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How Seniors Learn

ABOUT THIS BRIEF

The learning capacity of older adults has direct, practical implications for professionals trying to educate older people and their families about health-care services and benefits, especially Medicare. In this brief, we discuss the issue of how older people learn, exploring research from the field of cognitive aging. We also offer some tips for how you can adapt your educational programs and materials to build on your clients' cognitive strengths and compensate for some of the losses that can occur with aging.

Special thanks to our guest author this month, Beth Stevens of Mathematica Policy Research, Inc.

American culture is of two minds when it comes to thinking about the intellectual capacity of seniors. On the one hand, the belief is that as we age, we do not have as great a capacity to learn new things. Folk wisdom asserts that "you can't teach an old dog new tricks." On the other hand, many colleges have established educational programs for older adults, and mandatory retirement has been outlawed in numerous places. Many people have now swung to the belief that most of us operate at full intellectual capacity until the very end of our lives.

This two-sided view of the learning capacities of older adults has practical implications for Medicare educators. Recent health policy has set up new requirements for seniors to learn about new aspects of health care and to make choices among options that they never had to make before. Medicare+Choice requires older people to learn about new options for Medicare—including Medicare health maintenance organizations (HMOs), private fee-for-service plans, and preferred provider organizations (PPOs). In traditional Medicare, seniors have had choices simplified by federal standards but still have to learn about and choose from among 10 standardized forms of Medigap insurance. The new prescription drug benefit and Medicare reform legislation looming on the horizon will add other crucial—and likely very complex—choices for seniors to make.

The Cognitive Challenges of Medicare

Learning about Medicare (or any complex abstract topic) and making health-care decisions involves much more than intelligence. Think about the number of mental processes we must go through in order to compare possible prescription drug plans. We must:

- Retrieve the information on prescription drug coverage that we already know we have.
- Absorb new information by reading, listening or both.
- Compare the new information to our recalled information.
- Compare the different new pieces of information about the different prescription drug plans.
- Assess the usefulness of the new information.
- Make a judgment about which parts of the information are worth using and/or retaining.
- Commit the information to memory.

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- Use the information to make a decision about prescription drug coverage.

To take any or all of these steps involves numerous mental capacities: recall, perception, attention, assessment, synthesis, comparisons and computing, to name a few.

The Basic Question

What indeed is the capacity of seniors to learn such new information? Are their minds too set to meet the new demands, or is this another opportunity for learning in their vibrant later years? Do we have to change our teaching and information dissemination practices in order to effectively provide information to seniors? To begin to answer these questions, we must look at the field of psychology and its study of cognitive aging to learn about how the human mind functions and whether this functioning changes as we age.

Aging Takes a Toll

Neither of the opposing beliefs about cognitive aging is supported by the research; the answer is somewhere in between. Cognitive psychologists have established that as the brain ages, certain types of cognitive capacities do indeed decline. The list includes declines in: speed of mental processing, cognitive flexibility, the capacity to draw inferences from information, the capacity to manipulate several types of information simultaneously, and the ability to focus one's attention. On the other hand, many cognitive skills remain with us to the end, and many of these lifelong skills pick up the slack when others decline. Let's explore this in more detail.

SPEED OF PROCESSING: Numerous studies have found that older adults, generally defined as mid-60s or older, are slower at processing information. Older adults take longer to recall information and complete tasks. This affects their ability to locate figures in a chart, make comparisons among rows or columns, and otherwise carry out tasks that require visual perception.¹

COGNITIVE FLEXIBILITY: Older adults show less ability to change their judgments when they are given additional information that might otherwise alter their opinion. Moreover, older adults are less

able to engage in "divergent thinking," which is the ability to generate alternative explanations or solutions to a problem.²

CAPACITY TO DRAW INFERENCES: Age also affects the capacity of older adults to draw conclusions by reasoning from evidence. The older you get, the more difficult it is to read between the lines and come to a conclusion based on the information at hand.³

WORKING MEMORY: Research shows that older adults have less "working memory" than younger adults. Simply put, working memory is the capacity of the mind at *any given moment* to manipulate different types of information. Practically speaking, this means that older adults can hear a telephone number and write it down correctly. But they have more difficulty accomplishing this while also remembering their relationship to the person they are calling and constructing their remarks on why they are making the call. This is because they have fewer resources to deal with several tasks simultaneously.⁴

