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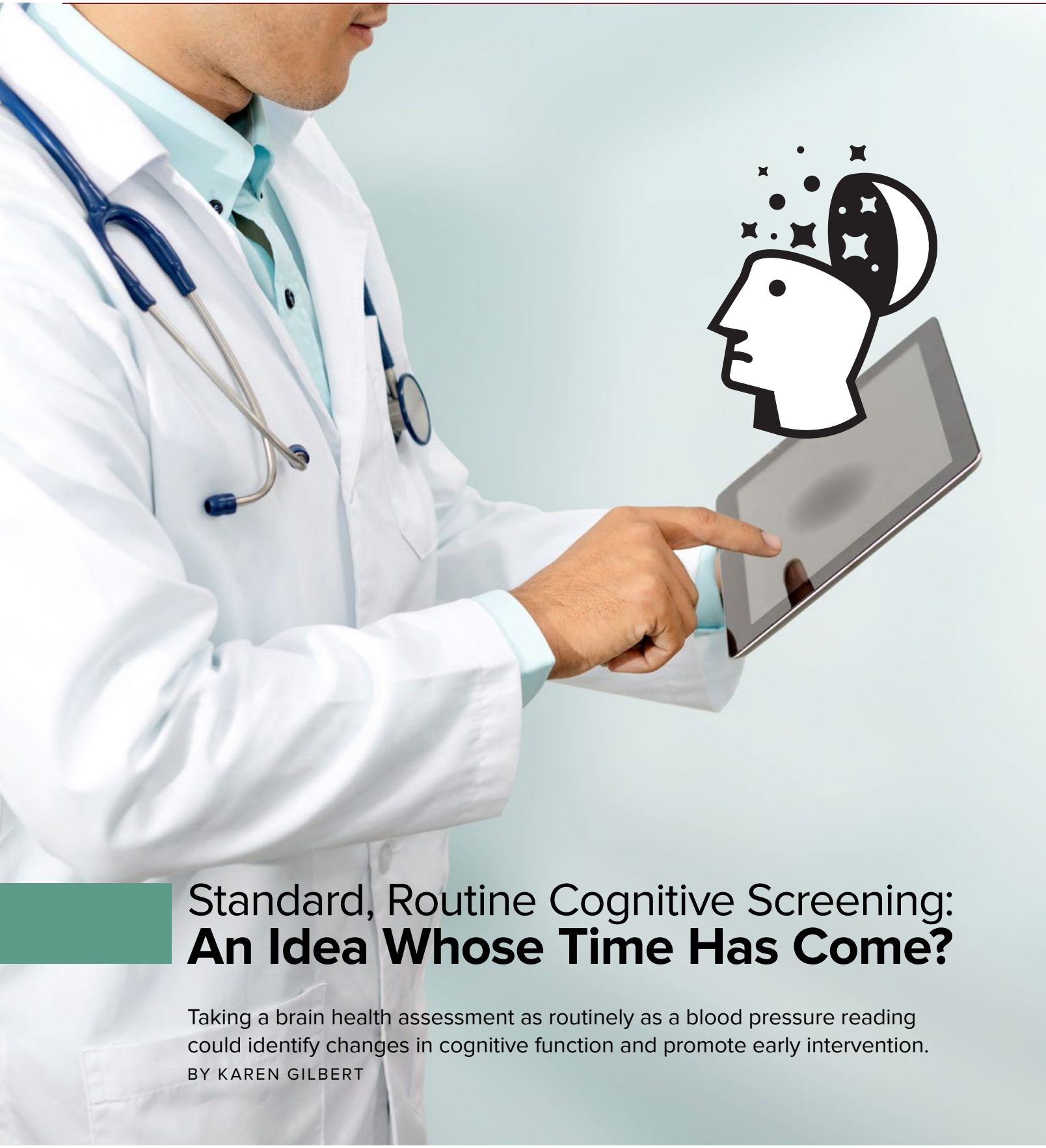

Standard, Routine Cognitive Screening: **An Idea Whose Time Has Come?**

Taking a brain health assessment as routinely as a blood pressure reading could identify changes in cognitive function and promote early intervention.

BY KAREN GILBERT

There is currently neither cure nor substantive disease-modifying treatment for Alzheimer's disease (AD). However, it is now understood that changes occur in the brain long before overt symptoms manifest. This knowledge prompts investigation into whether early detection of those with known risk factors may result in proactive approaches to mitigate cognitive decline and resulting morbidity and dependence (Galvin, 2017). Alzheimer's disease, the most prevalent irreversible neurocognitive disorder, is currently recognized as the sixth leading cause of death in the United States and fifth leading cause for those over age sixty-five. The current number of 5.7 million affected Americans is predicted to more than double by the year 2050 (2018 Alzheimer's disease facts and figures, 2018).

As society cares for those now profoundly impacted, it is possible to envision a path that may change the sobering predictions for the incidence of AD. This process paves the way for advancing brain-healthy lifestyle choices and focused, individualized interventions at the earliest sign of symptoms. It's time to consider routine screening to identify and evaluate the earliest manifestations of cognitive impairment in those at greatest risk for AD (those over age sixty-five), as well as the population at risk for other irreversible and progressive neurocognitive disorders.

