practicing speech-language pathologists (SLPs) participated and reported using the following direct interventions most frequently: specific verbal instruction, cognitive stimulation, memory wallet, spaced retrieval, and errorless learning. The overwhelming majority of participants utilized caregiver training as the most frequent indirect technique. Barriers and facilitators to providing intervention for persons with dementia-related communication disorders were identified.

Persons with dementia-related communication disorders are one of the fastest growing populations served by speech-language pathologists (SLPs) according to the American Speech-Language-Hearing Association (ASHA; Bayles & Tomoeda, 2014). The Center for Disease Control and Prevention (CDC, 2015b) reported up to 5.3 million Americans currently have Alzheimer's disease, and the incidence has the potential to double by the year 2050. A 2013 survey of health-related ASHA members revealed 15% of SLP caseloads included serving persons with dementia-related communication disorders, however, for the subpopulation of SLPs serving skilled nursing facilities, this number was much higher at 27% (ASHA 2013). According to the CDC (2015a), 48.5% of persons in long-term care have a diagnosis of some type of dementia. The SLPs in rural settings tended to serve persons with dementia more frequently (21% of caseload) than their urban counterparts (12%; ASHA, 2013).

Cognitive-communicative disorders of dementia encompass a variety of areas related to cognitive processes including attention, learning and memory, reasoning, and executive function (ASHA, 2015). Addressing these areas is clearly within the scope of practice for SLPs (ASHA, 2007). ASHA provides guidance for clinicians through the practice policies related to cognitive-communicative disorders including dementia (ASHA, 2005a; 2005b; 2007). A starting point for each clinician is the establishment of competence in this area prior to serving persons with cognitive-communicative disorders related to dementia (ASHA, 2007). Avenues for forming the necessary levels of competence may include education prior to providing service, supervised or mentored clinical experiences, as well as participating in continuing professional development opportunities (ASHA, 2007). An SLP serving persons with dementia-related communication disorders must achieve competency in identification, assessment, and intervention (ASHA, 2005a).

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In addition, the areas of consultation and collaboration with other professionals and advocating for persons with dementia are important skills to develop (ASHA, 2015).

As clearly delineated by Hopper, Douglas, and Khayum (this issue), SLPs may utilize direct or indirect interventions for persons with dementia-related communication disorders. Direct interventions occur when SLPs provide services with patients individually or in groups in order "to maintain residual cognitive and communicative function and to prevent excessive response to disability and learned helplessness" (Mahendra, 2001, p. 292). Most direct intervention techniques depend on the benefits of repetition and active involvement during learning (Mahendra, 2001). Examples of direct treatments include spaced retrieval training or utilization of stimulation techniques such as priming (Bayles & Tomoeda, 2014). In contrast, indirect interventions do not involve direct therapy sessions, but utilize interventions that attempt to maximize the communicative and cognitive abilities of individuals with dementia-related communication disorders through training of caregivers, modifying the physical environment, and developing therapeutic routines and activities (Hopper, 2001). Examples of indirect treatment include linguistic modifications to facilitate communication (e.g., avoid sarcasm, reduce use of pronouns, etc.) and environmental modifications (e.g., improve lighting, decrease distractions; Bayles & Tomoeda, 2014; Hopper, 2001). According to Bayles and Tomoeda (2014) funding sources such as Medicare will pay for speech-language pathology services that establish a functional maintenance plan and/or provide effective training of caregivers.

Practicing SLPs serving persons with dementia-related communication disorders can clearly illuminate current practices and the pertinent issues they face during clinical practice. The purpose of this research endeavor was to answer the question: *What are the issues identified by SLPs who provide direct and indirect interventions to persons with dementia-related cognitive-communicative disorders?*

Methods

Participants

Convenience sampling was used to select the participants. Members of the ASHA Special Interest Groups (SIG) 2 Neurophysiology and Neurogenic Speech and Language Disorders and SIG 15 Gerontology were surveyed. These were the groups most likely serving this population, and the primary investigator was a member of both of the SIGs. The members of the SIGs are from across the United States and could also be international members of ASHA. The participants were practicing SLPs who have worked with persons with dementia-related communication disorders.

Procedures

A cross-sectional survey design was utilized. The study was approved by a Midwest University Institutional Review Board. The survey was developed after a careful review of the literature to determine pertinent issues (see Appendix A). An online survey was created using the Qualtrics survey program. A survey link was posted as a thread on each of the SIG's discussion boards and members of the SIG chose to participate by opening the link and answering survey questions. After a two week period, the survey was reposted on the discussion board of each SIG as reminder for those members who had not completed the survey.

Data Collection and Analysis

The survey data was processed by the university Information Technology department using the Qualtrics software system. Results were anonymous and the data was accessed by the reviewers within the Qualtrics system. Descriptive narrative was used to present the results of the survey.

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Results

Demographics

Fifty-eight participants completed the survey: 29% (25–35 years old [y.o.]); 15% (36–45 y.o.); 27% (46–55 y.o.); and 29% (56 years old or above). The largest majority of participants (45%) had worked as a certified SLP for over 21 years; 9% had worked for 16–21 years; 7% for 11–15 years; 24% for 1–5 years. Participants resided in the four geographic regions in fairly equal numbers: Northeast (24%); South (27%); Midwest (31%); and West (18%). There were no international participants.

Content Questions

The participants shared the direct interventions utilized for three severity levels which were comparable to the following Global Deterioration Scale (GDS) Levels, consistent with Hopper, Bayles, and Kim (2001): Early Stage [Mild] (GDS 3), Middle Stage [Moderate] (GDS 4-5), and Late Stage [Severe] (GDS 6-7). Table 1 contains the results organized from the top most utilized (combined often and sometimes responses) to the least most utilized.

Table 1. Direct Treatment Techniques: Frequency of Use at Mild, Moderate, and Severe Level of Impairment.

Intervention		Mild	Moderate	Severe
Specific Verbal Instruction	Often	27	35	32
	Sometimes	21	15	15
	Never	5	3	7
Cognitive Stimulation	Often	45	37	22
	Sometimes	6	12	20
	Never	4	5	12
Memory Wallet/Book	Often	30	30	18
	Sometimes	20	21	21
	Never	4	2	15
Spaced Retrieval	Often	29	27	13
	Sometimes	21	23	17
	Never	3	3	23
Errorless Learning	Often	18	23	18
	Sometimes	20	11	7
	Never	13	16	26
Visualization	Often	32	16	7
	Sometimes	11	20	9
	Never	7	9	30
Vanishing Cues	Often	22	9	3
	Sometimes	18	27	13
	Never	12	16	34

(continued)

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Technology Applications	Often	16	9	2
	Sometimes	25	24	12
	Never	12	19	38
Montessori	Often	6	8	10
	Sometimes	10	11	10
	Never	32	29	28
Audio-Assisted Memory Training	Often	5	1	1
	Sometimes	14	13	4
	Never	31	35	44
Preview Question Read State Test	Often	4	1	0
	Sometimes	3	4	2
	Never	42	43	46

Other interventions identified by participants included validation, reminiscence, conversation starter books, FOCUSED communication strategies, and rehearsal.

Further analysis of the responses was completed comparing the responses of the clinicians later in their career (21+ years), to mid-career (11 to 20 years), to early-career (1 to 10 years). The trend in the data indicated the most-frequently utilized direct treatment methods were consistent across years of clinical experience (see Table 1). This trend was also true for interventions used less frequently by SLPs working with individuals with dementia-based communication disorders. Overall, SLPs across all levels of experience reported using the same direct interventions.

Indirect treatment techniques were also identified regarding frequency of use at mild, moderate, and severe levels of impairment. There were more "other" responses for this area and they are summarized below in Table 2.

Table 2. Indirect Interventions: Frequency of Use for Mild, Moderate, and Severe Levels of Impairment.

Intervention		**Mild**	**Moderate**	**Severe**
Caregiver Training	Often	45	49	51
	Sometimes	9	4	2
	Never	1	0	0
Prospective Memory Aides	Often	40	32	15
	Sometimes	12	20	22
	Never	2	2	17
Linguistic Manipulations	Often	16	12	9
	Sometimes	21	24	15
	Never	12	12	24
Life History Video	Often	0	1	1
	Sometimes	4	4	5
	Never	46	45	44

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Additional approaches shared by the participants included environmental control of distractions, environmental interventions, FOCUSED communication strategies, signs in environment, and printed life history.

Specific environmental modifications were identified from a forced-choice list, however there are a wide range of additional modifications which might be considered, and that was reflected by additional comments from the participants (see Table 3).

Table 3. Skilled Environmental Modifications and SLP Involvement.

Intervention	Total	SLP	Other Professional	Joint Recommendation
Animal-assisted	34	17	19	8
Music	32	9	10	13
Toy/Doll	29	4	16	9
Aromatherapy	18	5	7	6
Eden Alternative	15	4	7	4

Additional environmental interventions participants wrote in: cognitive kits by stage of dementia; reducing irritating stimuli (4); meaningful enrichment. Collaboration with other individuals to implement indirect interventions was outlined in Table 4 from the most-to-least frequently utilized.

Table 4. Individuals With Whom SLPs Collaborated to Implement Indirect Interventions.

Individual(s)	%	No. responses
Family/Caregiver	98	54/55
Occupational Therapist	93	51/55
Client	89	49/55
Nurse	87	48/55
Physical Therapist	85	47/55
Aid or Assistant	85	47/55
Therapeutic Recreation	40	23/55
Neuropsychologist	13	7/55
Other (e.g., doctor, friend, volunteer)	11	6/55

The SLPs reported a variety of influences on the decision process to use direct or indirect interventions for persons with dementia-based communication disorders. The factors are presented in Table 5 in order of most to least influential.

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Table 5. Influential Factors When Choosing Direct and Indirect Interventions.

