Introduction to Cognitive Screening: Administration and Scoring

The topic of this training session is introduction to cognitive screening, administration, and scoring. The objectives are first to understand the findings and recommendations of the United States Preventative Services Task Force to learn techniques to improve skills in cognitive screening and detection of memory loss and dementia, to review and identify four common screening tools in the field, and to learn best practice recommendations for administering the tools and scoring them. You may know that every so often the U.S. Preventative Services Task Force is charged with reviewing the literature and making recommendations on various topics. Their findings and recommendations concerning cognitive screening were updated. Their purpose was to systematically review the literature on the diagnostic accuracy of brief cognitive screening instruments, as well as the potential benefits and harms of medication and non-medication interventions for early cognitive impairment.

What they found, not surprisingly, was a limited number of studies conducted in people with dementia other than Alzheimer's, as well as sparse reporting of other important health outcomes. What they found is that brief instruments used to screen for cognitive impairment do their job. That is, that cognitive screening tools can adequately detect dementia. However, they also found that there is not enough evidence available in the literature that has examined whether cognitive screening actually changes the decision-making of providers. That is something that needs to be determined. On the other hand, our providers in the field who work with geriatric populations frequently. This is a comment from one family practice physician: ‘Avoiding detection of a serious and life-changing medical condition just because there's no cure or ideal medication therapy seems at worst incredibly unethical and at best, just bad medicine.’

Clearly, there are different views about the role of cognitive screening and the appropriate use and timing of screening and what to do when patients fail those instruments. Unfortunately, most of us as providers do not recognize the signs and symptoms of dementia in patients until they are actually quite pronounced. This can be referred to as an attribution error. You may yourself or heard colleagues say, 'What do you expect? The patient is 80 years old.' In this case, we often lean toward explaining way too much memory loss as normal aging and not really understanding the distinction so much between normal brain aging and something else. It's important to recognize that subjective impressions in conversation, for example, with patients, are not a good way to detect dementia. Particularly in early stages.

This is because people are very sophisticated at using compensatory strategies and many people actually with early dementia can converse fluidly in a conversation. If

you are doing a clinical interview with a patient, there are some tips to help improve your detection of symptoms. One is to let the patient answer questions without help more often, so for example, if a patient comes into the office with a family member—a son or daughter or spouse—and that person is jumping into the conversation or answering for the patient, you may not get as good of a read on the patient as you might like. So it's important to try to focus your attention as much as possible and allow the patient to answer questions themselves if they can, so that you can see what types of things they may know or not know.

Also remember that social skills are something that remain intact until late-stage dementia. So it's very easy to be fooled by a patient who has a good sense of humor or who relies on old memories or is a little bit quiet or has an affable demeanor. The better way to approach detection of cognitive impairment is not to use subjective or conversational evaluation, but actually an objective cognitive screening tool. ACT on Alzheimer's has prepared best practices and evidence-based tools that are available on the ACT on Alzheimer's website. I will quickly show you one tool for providers, which shows one-page easy button workflows for how to perform cognitive screening, how to do a gold standard dementia or memory loss workup, and how to take care, manage, or treat patients once a diagnosis of dementia or a related condition has been rendered.

This screenshot is just an example from the provider tool, starting with cognitive screening. You'll see that the recommendation is first to use a very brief, tool to give you an indication of whether the person's cognition is intact or not. For example, one of the tools is the Mini-Cog, which can be administered in about a minute and a half to three minutes. If a patient fails a quick screen, the recommendation is to possibly move forward with a second screen that is a little bit longer. Examples include the St. Louis University Mental Status Exam, the Montreal Cognitive Assessment, or others that are listed in the red banner on the right [One of the following: SLUMS, MoCA, Kokmen STMS, MMSE-2 or MMSE AND Family Questionnaire]. However, if a patient does not perform well on a second screening tool, that's a very strong indication that some type of cognitive impairment may need to be worked up.

At the bottom of the tool, each provider has the option of either doing that workup themselves or referring the patient to a colleague, a specialist, or a memory disorders clinic. Care coordinators and other providers also have tools that are available on the ACT on Alzheimer's website. This shows the care coordination tool for social workers and nurses and how to think about or incorporate cognitive screening into their workflow. There are some initial considerations to think about before jumping into cognitive screening, and the first and maybe most important has to do with time. It's important that as providers, we strike a balance between the length of the tool and also the sensitivity and specificity or psychometric properties of the instrument.

Know that the sharpness or the psychometric properties of these screening tools vary

widely, and it's important to follow recommendations to use the sharpest tools available. Longer tools tend to have better psychometric properties, but there are also shorter tools that do a very good job of detecting dementia. There has been a lot of research conducted on what amounts to hundreds of available screening tools, and so you should be asking yourself: is there a difference between how the different tools work and how well and which are most sensitive for timely detection? There are also process considerations, and these are things like: when are you going to perform cognitive screening? Are you going to screen routinely in an asymptomatic population? For prevention or wellness, for example, in individuals over the age of 65 or part of the annual wellness visit?