Problem Identification

The current healthcare system has no identifiable medical principle for a proactive approach to neurocognitive disease. Screening for emerging cognitive impairment is neither routine, nor, when applied, accomplished with the use of a standard screening tool. Medicare's Annual Wellness Visit includes a cognitive assessment, though devoid of suggested screening tools (Scott & Mayo, 2017, p. 323).

It is estimated that symptoms of cognitive decline fail to be identified in the primary care setting from 27 percent to 81 percent of the time, according to Cordell et al. (2013), and from 29 percent to 76 percent of the time, according to Moyer (2014, p. 793).

Why is This Problem Important?

First described in 1906 by Dr. Alois Alzheimer, AD was not recognized as the most frequent cause for symptoms of dementia until the latter part of the twentieth century (2018 Alzheimer's disease facts and figures, 2018). Not until the late 1990s was the disease recognized as one of the top ten causes of death in the United States. Furthermore, deaths from AD are underreported because death certificates often cite another underlying disease, and such deaths may be underestimated for the same reason (Deaths from Alzheimer's Disease — United States, 1999 - 2014, 2017).

The population of the United States is aging. It is estimated that by the year 2030, Americans over the age of sixty-five will comprise 20 percent of the nation's population (The state of aging & health in America 2013, n.d.), and the greatest, unmodifiable risk factor for the development of AD is age.

Alzheimer's disease is associated with declining physical as well as cognitive abilities, and increasing dependence on caregivers as the disease progresses. With no cure and no substantive disease-modifying treatment, there is a sense of urgency to approach this degenerative disease in a proactive manner, thus preventing or delaying development of symptomatic disease and its consequent dependency and morbidity.

Healthcare costs for patients with AD are considerable, and families may be responsible for approximately one-fifth of total expenditures. Medicare and Medicaid also take a financial hit. Expenditures by Medicare and Medicaid on health care for patients with Alzheimer's disease in 2018 were anticipated to exceed $275 billion (2018 Alzheimer's disease facts and figures, 2018).

Who Feels the Impact?

The stakeholders include a wide variety of people from diverse fields:

- affected patients,
- their family caregivers,
- healthcare professionals in all disciplines and in all acute healthcare settings,
- social work and mental health professionals,

- assisted living and skilled nursing facility providers, and
- the community, population, and healthcare system at large.

Patients with AD are cared for in a variety of settings throughout the course of disease progression, a process best addressed with coordination, collaboration, and standard, principled approaches (Bradley et al., 2015).

Routine Screening for Cognition

Can routine, standard cognitive screening in the primary care setting improve identification of occult (hidden) neurocognitive symptoms? Three factors are important. A focus on 1) the early identification of symptoms of cognitive impairment, 2) prompt evaluation to address treatable causes, such as hypothyroidism, malnutrition/dehydration, vitamin deficiencies, menopause, or brain tumor, and 3) differential diagnosis for irreversible causes of cognitive decline, is growing. Identifying early symptoms of cognitive decline is dependent on screening. Treating a person's cognitive score as a "vital sign" (Riley McCarten, 2013) in a standard manner across healthcare settings is an important first step. Such a method facilitates early intervention and standard care plan approaches in acute and post-acute care settings that optimize safety for the cognitively impaired patient. In addition, Riley McCarten (2013, p. 1203) refers to early and moderate manifestations of dementia as an "occult disease," one for which a patient may *appear* cognitively intact to the primary care practitioner, in the absence of a screening process that can reveal the need for an in-depth evaluation.

In the absence of a standard for screening and evaluation, opportunities to address treatable causes of symptoms may be missed, and patients may consequently be misdiagnosed with a progressive, irreversible neurocognitive disorder. Alternatively, patients with AD may not be diagnosed until the disease has already reached middle stage, when the efficacy of current treatments to slow the process is questionable.

A discussion of screening to identify early disease is served by exploring the concepts of primary and secondary prevention. Primary prevention refers to those actions that aim to prevent the onset of a disease. Examples include vaccinations against infectious disease, smoking cessation to prevent pulmonary disease and reduce the risk of lung cancer, diets designed to reduce the risk of high blood pressure and diabetes, and exercise regimens to maintain bone density and muscle strength, etc.

Secondary prevention is dependent on screening activities designed to identify disease before symptoms emerge. Familiar examples, which have had substantial impact on cure and survival rates, include the Pap smear for identification of premalignant changes to the cervix, mammograms to identify breast tissue that is more vulnerable to malignancy and breast cancers at their earliest and most curable stages, and colonoscopy which can also detect and remove premalignant polyps long before cancer of the colon develops.

Arguably, brain health should be no different. Education about preventive lifestyle choices combined with routine, standard screening to identify the earliest manifestations of cognitive impairment mitigates the risk of developing Alzheimer's disease in the first place. Furthermore, the same screening would provide a foundation for early, individualized, multidimensional regimens when symptoms emerge.