ABILITY TO FOCUS: Increased age often means increased difficulty in focusing on specific information and eliminating distractions. Some researchers theorize that it is this inability to rule out irrelevant details that clutters the working memory, described above, and lessens one's capacity to process information.⁵

Cognitive Assets of Older Adults

While cognitive capacity in seniors is limited in some ways, their lifelong experience also provides strength in cognitive functioning. Researchers have found that knowledge is retained across the life span. This provides older adults with an extensive knowledge base to use in solving problems.⁶ Moreover, older adults are as accurate as younger adults in deciding whether two concepts are related or whether they share particular aspects of meaning.⁷ In short, older adults are as knowledgeable and insightful as they always have been; for the most part, the ways and speed that they use to access their knowledge is now different.

Older People Are Different in the Way They Make Decisions

The differences between younger and older adults in how they make decisions can be best illustrated with a comparison of two scenarios.

Anatomy of Two Decisions⁸

SCENARIO 1

Dorothy Wood, age 67, is a widowed homemaker. She was recently diagnosed with a stage 2 breast cancer after a routine mammogram screening followed by a surgical biopsy. She is now faced with a decision about how to treat her breast cancer. She meets briefly with her physician and, at her daughter's insistence, has her daughter along for the visit. She is offered several options that include mastectomy followed by chemotherapy, lumpectomy with radiation and chemotherapy, and a radical mastectomy without radiation or chemotherapy. She does not want to seek a second opinion and does not seek out additional reading materials. Her physician thinks it is best that she have a mastectomy followed by chemotherapy, but tells her that she would not be at increased risk if she took up to a month to make her decision about what to do. A few days after meeting with the physician, she schedules the surgery. She has the surgery and follows up with three months of chemotherapy. Three months later, after she is finished with treatment, she finds her life is getting back to normal.

SCENARIO 2

Candace Leggett, age 39, is a single banker. She was recently diagnosed with a stage 2 breast cancer after a routine mammogram screening followed by a surgical biopsy. She is now faced with a decision about how to treat her cancer. She meets with the surgeon who performed her biopsy. The surgeon favors a mastectomy followed by chemotherapy but presents Candace with other options, including a lumpectomy with radiation and chemotherapy and a radical mastectomy without radiation or chemotherapy. The surgeon advises her that she is not at increased risk if she takes a month to make this decision. After the meeting, she schedules an appointment with an oncologist and another surgeon to get additional opinions. She reads several books written for women faced with this decision and secures additional information from the Web. Candace becomes part of an Internet information exchange group. After a month of consultations, Candace opts for a mastectomy followed by chemotherapy. Three months later, after finishing treatment, she finds that her life is getting back to normal.

These scenarios illustrate the research findings about how older people differ from younger adults in the ways they make decisions. Although the actual decisions are not different, the two groups arrive at their conclusions differently.⁹ Research on making medical treatment decisions, playing chess, or solving international political problems all shows that the decision-making process of seniors differs in

that:

- Seniors review much less information than younger adults.
- They eliminate choices or possibilities more quickly than younger adults.
- They are less likely to analyze information while making a decision instead, they are more likely

to make decisions using a set rule (such as “always buy the cheapest”).

- They use references to prior life experience rather than objective data to make their decision.

Cognitive psychologists theorize that the difference in processes is due to the smaller working memory, slower processing of information, and inability to focus on relevant details.¹⁰

While processes used by older adults to make decisions are different from younger adults, they are not necessarily inferior. Experience allows the decision maker to zero in on the best options and more quickly discard irrelevant ones. Over time, experienced decision makers come to recognize characteristics of a problem situation that lead them to reach effective solutions with less analysis than younger decision makers need. Younger adults might tend to waste their energy generating excessive numbers of options that do not ultimately yield better decisions.

Are the Cognitive Losses Severe or Universal?

We all know older adults who exhibit the traits so far described, but we also all can point to a public figure or beloved relative who is writing books or running a complex business at the age of 80. So, it is natural to question whether cognitive losses make that much of a difference in the capacity of older adults to learn new things and make complex decisions. To answer this, we turn to one of the most comprehensive studies of adult intellectual development and decline, the Seattle Longitudinal Study. Begun in 1956, the study continues to this day, with data on over 6,000 people. The Seattle study revealed several critical patterns that help explain this seeming paradox.