Or are you only going to incorporate cognitive screening when patients are presenting with obvious signs or with complaints of memory loss? How are you going to incorporate the workflow into your practice? And most importantly, what's the process or workflow for patients who actually fail the screen? What do you do? It's not helpful to perform an extra cognitive screening test if you don't have a plan for what to do when patients fail. You also have to think about how much yield the instruments can give you. For example, it may not tell you very much or add much to your practice if you're only using these tools when dementia can be obviously detected already just in conversation. Some tools are best for detecting or identifying memory loss and dementia, and others may be better for staging and tracking someone's progress once a diagnosis has already been rendered.

Before you do screening, make sure that you have the forms in front of you and you have everything you need to get started. Evaluate the appropriateness of your tool. Depending on the population with whom you work, you may need to consider cultural, linguistic, education, and other health equity variables. On the ACT on Alzheimer's website, you can also find more information about alternative tools to use with various populations of interest. Make sure that, with a patient, you set the stage with a relaxed demeanor. Know that your anxiety will rub off on the patient. Ensure that there are no sensory confounds if you can help it. That is, the patient can hear and see what you are trying to do appropriately. When introducing cognitive tests, I like to avoid using the word 'test' and also avoid using the word 'memory'.

That's because many patients are already very anxious, worried about their memory. The word 'test' for many people can raise anxiety as well. And so instead, come up with your own phrase that is a little bit less threatening, like, we're going to do something next that requires some concentration you're still, you're still priming and prompting the patient reminding them to concentrate but not using certain words that may get them on high alert. During the screening process itself, it's important to maintain an easy, breezy, laissez-faire attitude. Most patients will not respond negatively to the idea of cognitive screening. However, there are some patients who will be a bit anxious and maybe even slightly resistant. If a patient says something like, 'Oh, I've never been good at math or I couldn't possibly do that,' respond by

saying, 'Oh, everyone has strengths and weaknesses, or some of these questions are hard and some of them are easy. Just do your best.' In other words, keep the process moving and keep pushing them to respond to questions. In most cases, if you do that, most patients will comply. Make sure that you smile often and you foster a nurturing environment. First and foremost, it's important to be a human being and not present this as some sterile, scary practice. Connect with people and they will follow you in the process. Make sure that you're gentle but persistent if you get any resistance. It's also important to offer clear expectations both before and during cognitive screening. You can tell patients things like some questions are easy, some are difficult, most people do not get all the questions right. Make sure you ask patients to ask questions if they don't understand something.

And encourage people to try their best, even if they're frustrated or they believe some of the questions are too difficult for them. Make sure that you never offer feedback during screening, either positive or negative. Like that was great you did a good job conveys a sense of evaluation so it's important to be neutral. Avoid positive or negative comments. If you need a transitionary statement say something like you're doing just fine here's the next question. When doing screening, it's also a good idea to screen for mood disturbance. This is because you do not want to confuse a patient with depression or significant anxiety as one having dementia. There are many instruments available like the PHQ-9 or the Geriatric Depression Scale that are short and well validated.

Other screening tips or things not to do. Never allow people to give up prematurely or skip questions. Again, if you continue to encourage them, most patients will continue the process. Never deviate from standardized instructions. It's the standardization that makes them reliable. Never offer multiple choice answers. Unless that's part of the tool, which it usually is not, and do not be soft on scoring. The score ranges for each of the tools are already padded for normal errors. It's important to deduct points where necessary and to be strict with scoring. If you're on the fence regarding whether an item should receive credit or not, in most cases the best answer is not. That's what makes the tool sensitive. Remember also that cognitive screening instruments are not diagnostic tools. They are not used in and of themselves to make a diagnosis of Alzheimer's or other dementias. Keep in mind, there are a lot of reasons why a patient could do poorly on a single screening test. It may be mood related. Maybe they did not sleep well the night before or are very anxious. Possibly they are experiencing polypharmacy or medication side effects, or they are acutely ill. There are many other reasons as well why a person may not perform optimally. The purpose of screening is simply to identify patients with suspected cognitive impairment so that further work of investigation can be done to identify a cause. Even if the cause is medication side effect or depression, those are important things to uncover and to manage appropriately.

As mentioned earlier, there are really a wide range—hundreds of cognitive screening

measures—that are available. For purposes of brevity, I'm only going to review a few of them. I'll explain the Mini-Cog, which is a very short, one-to-three-minute screen. The mini mental status exam is one that has been around for many years and is well used in clinical practice. The St. Louis University Mental Status Exam or the SLUMS, as well as the Montreal Cognitive Assessment, the SLUMS and the MoCA, are newer tools that have been developed with more recent research. Note that all of these instruments are free, except the MMSE, which was copyrighted and technically requires purchase in order to use it. Most of these tools can also be found online.