Preventive lifestyle choices include:

- not smoking,
- adhering to a Mediterranean-type diet,
- maintaining a healthy weight,
- preventing or controlling high blood pressure,
- getting adequate quality sleep,
- exercising,
- engaging in continuous learning,
- staying socially active,
- treating hearing loss, and
- avoiding head injury.

Performed routinely during annual physicals, cognitive screening can establish a baseline of cognitive function and identify changes long before impairment reaches the middle stage. This is the same logic applied to routine blood pressure and blood sugar screenings; high blood pressure can be addressed before it results in kidney failure or stroke, and diabetes can be managed to decrease the risk of associated cardiac disease, blindness, or risk of limb amputation. Thankfully, a widely accepted tool for cognitive screening already exists.

Currently, the Centers for Medicare and Medicaid Services (CMS) require use of the Brief Interview of Mental Status (BIMS) in mandatory assessments performed on patients in short-term skilled rehabilitation facilities and for residents of skilled nursing facilities. The BIMS can be used in any healthcare setting, has no cost, takes only two to three minutes to complete, and can be administered by any health facility clinical or social work staff member oriented to the process.

Physicians and/or nurse practitioners identifying *any* patient with cognitive impairment, whose deficit, in the absence of this screening, would have been unrecognized, should be persuaded as to the value of this simple screening process.

Support in the Literature

Peer-reviewed literature abounds with support for the concepts of cognitive screening and early intervention. The studies of Grober, Wakefield, Ehrlich, Mabie, and Lipton (2017, p. 191), Kiral, Onge, Sungur, and Tasdelen (2013), Rosenbloom et al. (2015, p. 20), Laske et al. (2015, p. 571), Tsoi, Chan, Hirai, Wong, and Kwok (2015, p. 1451), and Harrawood, Fowler, Perkins, LaMantia, and Boustani, (2017, p. 51) all reflect how screening identifies those not otherwise recognized as having cognitive impairment.

Athilingam, Visovsky, Elliott, and Rogal (2015) note the potentially higher risk for cognitive impairment in patients with other chronic conditions, and that the diagnosis of Alzheimer's disease for these patients typically occurs at a point at which "reversal of the disease is unlikely" (p. 547). Galvin (2017, p. 2128) discusses "multiple pathways" for development of AD, implying that there may be a multidimensional approach for delaying or preventing onset of symptomatic disease. This approach incorporates annual cognitive evaluation, as well as routine screening for additional chronic ("comorbid") and contributing conditions, such as diabetes and vascular disease (p. 2131).

Feldman (2016) references multiple preventive strategies relative to modifiable lifestyle choices, and that these may "delay or prevent AD." Feldman further notes that screening and individualized, preventive approaches have "unique importance in the fight against AD," and the primary care provider is in the "best position" to screen (p. 15).

Scott and Mayo (2017, pp. 323, 328) and Cordell (2013, p. 142) emphasize the importance of annual cognitive screening, explaining the requirement for this assessment in the context of Medicare's Annual Wellness Visit. Highlighting the need for early, accurate diagnosis, Hunter et al. (2015) discuss the avoidable and substantially higher healthcare costs that result from a misdiagnosis of AD in patients that actually had Parkinson' disease or vascular pathology.

Standard, Routine Cognitive Screening Sustainability

The sustainability of this approach is first facilitated by the integration of cognitive assessment into the Medicare Annual Wellness Visit. CMS has also structured reimbursement for cognitive assessment during subsequent patient encounters. This service requires evaluation of:

- cognition,
- functional ability,
- decision-making ability,
- medication regimens,
- safety,
- the caregiver's availability and willingness to provide care, and
- caregiver needs.

This assessment also requires a written care plan for addressing cognitive impairment.

As identified in the literature, there is an emphasis on the need to screen routinely and find early changes. Early identification provides an opportunity to effectively treat reversible causes of cognitive impairment, and facilitates prompt referrals for comprehensive diagnosis of irreversible processes. In addition, discovering changes when they emerge may grant the patient access to emerging therapeutic interventions, possibly including clinical trials.

Conclusion

A standard approach to the dynamics of neurocognitive impairment can positively influence public health. Currently practicing and rising health professionals must be motivated to advocate for preventive strategies in the fight against Alzheimer's disease. They must address known risk factors, and perform routine screening in the primary care setting to accomplish early identification and intervention.

Assessing cognitive function as routinely as assessing the "usual" vital signs (blood pressure, pulse,

temperature, respirations, and pain level) can focus attention on brain health, offering tools and opportunities for making the lifestyle choices now recognized as protective.

The most recent evidence suggests that the best opportunity for preventing or delaying the onset of symptomatic disease includes both 1) an individualized approach for addressing known risk factors proactively in preclinical stage, and 2) screening to identify neurocognitive impairment in its earliest stages. A routine screening process may better identify those at risk (and for whom risk-reducing strategies could be encouraged), as well as those in the earliest stages of symptomatic disease, when current and emerging interventions may be more effective. Just such a preventive and proactive approach, predicated on a routine screening process, may significantly impact the incidence of Alzheimer's disease in our aging population. •CSA

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