Answer		Response	%
Continuing education courses/conferences		45	82%
Peers/Co-workers		36	65%
Published Research evidence		34	62%
Client preference/request		33	60%
Practice documents from the profession (e.g. Preferred practice)		32	58%
Employer expectation (e.g. protocol; customary practice)		21	38%
Coursework		18	33%
Marketed materials promoting interventions		8	15%
Other		10	18%

Additional factors identified by participants included professional experience (5); ANCDS [Academy of Neurologic Communication Disorders and Sciences] Practice Guidelines; resource availability (2); graduate research; caregiver needs; observation; empathy; and time parameters related to Medicare billing codes.

Barriers and Facilitators to Intervention

The participants shared many insights into barriers and facilitators to intervention. The following results were generated in response to the open-ended question: *Share information on **barriers** and/or **facilitators** you experience when treating persons with dementia-based communication disorders.* Separate textboxes for barriers versus facilitators clearly delineated responses. There were many more statements generated for barriers (79) than for facilitators (10). Similar responses were grouped together and the results were presented in the order of frequency of responses.

Barriers Experienced When Treating Persons With Dementia-Based Communication Disorders.

Barriers Related to Caregivers (Family and Other Caregivers). Thirty-two statements pertained to caregiver related issues. Fifty-three percent of these responses specified lack of carryover of SLP interventions by either family or facility staff as a pertinent issue. “A barrier is poor follow through by nursing staff, managers and family to carry through on recommendations, even after a considerable amount of training and education.” Potential reasons for poor carryover included change in staff including shift changes or turnover of staff across time as well as ‘not buying in’ to interventions. Another participant shared “often the #1 barrier is the family. Not necessarily that they do not *want* to carry through on programs, but often they are too overwhelmed/tired/under-motivated/dysfunctional to do so.”

The next most prominent caregiver issue identified by eight participants was limited education of caregivers regarding dementia. One participant stated a barrier was “education and understanding of staff and caregivers. When treating individuals with dementia and expecting sustainable results it is crucial to have the buy in from the caregivers and staff.” Five participants used the term “ignorance” on issues related to dementia on the part of family or caregivers as a barrier they faced. Lack of education was clearly linked to the earlier barrier of lack of carryover. “The biggest barrier is lack of dementia education that caregivers who work in assisted living facilities have/are given. This continually is a problem especially when attempting carryover of a skill with a patient with dementia.” Staff turnover was a barrier to providing education just as it was for carryover. “Often the long-term care units have a rapidly changing staff requiring continuous training.” An additional barrier related to caregivers was described as denial of deficits “Dad is fine. It’s just normal aging.”

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Barriers Related to Implementation of Therapy. Twenty-three responses related to specific issues surrounding implementation of therapy. The most frequent responses (8) related to limited time to deliver effective intervention. Some SLPs felt the efficacy of specific approaches could be negatively affected, such as "low frequency of visits per week in home health limits success of spaced retrieval and cueing withdrawal; higher frequency (i.e., daily) would be best." Another SLP indicated the sense of being rushed with "no time to wait for responses or to engage a person in a social/functional interaction." In addition, some responses reflected limited time to collaborate when using an interdisciplinary model:

> Major barrier: Because of decreases in payment for our speech pathology services, there is no longer as much time available to collaborate with other persons. I work in home health so it takes a lot of time to get everyone—nurses, occupational therapists (OTs), physical therapists (PTs), licensed nursing assistants , family, etc. —on the same page.

Severity of dementia was described as a barrier. "I am very comfortable and confident in my skills for working with mild-moderate dementia but am just now starting to actively work with severe dementia for their quality of life. It's incredibly hard and I'm second guessing everything I'm doing." Additional issues were shared by two participants: limited materials, a living situation that was noisy/over-stimulating, and coping with behavioral issues. In addition "… most of the examples online and in ASHA are for very specific cases, 'easy' is how I'd qualify them. I'm looking for help for the residents with repetitive, agitated, argumentative, angry verbalizations who lash out physically at others."

Barriers Related to Funding/Billing Issues/Productivity/Documentation. Eleven participants shared issues related to billing, productivity, and documentation required during intervention for persons with dementia-based communication disorders.

> I say documentation because some of the most effective treatments are not quantitative and therefore very difficult to track for billing purposes. Without being able to track progress in the way Medicare thinks it should be done, the more likely it is that I will receive denials and ultimately be unable to treat the patient further.

In addition, "unrealistic productivity expectations" were specifically identified as a barrier, which appeared closely related to the restricted time parameters identified by other participants. Several participants' responses indicated emotionally laden responses to balancing payer expectations with providing effective intervention.

> Lots of pressure from knowing that payers are looking to deny whether it's based on the quality of my writing, the amount of sessions it takes to produce a result/benefit, and the codes I use. Thank you, thank you, thank you for addressing this and I look forward to your help!

Indirect treatments appeared especially affected in one participant's viewpoint:

> It is increasingly frustrating to know that the payers have no clue how valuable all of this indirect treatment time is. So much of the indirect treatment goes undone these days in favor of treating another patient in that time period.

Barriers Related to Collaboration With Other Professionals. Seven participants shared experiences related to working with other professionals. "The main barrier I encounter is other disciplines not understanding the positive impact SLP services can have." Two participants reported effects of "Stigma existing around the usefulness of direct therapy for persons with dementia within nursing and other clinicians." One participant directly addressed the lack of support from others as a barrier. "I need support from nursing and PT/ OT so that I understand and can see the tasks the way they want the individual or family member learn or be able to be cued to recall."

Barriers Identified by a Limited Number of Participants. Several participants expressed that physicians do not refer persons with dementia-based communication disorders for

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SLP services. “On multiple occasions I have had doctors deny requested referrals because a patient has a diagnosis of dementia and they believe there is nothing for it.” One SLP stated with added emphasis, “Doctors that do not refer to me are my biggest barrier.” Two respondents shared that language or cultural deficits could be barriers. “Aides do not speak standard American English, or if they do, it’s with an accent that residents cannot understand.” One SLP indicated poor marketing by her place of employment was a barrier.

Facilitators When Treating Persons with Dementia-Based Communication Disorders. As noted above, there were many more comments identifying barriers than facilitators. In fact there was one response identifying a facilitator to every eight responses identifying a barrier. The trend in the data is presented below with the more frequent responses reported first.

Supportive Family and/or Caregivers. Five participants stated supportive caregivers were very important. “Follow-through on the part of family/caregivers can be the greatest facilitator when done well.” “Love to work with facilitators who can make changes rapidly to initiate or support a continuation of an interaction.”

Other Facilitators Identified. Motivation of either the client or someone in the environment was identified as an important facilitator by two participants. The remaining facilitators were mentioned once: a supportive employer, effective collaboration with other professionals such as an OT, and freedom from strict productivity requirements.

Discussion

The methods were designed to include a sample from across the United States, and this was achieved, with each geographic region well represented. Most of the participants reported over 20 years of experience as a certified SLP; however, there was representation from an array of experience levels. The authors acknowledge this was a convenience sample and the results may not generalize to the population of SLPs whom are not members of SIG 2 or SIG 15.

Utilization of Direct Treatment Approaches

The top five most often utilized direct treatment approaches (specific verbal instruction, cognitive stimulation, memory wallet, spaced retrieval, and errorless learning) all appeared to have some current scientific evidence to support their use, which is one factor ASHA advocates clinicians consider (ASHA, 2005a, 2007). For instance, ASHA’s evidence base maps tool provides direct links to systematic reviews for the SLP to consult for external memory aids such as memory wallet intervention (Hopper et al., 2013) and for cognitive stimulation (Aguirre, Orrell, Spector, & Woods, 2013). Information on specific verbal instruction was also included in the Hopper et al. (2013) systematic review under the “General findings” link for the evidence base maps without a specific provided link for that intervention. In addition, evidence to support spaced retrieval training (Hopper et al., 2005) and errorless learning techniques (Piras, Borrella, Incoccia, & Carlesimo, 2011) can be located on the ASHA evidence base maps under the memory training link.

When examining the participants’ responses to years of certification and therapy procedures, results indicated that years of experience did not appear to impact the types of direct treatment which were incorporated into interventions. Additionally, the less-frequently used procedures were consistent across years of certification as an SLP. These results indicated consistency in implementation of direct treatment interventions by participants in this study. Further research would indicate if this pattern held true across a wider sample. Upon initial consideration of the results, more differences in the top five direct treatment interventions might have been expected across severity levels, especially from mild to severe. However, upon further reflection, a number of the techniques were a general descriptor of an intervention and the actual therapy objectives would be personalized to the level needed for the individual client; therefore, the uniformity of treatment choices does make intuitive sense. Further research on the differences of implementation of the most frequently used approaches would likely yield key differences in the manner in which an approach could be modified for use with mild, moderate, or severe levels of dementia.

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Utilization of Indirect Approaches

Caregiver training was definitively the indirect treatment technique used most often at all three levels of severity (45 to 51 participants chose this response as used "often"). The second most utilized indirect technique, use of prospective memory aids, declined in use as severity increased: mild (40); moderate (32); severe (15). Use of linguistic manipulations demonstrated the same pattern although not to the same degree: mild (16); moderate (12); severe (9). This pattern may have indicated clinicians changed the pattern of use of indirect interventions as the clients' dementia progressed and/or may have indicated that SLPs do not intervene as often with persons at the severe level of dementia.

Influences on Choosing Direct and Indirect Interventions. The process by which SLPs make decisions about matching specific treatment techniques to particular clients is important. According to ASHA (2007, p. 5),

> Each practitioner must evaluate his or her own experiences with preservice education, clinical practice, mentorship and supervision, and continuing professional development. As a whole, these experiences define the scope of competence for each individual. Speech-language pathologists may engage in only those aspects of the profession that are within their scope of competence.

The results of the survey were viewed within the framework of the evidence-based triangle which involves blending the three areas of (a) clinical expertise/expert opinion, (b) external scientific evidence, and (c) client/patient/caregiver values (ASHA, 2005a).