You can imagine that every screening tool has advantages and disadvantages, and so I'm going to review some of the advantages and disadvantages with you on several of the tools. The Mini-Cog is a very quick one-to-three-minute screen that is very easy to administer. The time commitment is very minimal. The clock drawing portion of the test is sensitive to multiple cognitive areas, including executive functioning and visuospatial processing, and it has very simple scoring and interpretation. The disadvantages are that because it's so short, it may not be as sensitive in some cases for mild cognitive impairment or very very early dementia, when compared to longer screens. The brevity of the tool also means that there's less information to interpret, and it may not be the best tool to use for tracking or staging once you already know someone has dementia, because the score range is rather narrow, only 0 to 5.

The SLUMS also has pros and cons. The SLUMS have more measures of executive functioning, working memory, parts of the brain, and cognitive function. These are known to decline early in the case of dementia and Alzheimer's disease. The SLUMS have a good balance between easy and difficult items. It is more sensitive than the MMSE in detecting mild cognitive impairment and early dementia. And the 30-point scale is similar to the MMSE, which is nice if you're familiar with that older tool. The score range for MCI and dementia is elaborated, and it's also free online. The disadvantages of the tool is that it takes a little bit longer—at least 10 minutes—to administer it. It has a little bit more complex directions than the MMSE, and of course, the SLUMS may not have the same recognition as a tool like the MMSE, which has been in the field for decades.

The SLUMS, however, is a very very good tool with good psychometric properties. The Montreal Cognitive Assessment, the pros are, again, like the SLUMS, it's more sensitive than many other tools for MCI and early dementia. Like the SLUMS, it has a little bit harder content, tapping higher level executive functions. It also is on a 30-point scale. And nicely, this is very useful. The MoCA has been translated and is available for free in over 35 languages. There's also a version for individuals who are blind or visually impaired. The tool is also free and available online. The disadvantages of the MoCA is one of the more tricky instruments to administer. The instructions are a little bit more complicated. The length of time it takes to use the tool is about 10 to 14 if not a little bit longer.

Again, the instructions and the scoring are a little bit more complicated. This is just showing you some summary of the research that's been done comparing different tools to each other regarding sensitivity and specificity for being able to detect mild cognitive impairment and dementia. If you look at the bottom, the Mini-Mental Status Exam (MMSE), you'll see that the sensitivity is very low for both MCI and dementia compared to the SLUMS and MoCA. This is in part because the MMSE out of 30 points, 10 of those points are weighted toward orientation questions such as what year it is or what day it is. These are symptoms that often do not decline until later in the dementia process and so many points are used for what is now considered to be later symptoms of the disease.

In some instances, you may need other tools to evaluate a person's cognitive status. For example, some patients will simply be unwilling, unable, or not available for objective cognitive screening. In other times, in addition to cognitive screening, you may also want collateral information or family input or perspective. And in that case, you may want to consider using a validated instrument to quantify signs and symptoms of cognitive impairment. One example is called the Family Questionnaire and this asks a family member about the patient's ability in several different areas. The answer choices are not at all, sometimes, or frequently, and a score of three or greater should prompt a workup. The Family Questionnaire can be found and downloaded online and at the link shown at the bottom of the slide [www.actonalz.org/pdf/Family-Questionnaire.pdf]. And this slide just shows you some of the sample questions. [1. Repeating or asking the same thing over and over? 2. Remembering appointments, family occasions, holidays? 3. Writing checks, paying bills, balancing the checkbook? 4. Deciding what groceries or clothes to buy? 5. Taking medications according to instructions?]

Asking family members, for example, if the patient is repeating or asking the same things over and over, remembering their appointments and things like that. Keep in mind this is not an objective cognitive screening measure. This is simply gathering opinions and perspectives from family members, which can be useful and also can be limited. The best measure of an individual's cognitive function is an objective screening measure. ACT on Alzheimer's has numerous tools that simplify, streamline, and explain how to perform cognitive screening and what to do when patients do not pass those tests. This is just an example of one of those tools that can be downloaded in its entirety online. Care coordinators, nurses, and other providers also have their own tool on the ACT On Alzheimer's website, which explains how to incorporate and make sense of a patient's performance during cognitive screening.

One question that you may be having about cognitive screening is how to discuss a patient's test results with them immediately afterward. You may also be wondering how to introduce these screens in a way that is palatable and acceptable to people. Make sure that you're very clear about the purpose of screening and some ideas are

that you are evaluating the health of the brain. More and more we're trying in medicine to move toward prevention and just like we measure the health of the heart with regular intervals we now know that it's important to check the health of the brain. Using phrases like 'check up from the neck up' may also be helpful. You can also tell patients that you're trying to identify any potential memory problems as early as possible so that you can help them to stay well and keep well, or that you're tracking their progress, trying to be proactive with their care, and know how best to help them in the cases of people who are already diagnosed with dementia. It's okay to be reassuring and emphasize to patients that there are many reasons that people may not do well on the screen. All the screen score tells us is just whether we need to dig any deeper or do more work with a dementia workup. All of these tools and much more information can be downloaded for free at the ACT on Alzheimer's website at the link provided on the slide. You can also email and contact the staff at ACT on Alzheimer's using the information shown [www.actonalz.org/provider-practice-tools] [email: info@actonalz.org, web: www.actonalz.org].

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