PEOPLE VARY IN THE DEVELOPMENT AND RATE OF DECLINE IN COGNITIVE FUNCTIONING. Not all individuals decline in lockstep. This decline varies depending on individual circumstances. The extent of cognitive decline is affected by genetic inheritance, the presence of chronic diseases (such as cardiovascular disease), the degree of education and occupation, and the extent of ongoing mental challenges generated by their extensive reading and participation in continued educational activities, among other factors.

DIFFERENT COGNITIVE ABILITIES DECLINE AT DIFFERENT RATES. “Verbal memory” peaks in a person’s 60s and declines in his or her 80s. “Verbal ability” (the ability to understand ideas expressed in words) plateaus between ages 40 to 60 and declines last of all the cognitive skills, but it declines more steeply than other abilities in one’s 70s and 80s. In contrast, “number skills” (the ability to understand numerical relationships and work with figures) peaks as early as the late 30s but only severely declines in your 80s.

COGNITIVE DECLINE IS NOT CONSEQUENTIAL FOR MANY OLDER ADULTS UNTIL LATER IN OLD AGE. In general, it is not until the age of 80 or above that the *average* older adult falls below the middle range of performance of younger adults.

Nevertheless, the difficulties that have been documented in the ability to absorb and work with information (both verbal and numeric) because of declines related to speed of processing, memory capacity and problem solving make it difficult for many seniors to learn and choose among medical options.¹¹

How Can You Help or Compensate for These Declines?

You can help your clients to compensate for these losses by using different techniques in teaching and information presentation that provide support or fill gaps in cognitive processes. These techniques build on the strengths of older people—their extensive knowledge base and varied life experiences. They also build on the growing base of knowledge about how to improve the accessibility of written materials, as well as the emerging research on how to best present information to inform consumer health-care decision making.¹² You may already be using some of these techniques. Others that we present here are newer practices and suggestions based on research studies. First, we will talk about how you can better organize the content of your materials in order to better work with older adult learning styles. Then we will move on to discuss specific techniques that might be used in written and oral educational materials.

WAYS TO ORGANIZE CONTENT

Research has shown us that simply providing generous amounts of information on the Medicare+Choice program does not help seniors understand the program or their choices any better.¹³ The information has to be both user-friendly and useful to older adults for it to help increase understanding. There are several information design practices that can begin to shape information in this way.

- **Know your audience.** Any educational effort, whether written or oral, can benefit from an opening that identifies the special characteristics, needs and/or priorities of the individual seniors in any audience. This could be done through some kind of checklist or computerized exercise. The purpose of this is to structure the materials so that you can refer to the personal experiences of each learner and allow for only relevant information to be disseminated. This limits the wasted effort older adults otherwise devote to trying to learn less than relevant and distracting information.

- **Limit your messages.** For older adult learners, it is a good idea to limit the amount of information presented to only a few key messages or choices, in order to minimize the likelihood that your clients will be overwhelmed by too many demands on their working memory. Well-educated adults can rarely store more than seven independent items in their short-term memory at any one time.¹⁴ Given declines in working memory in older adults, the number of different options or messages in any one written document or presentation should be even lower.

However, since some health-care decisions are fairly complicated, this rule can be difficult to follow. One way to get around this is to divide either your written or oral presentation into modules. Modules can either be delivered at different times (as in a series of mailings or meetings). Or they can be developed as special topic modules and offered only to those adult learners who would find them relevant to their own circumstances. Note: Using special modules

means that it's even more critical that you know your audience's priorities and special interests.

- **Draw on prior experiences.** Try to make the information and/or possible choices that you present draw on the older adult's experience and knowledge rather than on abstract text that requires analytical skills. The challenge is to present the information in a way that maximizes the likelihood that your audience will call on *appropriate* or *relevant* experiences. Reasoning while using inappropriate experience could result in a wrong decision. Before presenting your main content (whether it is written or oral), ask your audience to recall a similar experience from their lives. For example, you could ask your clients if they ever had to decide about undergoing surgery or if they ever had to make a choice among insurance policies. You could then ask them to explicitly compare how that situation relates (or doesn't relate) to their current situation.