The participants shared reliance on continuing education, peers/coworkers, published research, evidence, and practice documents from ASHA as the four most influential factors in that order. The participants were encouraged to choose all responses that applied, and it was evident that the SLPs were influenced by a variety of sources of information when choosing direct and indirect interventions, rather than relying on just one method, which reflects integration of sources when making decisions about treatment. Three of the most influential factors reflected a single aspect of the evidence-based triangle: (a) peers/coworkers (relating to "clinical expertise/expert opinion"); (b) published research evidence (relating to "external scientific evidence"); and (c) client preference/requested (reflecting "client values"). It should be noted that "clinician expertise" was not provided as one of the choices in the survey and will be discussed during limitations, however some participants wrote in that response for "other." The most utilized factor, continuing education courses, could potentially address the three aspects of the evidence-based triangle by incorporating a blending of scientific evidence to support interventions, the clinical expertise of the presenter/s as well as specific examples of how client/caregiver perspectives might influence choice of interventions. However, continuing education that lacked one of these elements, or focused on a narrow range of treatment interventions may not be as effective at incorporating the principles of evidence-based practice.

Caregiver Involvement Appeared Crucial. The importance of involvement of caregivers, including both family and caregivers in a long-term care setting, was a prominent theme throughout analysis of the results. Caregiver training was described as the overwhelmingly most common indirect intervention utilized for each level of severity, and participants indicated this aspect was utilized nearly as much at a mild level as at a severe level. Nearly every participant indicated collaboration with family/caregiver as the individuals with whom they collaborated to implement indirect interventions.

Caregiver training by SLPs is within the profession's scope of practice and is specifically included in the contextual factors of the framework of the World Health Organization's International Classification of Functioning, Disability and Health (ASHA, 2007). Some scientific evidence is available to support the practice. Zientz et al. (2007) provided a systematic review of scientific evidence related to educating and training caregivers for persons with Alzheimer's disease. The content of caregiver training primarily consisted of three aspects: (a) education about dementia

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and the impact on communication; (b) verbal and nonverbal strategies to promote communication; and (c) opportunities for caregivers to practice the techniques. The open-ended responses in the current study indicated issues related to caregivers were the most frequent barriers experienced. However collaboration with caregivers, when working well, was also identified as a facilitator. Further research could help to delineate some key discussion points.

Were caregiver issues identified as the most common barrier simply because of the frequency of use? For instance, were there more chances to face barriers because it was utilized so often? Or, were barriers related to caregiver issues due to factors that could be addressed more effectively (e.g., improved SLP knowledge and skills; increased time allowed to work with caregivers)? Since the involvement of caregivers appeared to play a pivotal role for intervention with persons with dementia-based communication disorders, further exploration of this area appears warranted. Through which avenues are SLP students and practicing clinicians provided with resources and mentored experiences to improve knowledge and skills to effectively engage caregivers in the intervention process? Which avenues of training are the most effective? How might outcome measures in engaging caregivers effectively during intervention be developed and tracked across time?

Collaboration. The participants indicated collaboration is occurring with a variety of primary support personnel in the environment. Besides the almost unanimous response of collaborating with families/caregivers and with the client, a variety of other professions were identified as frequently collaborating with the SLP during implementation of indirect treatments. This practice resonates with ASHA's practice documents stating collaboration is optimal (ASHA, 2005b; ASHA 2015). Open-ended responses indicated barriers were identified with the collaborative process, specifically relating to limitations in time to do so, and some reluctance from other professionals to acknowledge an SLP's role in intervention with this population. A small number of participants stated the collaboration, especially with OT, was a facilitator.

Barriers Dominated the Experiences of SLPs. The fact that there was about an 8:1 ratio of barriers to facilitators identified bears consideration. It might be human nature to identify problems more than the positive aspects of a situation, however this was a great discrepancy in responses and may indicate there is much that could be done to pave the way for more effective intervention for persons with dementia-based communication disorders. This may involve both development of specific knowledge and skills by individual SLPs as well as advocacy in general by ASHA and by SLPs for the clients whom we serve, which as noted earlier are expectations outlined in ASHA practice documents (ASHA, 2005a; 2005b; 2015).

Limitations of the Study

The authors acknowledge the sample size was small and a convenience sample was utilized; however, rich data was collected about the current state of practice for the participating SLPs. The sample size (N=58) did not lend well to statistically significant quantitative analytics. This is considered a limitation of this study and would be a suggestion for further research. The descriptive analysis provided a cross-sectional view of the experiences of the participants which provided valuable information. Another potential weakness related to factors that influenced the decisions about which direct and indirect interventions to utilize. The question did not include "clinician expertise" as a choice. This was written in by three participants as "other" but it would have been valuable to have as a clearly stated choice so that all three parts of the evidence base triangle model were included. In addition, reminiscence therapy was inadvertently omitted from the survey, and while some participants wrote this procedure in as "other" it would have been optimal to include on the list of direct therapy techniques as a choice.

Suggested Future Research

The results of this study contributed the perspective of practicing SLPs on the issues related to interventions for dementia-based communication disorders. A future study could include SLPs who are not members of the ASHA SIG groups to obtain a more representative sample. A larger sample size would lend itself to statistical analysis of results. Some of the barriers and

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facilitators could be further explored particularly the most frequently identified barriers related to lack of carryover in the environment. Researchers have explored the issues related to caregiver education and training (Zientz et al., 2007); however, with the extent to which this area was identified as a barrier by the participants of the current study, more research and/or more dissemination of the information into the hands of practicing clinicians appears needed. In addition, seeking the viewpoint of the caregivers to discover why carryover was difficult from their perspective would provide insight into what would be optimal practices to improve carryover or possibly to help adjust expectations of SLPs to a realistic level. Information on requirements related to coding and billing such as provided by Mason-Baughman and Kinder (this issue) also appears a needed resource for practicing SLPs. Researchers could further explore outcomes of education efforts designed to improve knowledge and skills related to billing issues, productivity and documentation.

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Appendix A. Survey: Direct and Indirect Interventions for Persons With Dementia-Based Communication Disorders.

Operational definitions relevant to this survey:

Dementia-based communication disorders: "Individual with multiple cognitive deficits including short- and long- term memory impairment and at least one of the following: aphasia, apraxia, agnosia, and/or impaired executive functioning" (ASHA, 2005b, p. 1).

Direct intervention: "Intervention that requires direct treatment from a speech-language pathologist" (ASHA, 2005b, p. 3). For our purposes, this includes both direct intervention and working with the client present to set-up a care plan that will be carried out by others.

Indirect intervention: "Intervention through environmental modifications, development of therapeutic routines and activities, and caregiver training" (ASHA, 2005b, p. 3). For our purposes, indirect intervention includes caregiver training without client present, and could include direct interventions that started with the SLP but then transitioned to being carried out by someone in the environment.

Demographics:

1) What is your age?
   a. 25-35 years-old
   b. 36-45 years-old
   c. 46-55 years-old
   d. 56-65 years-old
   e. Other_____

2) How many years have you been certified to work as an SLP?
   a. 1-5 years
   b. 6-10 years
   c. 11-15 years
   d. 15-20 years
   e. 21 years+

3) In which region do you practice?
   a. **Northeast***(Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)*
   b. **South***(Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)*
   c. **Midwest***(Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)*
   d. **West***(Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)*
   e. **International**_____

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4) Indicate the interventions you utilize under the severity level. For the purposes of this survey, the severity levels can be considered as comparable to the following Global Deterioration Scale (GDS) Levels, consistent with (Hopper, Bayles & Kim, 2001): Early Stage [Mild] (GDS 3); Middle Stage [Moderate] (GDS 4-5); Late Stage [Severe] (GDS 6-7).

Direct Interventions	**Severity/How Often Utilized**		
Audio-assisted memory training	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Cognitive stimulation	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Errorless learning	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Memory wallet/Books	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Montessori methods	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Preview Question Read State Test (PQRST)	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Spaced retrieval	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Specific Verbal Instruction Strategy (e.g. prompt for steps to complete an activity of daily living)	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Technology applications	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never

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Vanishing cues	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Visualization	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Other	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Other	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Other	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Additional Comments: (Optional)			
Indirect Interventions	**Severity/How Often Utilized**		
Caregiver training	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Life history video	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Linguistic manipulations	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Prospective memory aides (used in the environment)	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Other	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never

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Other	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Other	Mild Often Sometimes Never	Moderate Often Sometimes Never	Severe Often Sometimes Never
Additional comments (Optional):			

5) Which of the following environmental modifications are used at your place/s of employment and indicate if you and/or another profession recommend the intervention?

Intervention	**SLP**	**Other Professionals**	**Joint recommendation**
Toy/doll intervention			
Animal-assisted			
Aromatherapy			
Eden alternative			
Music			
Other_____			
Other_____			
Other_____			

6) With which individuals do you collaborate to implement indirect interventions? (Indicate all that apply.)

   a. Client
   b. Nurses
   c. Aids or assistants (e.g., certified nursing assistant, therapy aid, home health aid)
   d. Occupational Therapists
   e. Physical Therapists
   f. Therapeutic Recreation
   g. Neuropsychologist
   h. Family/caregivers
   i. Other: _____

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7) What influences your utilization of direct or indirect interventions for persons with dementia-based communication disorders? (Indicate all that apply.)

   a. Coursework
   b. Continuing education courses/conferences
   c. Peers/Co-workers
   d. Published Research evidence
   e. Practice documents from the profession (e.g. Preferred practice)
   f. Employer expectation (e.g. protocol; customary practice)
   g. Marketed materials promoting interventions
   h. Client preference/request
   i. Other: _____
   j. Other: _____

8) Share information on **barriers** and/or **facilitators** you experience when treating persons with dementia-based communication disorders.

Barriers:
Facilitators:

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Direct and Indirect Interventions for Cognitive-Communication Disorders of Dementia

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Abstract

The dementia syndrome is characterized by cognitive and behavioral deficits that affect daily life functioning, including communication. Speech-language pathologists (SLPs) will see increased numbers of adults with dementia in the coming years, as the incidence and prevalence of diseases that cause dementia continue to grow. In this article, the authors provide an update on the syndrome of dementia and its most common cause, Alzheimer's disease. A framework for interventions is provided, along with a discussion of research evidence for specific treatment techniques. The article concludes with case studies of person-centered assessment and intervention for individuals with mild and moderate dementia severity.

Dementia is an urgent, international public health priority (World Health Organization [WHO], 2012). Worldwide, the prevalence of dementia has reached approximately 35 million cases; in the United States, an estimated 5 million individuals over the age of 65 are living with dementia (Hebert, Weuve, Scherr, & Evans, 2013). Incidence is likewise high, with 7.7 million new cases diagnosed annually across the globe, with almost 500,000 predicted in 2015 in the United States (Alzheimer's Association, 2015; WHO, 2012). Given the increasing burden of dementia on affected individuals, their families, and society, healthcare professionals have important roles to fulfill to meet the needs of this ever-growing number of older adults.

Speech-language pathologists (SLPs) are integral members of the healthcare team working with individuals who have dementia. In a recent survey, SLPs who worked with adults in healthcare settings indicated that 15% of their time was spent in the practice area of dementia compared to 16% and 8% in the areas of aphasia and traumatic brain injury, respectively (American Speech-Language-Hearing Association [ASHA], 2013). Thus, SLPs should be aware of the latest research related to dementia and its treatment. In this paper, the health condition of dementia and its primary cause, Alzheimer's disease (AD), will be reviewed with a focus on recent research on definitions and diagnosis. Then, direct and indirect cognitive-communication interventions will

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be discussed in the context of person-centered care. Finally, two case examples will be provided to illustrate clinical application of these treatment approaches.

Dementia and Alzheimer's Disease

In recent years, terminology and definitions of dementia have been revised. The National Institute on Aging and the Alzheimer's Association workgroup collaborated to revise diagnostic criteria for dementia due to AD that had been in use for 25 years (McKhann et al., 2011). Because dementia is a syndrome caused by a variety of diseases, the workgroup first proposed criteria for a diagnosis of "all-cause dementia," followed by criteria for "AD dementia," the most common form (Alzheimer's Association, 2015).

The core criteria for all-cause dementia include the presence of cognitive or behavioral symptoms that: (a) interfere with the ability to function at work or at usual activities, (b) represent a decline from previous levels of functioning and performing, and (c) are not explained by delirium or major psychiatric disorder (McKhann et al., 2011). The cognitive and behavioral impairment involves a minimum of two of the following specified domains: impaired ability to acquire and remember questions or conversations, impaired reasoning and handling of complex tasks and poor judgment, impaired visual-spatial abilities, impaired language functions, and changes in personality, behavior, or comportment (McKhann et al., 2011).

Consistent with the previous guidelines (McKhann et al., 1984), probable AD dementia is diagnosed when the individual presents with symptoms that meet the criteria for dementia and that developed insidiously and progressively worsened over time. New to this classification scheme is the description of typical as well as atypical presentations of AD dementia (Galton, Patterson, Xuereb, & Hodges, 2000; Mendez, Albert, Joshi, & Shapira, 2012). Specifically, McKhann et al. (2011) describe two categories of presentation of symptoms: (a) amnestic, in which the primary deficits are in learning and recall, and (b) nonamnestic, in which primary impairments are in language, visual-spatial or executive function abilities.

Although it is beyond the scope of this article to provide an in-depth coverage of different classifications of dementia, it may be of interest to SLPs to note that the term dementia has been subsumed within the diagnostic category of "major neurocognitive disorder" in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association [APA], 2013). The definition of major neurocognitive disorder is "largely congruent" (APA, 2013, p. 608) with dementia as defined by earlier versions of the DSM, and is consistent with McKhann et al.'s (2011) definition of all-cause dementia. As with all-cause dementia, a major neurocognitive disorder is expected to be coded or subtyped according to the presumed or known etiological subtype (i.e., AD, Lewy body disease, Vascular disease, and several other diseases, infections and disorders; APA, 2013).

The actual cause of AD continues to be the subject of intense study. The pathology of AD is well known and includes abnormal protein deposits in the form of beta-amyloid (Aβ) plaques outside of neurons and neurofibrillary tangles inside of neurons (Alzheimer's Association, 2015). These changes presumably interfere with neuronal function and contribute to neurodegeneration (cell death, general brain atrophy; Jack et al., 2010). The prevailing view, referred to as the amyloid cascade hypothesis, is that deposition of Aβ is the causative agent of AD and that other lesions (tangles, cell loss) follow directly from this deposition (Holtzman, Morris, & Goate, 2011). This hypothesis is not universally accepted and is undergoing refinement to account for evidence that, in fact, tangles sometimes precede the deposition of Aβ into plaques (Holtzman et al., 2011).

Historically, AD has been defined as a dual clinical-pathological entity (McKhann et al., 1984) specifically, a progressive brain disease marked by characteristic neuropathology that manifests as dementia. However, it has become clear that the clinical-pathological correspondence is not always consistent, and extensive AD pathology can be present in the brains of people who exhibit no obvious symptoms (Jack et al., 2010). Further, scientists now recognize that AD begins to

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develop decades before the earliest clinical symptoms occur (Villemagne et al., 2013). Increasingly, then, the focus is on the pre-symptomatic and prodromal stages of AD, as identified using in vivo measurement of biomarkers that indicate specific features of AD pathology (Jack et al., 2010). Thus, McKhann et al. (2011) recommend that AD be considered a slowly progressive brain disease that begins well before clinical symptoms emerge.

Although much progress is being made in the early detection of AD and identification of treatment targets to prevent progression of the disease, millions of Americans are living with dementia now and require care. In the absence of disease-modifying agents (Alzheimer's Association, 2015), care is focused on non-pharmacological treatments that compensate for cognitive and behavioral deficits and maximize communicative function (Bayles & Tomoeda, 2013). WHO (2012) outlines the principal goals for dementia care as involving early diagnosis, optimization of physical health, cognition, activity, and well-being, detecting and treating behavioral and psychological symptoms, and providing information and long-term support to caregivers. As part of the healthcare team, SLPs can help to address such goals within their plans of treatment by using direct and indirect interventions that are person-centered and evidence-based.

SLP Interventions for People With Dementia

Clark (1995) identified two general types of interventions for individuals with dementia. Direct interventions are ones in which SLPs work with clients, individually or in groups, to do the following: (a) maintain residual communication strengths and prevent excess disability, (b) provide clients with skills training involving the use of external communication and memory aids for enhancing their conversational exchanges, and (c) assist them in maintaining their daily appointments and schedules and in recalling pertinent personal information. Several types of direct intervention strategies have been shown to produce positive outcomes in cognition and communication of individuals with dementia (Hopper et al., 2013), including spaced-retrieval training, errorless learning strategies, and the use of written and graphic cues in the form of memory wallets and books (Bourgeois, 2013; Egan, Bérubé, Racine, Leonard, & Rochon, 2010), among others.

Indirect interventions are focused on the physical, social, and attitudinal environment (WHO, 2001) of the person with dementia. The indirect approach as described by Clark (1995) and summarized in Hopper (2001) involves care partner training in effective communication strategies, as well as methods to promote communication opportunities for persons with dementia by modifying the physical and psychosocial environment. Research evidence to support care partner training in communication is available, and several structured programs have been associated with positive outcomes. Examples of such interventions include caregiver communication training programs such as the FOCUSED program (Ripich, Wykle, & Niles, 1995) and more recently, the TANDEM program (Haberstroh, Neumeyer, Krause, Franzmann, & Pantel, 2011). Based on a recent systematic review, Eggenberger, Heimerl, and Bennett (2013) concluded that communication skills training for caregivers of individuals with dementia care significantly improves the wellbeing of people with dementia and increases positive interactions in various care settings. Relatively less attention has been paid to the effect of the physical environment on cognition and communication, although the literature base is growing.

Brush, Calkins, Bruce, and Sanford (2012) have developed an assessment protocol called the *Environment and Communication Assessment Toolkit for Dementia Care* (*ECAT*), to guide clinicians in evaluating potential barriers and facilitators in the physical and social environment of individuals with dementia. The ECAT helps clinicians to make explicit the need to consider the person-environment interaction in any intervention program, and yields assessment information that can be used to develop individualized environmental modifications to support communication (Brush, Sanford, Fleder, Bruce, & Calkins, 2011).

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Indirect and direct intervention programs are often used together to maximize outcomes for people with dementia. For any intervention program to be successful, it has to be meaningful, personally-relevant, and culturally appropriate, that is, person-centered. Morgan and Yoder (2012) define person-centered care as:

> a holistic (bio-psychosocial-spiritual) approach to delivering care that is respectful and individualized, allowing negotiation of care, and offering choice through a therapeutic relationship where persons are empowered to be involved in health decisions at whatever level is desired by that individual. (p. 8)

In the case examples that follow, the second and third authors of this paper implemented treatment programs that combined direct and indirect approaches, each tailored to the specific needs and abilities of the client. A key component of each program was the negotiation of the techniques with the clients, who varied in their dementia severity, and their care partners.