- **Use stories.** Information should be presented in narrative (story) form rather than as abstract data. Narratives have several advantages for older learners. They allow the listeners/readers to tap into their own experiences (or those of someone they know) more easily. Narrative may help your readers see the information as more relevant to their lives. Stories are more concrete, less abstract and therefore more understandable. They have a structure all their own and thus reduce the need for your clients to impose a structure or logic on the information themselves.¹⁵

- **Be concrete.** In order to avoid having your audience make too many inferences from your data, make your information as explicit and concrete as possible. You also should define terms specifically. Instead of simply saying, "Get adequate rest" in health-care directions, you might add, "By adequate rest, we mean at least eight hours of sleep each night and a two-hour rest period lying down each afternoon".¹⁶

SUGGESTIONS FOR WRITTEN EDUCATIONAL MATERIALS

Written materials work well in teaching older adults. They can be read at someone’s preferred pace; they can be consulted over time to refresh the memory; and they can be easily set into formats that organize the information in a user-friendly way that can help compensate for poorer vision or a tendency to become distracted by less relevant details. Many of these methods make your written materials appropriate not only for older adults, but for all readers—just as in architecture, universal design for the physically challenged can turn out physical spaces that are functional for everyone. Some of these techniques for improving written educational material include:

- **Summarize your messages frequently.** This allows for repetition of key points that helps instill memories and inhibit distraction.
- **Break text into clear sections.** In order to divide information into manageable pieces, divide the text into clear paragraphs organized around one topic. This makes the information more approachable and less overwhelming.
- **Use headings for main sections.** Headings provide both an orientation to what is most important in your text as well as an initial repetition of your main point. If a heading is difficult to write, then there are likely too many ideas in the section.¹⁷
- **Use lots of white space.** Leave gaps in the text between sections of text and between the margins, to minimize the chance of overwhelming your reader.
- **Use bold-faced type or underlining to help readers recognize key points.** But be careful to use only one method of emphasizing points. Using too much of a good thing (bold, underlining and italics) can make text more difficult to read.
- **Use active voice when writing the text.** This emphasizes concrete actions that your reader can see. Instead of saying, “Re-enrollment should occur yearly,” you can say, “You will have to re-

enroll every year by calling your health plan each January.”

- **Use pictures and diagrams.** Research shows that people retain the ability to recognize complex pictures even as they age. So including relevant pictures and diagrams in your text can be useful both for illustrating your point and for breaking up your text. Proceed with caution when using charts with rows and columns, however, because the interpretation of charts involves a different cognitive skill that does decline with age.

TIPS FOR ORAL PRESENTATIONS

Group presentations or one-on-one consultations tend to emphasize the more personal aspects of Medicare education. Several useful techniques for improving these are:

- **Present ideas at a moderate pace.** Oral presentations that move more slowly allow for more questions, and discussion may be more useful to older adults.
- **Encourage attendees to bring along a friend, spouse or neighbor.** Since older adults will have varying degrees and types of cognitive challenges, both can then pool their information after the presentation. Team or pair decision-making tasks may also allow older adult learners to pool their acquired information and learn from their peers.
- **Request that attendees bring in background materials to the presentation.** In order to minimize the need for recall of complex information, ask attendees to bring in relevant materials to the presentation. For example, you could ask attendees at a workshop to bring their Medicare supplemental insurance policy or a printout of their retiree benefits.
- **Use a variety of teaching techniques.** Given the varying cognitive strengths within any group of older adults, try to use a variety of different methods to get across the same point. Older

learners could benefit from reading material, hearing about it, taking and reading their notes on the topic, and then discussing it.

➤ **Distribute written hand-outs that people can review later.**

➤ **Provide follow-up.** Whenever possible, schedule follow-up sessions (whether in person or over the phone) to allow your clients to go back over what you said or to ask for help in understanding and applying general knowledge to their specific experiences.

In Conclusion

Despite the increasing expectations that older Americans navigate the health-care system in ways that require significant cognitive skills, we are only just beginning to pay attention to the challenge those expectations represent. As Medicare educators, we will need to streamline, transform and re-invent educational practices in order to meet the special cognitive needs and priorities of older learners.

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