Case 1

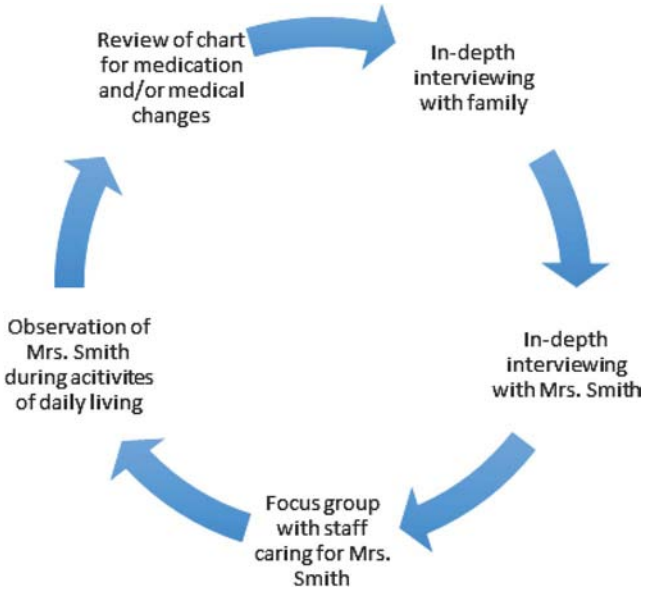
Background

Mrs. Smith was an 82-year-old female with a diagnosis of Alzheimer's disease (moderate dementia). She was fully ambulatory; however, she had recently become socially withdrawn. She had decreased or ceased participation in activities in her long-term care (LTC) environment. She was referred to speech-language pathology because of this decrease in social participation and overall communication skills. Further, she had been repeatedly pressing her call button to ask staff, "Did my son call?" This repetitive behavior had been troublesome for the staff at the LTC facility, and these behaviors were reportedly a significant change for Mrs. Smith.

Person-Centered Assessment

Figure 1 represents person-centered assessment procedures the clinician used with Mrs. Smith.

Figure 1. Person-Centered Assessment Approach.



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Review of Medical Chart for Medication and/or Medical Changes. A first step in person-centered assessment is a thorough review of the medical chart. In the case of Mrs. Smith, no significant medical or medication changes were noted. However, clinical practitioners should be aware of medications that may negatively affect cognitive function for individuals with dementia. These medications include, but are not limited to anti-cholinergic medications (Elavil, Paxil, Benadryl, Demerol, Mellarill, Risperdal) and anti-anxiety medications (Valium, Xanax). A consultation with the facility pharmacist is often helpful and necessary.

In-Depth Interviewing With Family. Fortunately, Mrs. Smith had two daughters available for an interview. Using the *Personal Interest Inventory* as a guide during the interview process (Bourgeois, 2007), several important areas of knowledge about Mrs. Smith were discovered. For example, Mrs. Smith enjoyed singing, getting her nails done, exercising, and especially, photography. Per Mrs. Smith's daughters, Mrs. Smith was always "on the go," and never content to be "sitting around." In situations when residents do not have family members available, SLPs should proceed to other steps in the assessment or seek out surrogates who may provide similar information (e.g., close friends).

In-Depth Interviewing With Mrs. Smith. Again, the clinician used the *Personal Interest Inventory* (Bourgeois, 2007) as a guide in the interview. During an exploration of her interests, Mrs. Smith told the clinician that she enjoyed taking pictures. Mrs. Smith's picture taking device was an old cellular phone. Unfortunately, at the time of the interview, this phone was no longer working properly, and it also appeared to be at its capacity for storage of photographs. Throughout the course of the interview, Mrs. Smith also reported, "I don't have a lot of friends anymore," and "I have a lot of extra time." During the interview, Mrs. Smith's vision was also screened according to the *Type Size Reading Test* of the *ECAT* (Brush et al., 2012). Results showed that Mrs. Smith was able to read 48-point type font when presented with appropriate black-white contrast.

Focus Group With Staff Caring for Mrs. Smith. The clinician conducted a focus group with three certified nursing assistants (CNAs) who regularly provided care to Mrs. Smith. Portions of the *ECAT* (Brush et al., 2012) were incorporated into the focus group interview. For example, the CNAs were asked to rate Mrs. Smith's independence with several daily activities such as toileting, dressing, eating, showering, and engagement in social activities. Results of this focus group indicated that Mrs. Smith demonstrated difficulty with appropriate use of toiletries for grooming, and had trouble with the sequence of tasks for dressing. She would often wear two or three pairs of underwear or forget to put on her bra.

Observation of Mrs. Smith During Activities of Daily Living. The final portion of this person-centered assessment involved observation of Mrs. Smith during meals and throughout various portions of her day. Mrs. Smith ate her meals in the dining room; however, she was quiet and withdrawn. She retreated quickly to her room after meals were complete. Mrs. Smith also declined to participate in activities such as bingo, coffee hour, and kickball.

Person-Centered Intervention

An advantage of person-centered assessment is that it provides the foundation for person-centered interventions. Figure 2 depicts the treatment approach for Mrs. Smith. In this case, the overarching goal was to increase quality of life and communication skills. The goal was addressed via a 2-pronged approach of meaningful activities and written cues.

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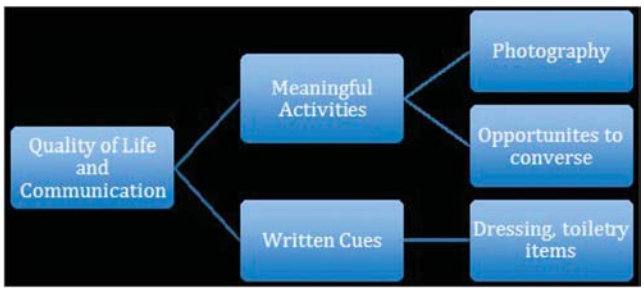
Figure 2. Treatment Approach.



Because Mrs. Smith loved photography, she became the "Facility Photographer." She was provided a simple digital camera with written cues for operation (see Figure 3). The digital camera was also painted with nail polish to highlight only the needed buttons. As opposed to directly participating in bingo, coffee hour, and kickball, Mrs. Smith participated indirectly by taking pictures of bingo, coffee hour, and kickball. All residents who were photographed had provided permission for their photographs to be taken, and this activity also provided Mrs. Smith with numerous opportunities for conversational interaction. Both staff and other residents were supportive of Mrs. Smith's new role.

Figure 3. Written Cues for Camera Operation.

Written cues were incorporated to facilitate independent dressing and use of toiletry items. Clear, large-font labels were provided on all of Mrs. Smith's toiletry items, and a written cue was also provided for dressing. As per the CNAs' report, Mrs. Smith was able to dress and use toiletry items appropriately with minimal prompting to attend to the written cues. Table 1 provides additional documentation for this treatment plan according to Medicare part B guidelines.

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Table 1. Documentation According to Medicare Part B Guidelines.

Documentation Piece	Documentation
Long-term goal	The client will increase communication and quality of life by participating in naturalistic, meaningful activities and communication opportunities, and completing ADLs independently or with minimal cues.
Short-term goal 1	The client will attend one social activity per day and initiate conversation 3× during activity given minimal verbal cues from staff.
Short-term goal 2	The client will sequence 5/5 steps for dressing with the use of written cueing system ×3 weekly per CNA report.
Prior Level of Function	Documented decline in participation in group activities
Statement of Risk Related to Safety	Resident at significant risk for safety concerns due to increased agitation and restlessness
Statement of Risk Related to Quality of Life	Resident at significant risk for decreased quality of life because of new onset social isolation
Statement of Reasonable Expectation of Improvement	Multiple scientific studies support the use of graphic cueing systems and meaningful activities to increase independence and quality of life and decrease negative behaviors in residents with dementia
Justification for Length of Treatment time	The resident will require at least 4 sessions of 30-minute treatment sessions with direct training of CNA for appropriate generalization and transfer of techniques.
Response to Treatment	Goals achieved. Resident increased both social participation and independence in ADLs by 50% or greater since initiation of treatment.

Person-Centered Outcomes

Mrs. Smith increased both socialization and dressing targets by at least 50% by the end of the 4-week training period. Staff were taught to sustain her photography by completing maintenance checks on the camera, and placing it in the same location in her room after every use. Staff were also taught to download photos from the storage card intermittently, thus ensuring adequate storage for new photographs. Additionally, staff were coached regarding how to maintain written labels for toiletries and dressing, including how to make new labels with appropriate cues if the current ones deteriorated over time. A set of "back-up" cues was also provided in the case that the labeled cues were lost. Overall results were positive with respect to Mrs. Smith's social participation and well-being.

Case 2

Background

Mrs. Brown was a 69-year-old female with a recent diagnosis of dementia of the Alzheimer's type (mild dementia). Her neurologist referred her to speech-language pathology for in-home cognitive treatment by her neurologist. Mrs. Brown was a retired nurse practitioner with a PhD in nursing and taught for many years at a local university. At the time of the referral, she lived at home with her husband, who continued to work full-time as an attorney.

Person-Centered Assessment

The following areas were targeted during Mrs. Brown's assessment: review of neurology work-up, an in-depth interview with Mrs. Brown and her spouse, assessment of the environment, and collaboration with occupational therapy. The assessment focused upon identifying how Mrs.

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Brown's deficits were affecting her daily functioning and limiting her from participating in activities that were meaningful to her.

Review of Neurology Work-Up. A review of Mrs. Brown's recent visit with her behavioral neurologist was helpful in obtaining a background into her medical history, personal history, and neuropsychological assessment results that highlighted cognitive strengths and weaknesses. The neurology notes also included information on her medications as well as other disciplines involved in Mrs. Brown's care, including social work, neuropsychology, and psychiatry. A multidisciplinary approach to dementia care, with frequent collaboration between healthcare professionals, is essential to approach the individual's problems holistically to ensure that an appropriate balance of pharmacological and non-pharmacological interventions is provided.

Relevant aspects of Mrs. Brown's medical history included depression and anxiety, which were being managed through regular appointments with a psychiatrist and the medication Alprazolam. Results from recent neuropsychological testing indicated a moderate amnestic syndrome with additional impairments in visual-spatial processing.

In-Depth Interviewing With Mrs. Brown and Her Spouse. The SLP began the evaluation by explaining the purpose of cognitive treatment for individuals suffering from Alzheimer's dementia, and how cognitive re-training, in addition to the use of compensatory strategies and visual memory aids could help to increase independence in daily life. During this conversation, the SLP noted that Mrs. Brown had fair insight into her diagnosis and memory deficits. Thus, the SLP asked Mrs. Brown to describe what frustrated her most on a daily basis. Mrs. Brown complained of increased difficulty remembering names of people and places during conversation, in addition to having a hard time planning and preparing the evening meals. She also reported difficulty with recalling recent conversations and events, and if she had completed a particular task. Mrs. Brown's spouse agreed with her assessment and added that his wife frequently misplaced important objects around the home and had difficulty managing the daily schedule using her iPod.

The *Personal Interest Inventory* was used as a guide during the interview process (Bourgeois, 2007) to help the SLP focus the goals around Mrs. Brown's interests and desired activities, in addition to learning more about her family, friends, and support network. The inventory revealed that she enjoyed gardening, exercising, and cooking. She also completed all of the household chores on a weekly basis. She continued to drive locally to church activities, to meet friends for lunch, and to exercise at the gym. In terms of social support networks, Mrs. Brown had interactions with friends from church and long-distance interactions by phone with a group of friends and her two sons.

Environmental Assessment. The SLP assessed specific activities of daily living (ADL) and environmental variables that might have an effect on communication. Barriers to each ADL are explicitly stated below each variable as follows:

Schedule Management. Mrs. Brown used her iPod, synced with her husband's iPhone, to manage her schedule. During the assessment, she was able to identify 3/4 of her upcoming appointments, but could not enter her own appointments, instead leaving notes for her husband to enter them for her. Although she had traditionally used a wall calendar, she liked using the iPod for schedule management. She also had a difficult time identifying the day and date and had no consistent place to find the orientation information.

- Barriers to using the iPod for schedule management were identified:
    - Mrs. Brown often misplaced the iPod.
    - Visual-spatial deficits made it difficult for Mrs. Brown to easily navigate through the iPod calendar.
    - Mrs. Brown was unable to enter her own appointments without cueing and had to rely on her spouse for appointment input.

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Medication Management. Mrs. Brown used a pill organizer kept in her upstairs bathroom and received assistance from her spouse to pre-fill the medications once a week. She independently took her pills in the morning and evening. She and her husband reported that she occasionally forgot to take her pills when her normal routine was interrupted.

- Barriers for current medication system were identified:
  - Decreased orientation to day/date increased risk of incorrectly using pill organizer
  - No reminder system in place

Locating Important Items. Mrs. Brown's home was organized and clean. The items she most frequently misplaced were her glasses, wallet, iPod, and keys.

- Barriers for locating important objects:
  - Visual-spatial deficits negatively affected her perception
  - No consistent locations designated for important objects
  - Large home with three floors

Grocery Shopping and Meal Prep. Mrs. Brown shopped for groceries with her spouse each weekend at several stores. She prepared the evening meal each night as she had for years, but stated that this activity had become more difficult. She reported that she sometimes bought duplicate items that she already had at home or she would forget what items she needed. Mrs. Brown stated that she was having increased difficulty with the preparation of the meals each day (i.e., reading the recipe, sequencing the steps, locating food items, and using the kitchen timer).

- Barriers to shopping and meal prep:
  - Difficulty identifying and planning meals to prepare
  - Difficulty creating a grocery list, as she was unsure what food items were needed
  - Problems locating food items in her refrigerator and pantry; organization was needed
  - Problems operating technological devices, including the timer on her stove, which was small and had dials with poor contrast to the surrounding environment
  - Difficulty with multi-tasking to prepare the meals

Collaboration With Occupational Therapy. The SLP made an immediate referral to an occupational therapist (OT) following the evaluation, to address strategies for visual-spatial deficits and meal preparation. The OT and SLP collaborated throughout the remainder of the interventions to identify and support helpful strategies.

Additional Assessment Procedures. During conversation, the SLP observed that Mrs. Brown had a mild anomia, which affected her ability to retrieve proper nouns and low frequency words during conversation. She recalled the names of 5/7 people from her church and 3/5 of her favorite restaurants. She could often describe people and places and occasionally used circumlocution as a strategy to compensate for her anomia; for example, she described a favorite restaurant (Panera Bread) as "the soup place over by the mall." Although her anomia did not greatly affect her overall communication ability, Mrs. Brown found it frustrating.

The SLP also assessed Mrs. Brown's ability to read and understand graphic cues during a subsequent session. The clinician presented different font sizes at the word and phrase levels on a black/white contrast. It was determined that font size 18 with increased spacing facilitated Mrs. Brown's comprehension of the graphic cues.

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Person-Centered Intervention

The clinician identified the treatment goals in collaboration with the client and her husband, with personally relevant stimuli integrated into all of the treatment activities. The long-term goal was to increase Mrs. Brown's safety and independence and her ability to participate in meaningful, purposeful activities in the home environment and around the (Table 2). The use of electronic aids, in addition to graphic cueing aids, were essential to helping Mrs. Brown compensate for her deficits to continue managing her daily schedule and household activities, in addition to communicating more easily with family and friends. Mrs. Brown's spouse was unable to attend all of the follow-up sessions because of his full-time job, but he came to approximately 25% of the sessions; the SLP left a written note after each session, explaining strategies targeted and any additional recommendations. The following strategies were recommended for each area of intervention:

Table 2. Documentation According to Medicare Part B Guidelines.

Documentation Piece	Documentation
Long-term goal	The client will increase communication, quality of life, safety, and independence through use of graphic cueing aids and minimal assistance from spouse to manage schedule, medications, meal preparation and to participate in meaningful activities.
Short-term goal 1	The client will retrieve 9/10 important names and places in response to open-ended questions with use of a communication wallet, given minimal verbal cues, to increase ability to participate in daily conversations with spouse and friends.
Short-term goal 2	The client will recall the correct date and 3/3 daily events/tasks/ conversations with 100% accuracy, using schedule board and large display clock, × 2 consecutive sessions to increase schedule management.
Short-term goal 3	The client will take medications with use of an automated pill dispenser 2×/daily with 100% accuracy, × 7 consecutive days, to increase medication management.
Short-term goal 4	The client will locate 3/3 functional objects around the home with use of organizational strategies & visual memory aids, given minimal verbal cues, × 2 consecutive sessions.
Short-term goal 5	The client will plan and prepare 5/5 evening meals with use of grocery shopping aid and meal planner aid, given minimal verbal cues from spouse.
Prior Level of Function	Documented decline in episodic memory and visual-spatial deficits, affecting scheduling, medication, and meal management
Statement of Risk Related to Safety	Client at significant risk for safety because of decreased ability to manage medications and schedule, and to safely prepare meals while her spouse is at work
Statement of Risk Related to Quality of Life	Client at significant risk for decreased quality of life because of a loss of independence and ability to participate in daily activities that she finds purposeful
Statement of Reasonable Expectation of Improvement	Multiple scientific studies support the use of graphic cueing systems and meaningful activities to increase independence and quality of life and decrease negative behaviors in individuals with dementia

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Justification for Length of Treatment time	The client will require at least 8 sessions, 45-60-minutes in length, with direct training of client's spouse for appropriate generalization and transfer of techniques.
Response to Treatment	Client achieved 4/5 goals. Client has increased ability to manage schedule, medications, and meal preparation more independently with use of electronic/graphic cueing aids, and has improved ability to communicate with family and friends using communication aids.

Functional Communication for Daily Conversations. The SLP taught Mrs. Brown's spouse how to appropriately cue her to utilize semantic circumlocution during conversation, and created a communication wallet and 8×11 inch communication board targeting personally relevant vocabulary words (see Figure 4). Mrs. Brown carried the wallet in her purse. The communication board was laminated and kept on the kitchen counter.

Figure 4. Personalized Communication Board.

Schedule Management. The SLP recommended the following items to assist with scheduling:

- Purchase of a large clock displaying time, day, date, and year;
- Use of a large dry erase board to record daily reminders, task completion, upcoming events; and
- Use of a wall calendar instead of iPod for schedule management (after feedback from the OT that the client was unable to use a iPod independently to input appointments).

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Medication Management. The clinicians recommended one of two options: (1) Purchase of an automatic pill dispenser; or (2) Spouse to directly supervise pill taking in the morning and evening.

Locating Important Items. The clinicians recommended that Mrs. Brown wear glasses on a chain, and use established locations for keys, iPod, and wallet, with use of visual memory aids to remind the client of target locations.

Meal Preparation. The OT and SLP created a personalized "grocery list" visual aid, listing all items typically needed at the grocery store each week (see Table 3). Mrs. Brown and her spouse laminated the aid and placed it in their car; the aid was used each weekend when they went grocery shopping together. The following strategies were also used:

- A "Meal Planner" visual aid, consisting of each day of the week with space to write each meal. The aid was placed next to the dry-erase board in kitchen.
- An organizational system for pantry with graphic cues for each food category
- Instructions to Mrs. Brown to set out and measure all ingredients prior to cooking.
- Routine of starting with ingredients on left side of counter and moving to the right side of counter after completion
- Purchase of a simple kitchen timer (rather than stove timer)

Table 3. Personalized Grocery List Aid.

Pet Supplies	**Grains**
• Cat litter	• Cereal
• Cat food	• Bread
Other	• Hotdog buns
• Cards	• Hamburger buns
Dairy & Juices	**Meats/Seafood**
• Skim milk	• Hamburger
• Butter	• Steak
• Margarine spread	• Breakfast Sausage
• Cheese	• Bacon
• Cream	• Italian Sausage
• Eggs	• Chicken
• Orange Juice	• Turkey
• Tomato juice	• Salmon
• Broth	• Roast (& vegetables)
Grilling & Smoking	• Corned beef brisket
• Cedar Boards	Stuffed:
• Wood for smoking	• Pork chops

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Pastries	• Salmon
• Coffee cake	• Chicken breasts
Candy	• Ham
• Chocolate!	**Vegetables**
Frozen Foods	• Green beans
• Vegetables	• Carrots
• Frozen Dinners	• Broccoli
• Texas Toast	• Cauliflower
Canned Goods	• Peapods
• Baked beans	• Tomatoes
• Coffee	• Potatoes
• Jam	• Onions
• Tomato paste	• Split peas
• Peanut Butter	• Cabbage
• Kidney beans for chili	• Garlic
Baking Supplies	**Fruit**
• Sugar	• Oranges
• Flour	• Apples
• Brown sugar	• Bananas
• Powdered sugar	**Cleaning Supplies**
• Chocolate chips	• Laundry Detergent
• Cocoa	• TB Cleaner
• Vanilla	• Glass Cleaner
	• Shower spray
	• Hand soap
	• DW Soap

Person-Centered Outcomes

At the end of treatment, Mrs. Brown met 4/5 goals and demonstrated increased ability to participate in conversations more independently, manage her daily schedule and medications, and prepare meals:

Communication. Goal met: Mrs. Brown was able to use semantic circumlocution or referred to communication aids to successfully retrieve proper nouns/low frequency words in conversation, given minimal verbal cues to initiate use of the communication aids.

Schedule Management. Goal met: Mrs. Brown indicated that she wanted to continue to use the iPod to manage her daily schedule, although this device was difficult for her to operate. The clinicians recommended that she use a wall calendar in addition to the iPod to manage her appointments. Mrs. Brown demonstrated effective use of the schedule board, wall calendar, and

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clock displaying time and date to manage schedule with >90% accuracy, given minimal assistance from her spouse.

Medication Management. Goal met: Mrs. Brown managed her daily medications independently with use of an automated pill dispenser, with >90% accuracy.

Locating Important Items. Goal not met: Mrs. Brown continued to frequently misplace objects around the home environment. She was reluctant to place visual memory aids on the walls/counters of her home to remind her where to consistently place important objects, resulting in poor carryover. She was also irritated by the neck chain for her eye glasses and quickly stopped using it. Mrs. Brown's large house also exacerbated the problem, as it was easy to misplace items as she moved about the house each day.

Meal Preparation. Goal met: Mrs. Brown, with minimal cues from her spouse, successfully planned and prepared evening meals with use of visual memory aids and strategies recommended by the OT. She also reported that she and her spouse started grilling out and making crock pot meals several nights a week to decrease the number of nights that she had to prepare the entire meal on her own.

Summary of Cases

In both cases, the combination of evidence-based direct and indirect interventions facilitated communication, the ability to complete ADLs, and quality of life for two individuals with dementia. The clinicians demonstrated that functional, meaningful activities could be implemented within a framework that was measurable and reimbursable.

Conclusion

Clark (1995) states that:

> While there is no hope of recovery from Alzheimer's disease and while the clinical course is progressive, persons with AD ask only that their remaining life have meaning, by participating as actively as possible in life's events and for as long as possible. (p. 47)

Twenty years ago, when Lynne Clark wrote these words, the field of cognitive-communication interventions for dementia was in its infancy. Now, a burgeoning body of research evidence is available to support interventions that promote cognition and communication of individuals with dementia. As we look to the next decade, the goals for our profession will be to continue to study the effectiveness of such approaches across multiple contexts and throughout the continuum of dementia severity, from the earliest stages of diagnosis through to end-of-life. Communication is the cornerstone of human connection and meaningful relationships; SLPs, then, have much to contribute in helping individuals with dementia to participate as actively as possible in life's events, for as long as possible.

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Dementia Management: A Practice Update for Speech-Language Pathologists

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Abstract

Most clinicians working with older adults have assessed and treated patients with cognitive-communicative deficits associated with dementia. Dementia management can be challenging at times, even for the most seasoned clinician. This article will provide a framework for dementia management focusing on assessment, treatment, and documentation to ensure that speech-language pathology services are reimbursable by meeting Medicare's definition of reasonable and necessary services as set forth by the Medicare Benefit Policy Manual. The goal of sharing this information is to help clinicians shape management programs to meet the needs of their patients with dementia and ensure compliance with current healthcare regulations.

Those working in the field of medical speech-language pathology know that the setting is dynamic. Staying abreast of changes in healthcare regulations, coding, documentation requirements, and new research can be challenging; and despite all of these changes, clinicians are being asked to work more efficiently in medical settings. The goal of this article is to review some basic information on dementia management structure and share current information on evidence-based practices and regulatory issues to help clinicians practice patient-centered care when working with adults with dementia.

Dementia management encompasses the assessment, treatment, and documentation of services related to the cognitive-communicative and feeding/swallowing deficits associated with dementia. Dementia management services, like all skilled services provided by the speech-language pathologist (SLP), need to be reasonable, necessary, and evidence-based. Skilled services need to be both effective and specific enough to treat the individual patient's condition. In addition, the services need to be complex and sophisticated; an appropriate medical diagnosis is required to support the services; and the frequency and duration of services must be appropriate (CMS, 2015, Section 220.2). This article is going to focus only on the cognitive-communicative aspects of dementia management by discussing the structure of assessment and evaluation, development of treatment plan, implementation of treatment plan, and documentation in more detail.

Assessment and Evaluation

The initial assessment is conducted by the SLP in order to (a) establish baseline levels of function in comparison to prior levels of function (i.e., the level of function prior to functional decline or change); (b) set functional, measureable and realistic short-term objectives and long-term goal or goals; and (c) clarify whether interventions will be restorative in nature, maintenance-based in

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nature or both. Methods for obtaining baseline function should include objective or subjective baseline diagnostic testing (standardized or non-standardized) followed by interpretation of test results and clinical findings (American Speech-Language-Hearing Association [ASHA], n.d.-b). Goals should not be created for areas which do not have documented baseline measures; hence, "did not test" or "will not be addressed during plan of care" should not be used for target areas. Establishment of prior level of function is a vital component of the assessment as the patients' prior level of function refers to their functional level of independence prior to onset of decline which necessitated need for skilled therapy screening. The difference between baseline and prior level of function areas can help with clinical decision-making related to frequency and duration of services, (i.e., greater levels of change may require restorative interventions at greater levels of intensity when compared to smaller changes).

Documentation

Evidenced-based practices should be used in treatment and goals should be functional, measurable, and achievable for each patient based on evaluation results and progress with skilled services. Long-term goals should reflect the highest level of desired function anticipated upon discharge, and in most cases, will be reflective of patient's prior level of function. Short-term goals are the stepping stones, targeted specific areas that are used to increase overall function in order to achieve the long-term goals. Goals should be objective and may include a percentile of accuracy or success over a number of trials. Levels of cueing should be clearly defined in the goals. Please refer to the example:

> *Mr. Jones will demonstrate adequate safety awareness while ambulating 90% of the time with 25% verbal cues from trained caregivers and 100% use of visual signage cues in order to reduce risks for falls and maintain highest level of functional independence.*

While some may question the high level of specificity of the example goal, the authors' clinical experiences suggest that Medicare prefers this level of specificity. The skilled goal of the above example is to increase safety awareness due to the cognitive-communicative deficits associated with dementia with the functional outcome related to ambulation safety.

Development of the Treatment Plan

Determining Frequency and Duration of Treatment

Clinical reasoning for establishment of an appropriate frequency and duration of treatment should be individualized based on the patient's specific needs as determined during the assessment process. The frequency refers to the number of times in a week the type of treatment is provided, and duration is the number of weeks, or the number of treatment sessions, that the service is provided. This could also be expressed as number of sessions over a certain time frame such as 30 visits total in 60 days. This allows the therapist to treat at appropriate frequency and taper if deemed clinically appropriate and recommended per the Medicare Benefit Policy Manual in order to promote functional carryover of newly learned skills achieved during skilled services. For example, a clinician may initiate care t 4 times a week when providing evidenced-based spaced retrieval therapy to an individual in the early stages of dementia in order to retain the safety steps for sequencing an activity of daily living task and then tapper interventions to 2 times a week in order to assess carry over and mastery of skills.

Determining Treatment Structure

The Medicare Benefit Policy Manual requires that clinicians clarify on the evaluation whether therapy services are anticipated to be maintenance-based or rehabilitative/restorative in nature. These programs should not be confused with restorative nursing programs or functional maintenance programs which are carried out by non-skilled professionals. Restorative therapy includes skilled services designed to address recovery or improvement of function and restoration

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to a previous level of health and well-being (i.e., prior level of function) when possible. Documentation for plans which are restorative in nature should describe objective measurements which, when compared, show improvements in function, decrease in severity, or rationalization for an optimistic outlook to justify continued treatment (CMS, 2015, Section 220). Maintenance-based skilled services are those designed to slow or prevent a decline in function (CMS, 2014); thus, documentation should support the maintenance of goal areas with skilled therapy.

Often times clinicians struggle with determining whether or not function can be restored and still considered medically necessary in individuals with dementia. Medicare does clarify that rehabilitative therapy may be needed, and improvement in a patient's condition may occur, even when a chronic, progressive, degenerative, or terminal condition exists. For example, a terminally ill patient may begin to exhibit self-care, mobility, and/or safety dependence requiring skilled therapy services. The fact that full movement from baseline to prior level of function or partial recovery is not possible does not necessarily mean that skilled therapy is not needed to improve the patient's condition or to maximize his/her functional abilities. The deciding factors are always whether the services are considered reasonable and effective treatments for the patient's condition and require the skills of a therapist, or whether they can be safely and effectively carried out by non-skilled personnel.

Implementing the Treatment Plan

The ASHA Evidenced Based Practice Compendiums for Alzheimer's Disease and Dementia (ASHA, n.d.-a) lists several treatment strategies that have been included in comprehensive reviews: direct cognitive training (Sitzer, Twamley, & Jeste, 2006), reminiscence therapy (Saddichha & Pandey, 2008), reality orientation (O'Connell et al., 2007; Saddichha & Pandey, 2008), Montessori programming (Mahendra, Kim, Bayles, Hopper, & Azuma, 2006), supported conversations (Zientz et al., 2007), caregiver training (Thompson et al., 2007), and simulated presence therapy (Bayles et al., 2006; O'Connor, Ames, Gardner, & King, 2009). In addition, spaced retrieval has been indicated effective in research as a widely accepted treatment tool when working with patients with dementia (Brush & Camp, 1998; Camp, Bird, & Cherry, 2000; Orsulic-Jeras, Schneider & Camp, 2000). Readers are also referred to the evidence-based systematic review by Hopper et al. (2013) for more comprehensive discussion of cognitive interventions for adults with dementia. These techniques are all evidence-based practices and would be appropriate to document as skilled services.

Direct Evidence-Based Treatments

Direct cognitive training is used to restore function for areas of cognition including attention, memory, processing, problem-solving, and executive functions. Direct cognitive training may result in benefits for both individuals with mild to moderate Alzheimer's disease and their caregivers (Zientz et al., 2007). Clare, Woods, Moniz Cook, Orrell, and Spector (2003) completed a comprehensive literature review investigating cognitive stimulation/reality orientation, cognitive training, and cognitive rehabilitation concluded that evidence did not provide strong support for the use of cognitive training interventions for people with early-stage Alzheimer's disease due to a lack of randomized controlled trials (Clare, Woods, Moniz Cook, Orrell, & Spector, 2003). Because of the lack of randomized controlled trials, it was not possible for researchers to draw firm conclusions about the efficacy of individualized cognitive rehabilitation interventions for people with early-stage dementia. However, indications from single-case designs and small group studies were cautiously positive (Clare et al., 2003). A more recent review of 43 studies addressing use of direct cognitive training with errorless learning, vanishing cues, spaced retrieval, and a specific verbal instruction strategy provided preliminary support for the use of these techniques with adults with dementia (Hopper et al., 2013). It is important to note that techniques should always be individualized, patient-centered, and result in positive functional outcomes for the patient.

Reminiscence therapy utilizes more intact long-term memory to provide meaningful communication interactions for adults with dementia. Individuals with episodic memory

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impairments, with some ability to engage in verbal communication, may benefit from reminiscence therapy (Kim et al., 2006). Those with mild to moderate dementia, with the ability to tolerate social interaction within a group without excessive disruption to other group members, may also benefit from this technique (Kim et al., 2006). Successful reminiscence therapy may be most effective when group members have similar levels of cognitive-linguistic deficits and the facilitator is familiar with group members' personal histories so that meaningful communication can be encouraged.

Reality orientation focuses on orienting the adult with dementia to person, place, and time. A comprehensive literature review to determine the treatment efficacy of reality orientation for adults with dementia in acute care settings concluded that reality orientation has been shown to improve and sometimes maintain the cognitive and behavioral function of people with dementia in long-term care facilities and may have the potential to do the same in acute care settings (O'Connell et al., 2007). Again, it is important to note that reality orientation should be used to improve function so targets should be individualized to meet the needs of the patient within their current environment.

Montessori programming is designed to access more intact motor participation and procedural memory. Activities are structured so that everyone can participate in a meaningful way at his/her level of function, with no emphasis on "correct/right" and "incorrect/wrong". Effective programming should incorporate as many senses as possible. Adults with dementia with episodic memory impairments who have some capacity for motor learning, communication, socializing, and no history of physical aggression would be appropriate candidates for this type of therapy (Mahendra et al., 2006). In addition, those with mild to moderate dementia with the ability to attend/participate during activities would also be appropriate candidates. Before implementing a Montessori-based intervention, clinicians should screen for visual, auditory impairments, sensory integration, and motor impairments, and observe the individual socializing/participating in group activities with other residents. Montessori treatment tasks should be relevant to the individual's daily life, and the clinician should document generalization to activities of daily living.

Spaced retrieval training is a cognitive-communicative training strategy used to teach individuals with dementia to retain and recall new information utilizing procedural memory and errorless learning (Benigas, 2015). Hopper et al. (2005) reviewed 15 studies to determine the efficacy of spaced retrieval as a treatment technique for adults with dementia. They concluded that the results were very positive but methodological shortcomings warrant cautious interpretation of the studies reviewed. Spaced retrieval training is an effective treatment strategy for adults with dementia, and declarative memory impairments with mild to severe cognitive deficits, and the ability to engage in structured tasks when training sessions are administered weekly or more frequently as needed (Hopper et al., 2005). Verbal responses and skills taught should be individualized based on client needs. Benigas (2015) provided an update on current spaced retrieval practices.

Indirect Evidence-Based Treatments

Supported conversation is a treatment technique that involves communication strategy training for caregivers so they can assume responsibility for some of their communication partner's cognitive-communicative deficits. Supported conversations are an effective treatment technique for adults with dementia when the programs include education about Alzheimer's disease and its impact on communication, verbal and nonverbal communication strategies, and opportunity to practice strategies with direct feedback (Zientz et al., 2007). Caregiver training programs are successful when the caregivers are given the opportunity to practice the use of communication strategies with direct feedback provided by the SLP (Zientz et al., 2007).

Simulated presence therapy involves using an audio or video recording of a caregiver to increase the adult with dementia's comfort and cooperation during activities of daily living with less familiar caregivers. Simulated presence therapy in skilled nursing facilities could be an effective technique for stimulating conversations with adults with Alzheimer's disease; however, more research needs to be conducted with SLPs (Bayles et al., 2006). Bayles et al. (2006) specified

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the role of the SLP to include facilitation and monitoring of simulated presence therapy. In addition, the SLP should conduct tests of verbal episodic memory and consult with caregivers regarding conveying positive content and vocal tone. Across the board, simulated presence therapy may help decrease episodes of resistance to care by less familiar caregivers (Bayles et al., 2006). Specific behaviors noted to improve with use of simulated presence therapy were taking medication and feeding (O'Connor, Ames, Gardner, & King, 2009).

Environmental modifications can be very beneficial to improving the functionality and participation of adults with dementia. The evaluation and adaptation of environment in terms of communication partners, cognitive aspects, visual aspects, and auditory aspects is an essential component to dementia management (Brush, Sanford, Fleder, Bruce, & Calkins, 2011). Individualized environmental modifications can improve functional independence and decrease socially inappropriate behaviors.

Additional Treatment Approaches

Behavioral training strategies, both direct and indirect, can also improve functionality and participation of adults with dementia. Medical intervention often leads to a plethora of new issues for patients with dementia due to the unwanted side effects associated with the medications, adverse interactions of medications in patients with polypharmacy, and the ineffectiveness of the disordered brain in metabolizing medications (Buchanan, 2006). Depression, wandering, disruptive vocalizations, decreased socialization, and inappropriate sexual activity could all be effectively targeted using behavioral approaches (Buchanan, 2006). Preferred music intervention results in positive outcomes in reducing the occurrence of some types of agitated behaviors in older people with dementia and could be a viable alternative to chemical and physical restraints for managing behavioral symptoms of dementia (Sung & Chang, 2005).

Project-based treatments are designed to facilitate increased engagement for meaningful activities as part of a long-term, collaborative project that culminates in the creation and presentation of a tangible product, such as a care partner training manual/video. Project-based treatments have been successfully implemented with people with traumatic brain injury (Feeney & Capo, 2010; Ylvisaker & Feeney, 2008; Ylvisaker, Feeney, & Capo, 2007; Ylvisaker, Turkstra, & Coelho, 2005). Many of the projects utilized in the studies from the traumatic brain injury (TBI) population could also be used when working with people with dementia—book groups, current event groups, development of care partner trainings, and development of memory books. People with dementia could show similar social benefits as the people with TBI when project-based treatments are utilized. Increased maintenance of cognitive-communicative skills due to increased socialization and practice and improved compensatory strategy usage are likely as well. The social aspects of project-based treatments may be especially beneficial to those with mild cognitive impairment or early stage dementia who are still living in the community. Research of the effectiveness of project-based treatments with adults with dementia is needed to better determine cognitive-communicative and social benefits in this specific population. Readers are referred to Mason-Baughman and Beichner (2015) for a more extensive discussion on how project-based treatment techniques may be utilized with adults with dementia.

Once function has been restored or current level of function maintained through the use of the techniques described above or with the use of additional skilled services, final treatment sessions may be used in order to establish and transition patients onto a functional maintenance program. Functional maintenance programs are programs established by therapists that consist of activities and/or mechanisms that will assist patients in maximizing or maintaining the progress he or she has made during therapy or to prevent or slow further deterioration due to a disease or illness (CMS, 2015). For example, an individual who required spaced retrieval training for retraining of an activity of daily living task such as a safe bed to wheelchair transfer, who requires additional visual signage for mastery of tasks, may need the SLP to train caregivers to appropriately cue the use of visual signage. The SLP may see a skilled need for establishment of

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a functional maintenance program to train nursing assistant staff on cueing the patient for use of the visual signage cues at bedside.

Conclusion

In summary, it is important for SLPs to remember that rehabilitative/restorative and maintenance-based services are deemed appropriate for adults with dementia in the context of improving safety, function, and quality of life through techniques that restore lost skills, compensatory techniques that overcome weakness by utilizing strengths, and adaptive techniques that rely on caregiver assistance and/or environmental changes. Development and training of a functional maintenance program is also typically a major component of dementia management services. The SLP provides skilled services for development and training of strategies in the functional maintenance program; however, once levels of function become consistent with the use of skilled services, the SLP should train unskilled providers such as members of the family, or nursing staff. Speech-language pathologists (SLPs) can demonstrate that education services are skilled by documenting verbal understanding and return demonstration from staff during maintenance program implementation. Dementia management services should be reimbursable with proper assessment, use of evidence-based treatment practices, appropriate coding, and thorough documentation.

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