A Pilot Study of a Screening Process for Evaluating the Physical, Mental and Cognitive Health of Senior Physicians

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ABSTRACT: Physicians are not immune to changes that accompany aging, including decreases in physical and cognitive health and abilities. Many are calling for, or turning to, screening senior physicians for decrements in their ability to provide safe care. Our purpose was to determine the acceptability and feasibility of a pilot screening process, which evaluates the physical, mental and cognitive health of senior physicians. The screening process was developed by the University of California, San Diego, Physician Assessment and Clinical Education Program. The screen included: mental health screening (PHQ-9, GAD-7, and substance abuse screen), cognitive health screening (MicroCog™ and Montreal Cognitive Assessment [MoCA®]) and physical health screening (medical history review and physical examination). Qualitative semi-structured interviews were conducted post-screening. Thirty senior physicians participated in the pilot process, including post-screening interviews. Eight (27%) participants were judged to “require”/“may require” further evaluation after cognitive assessment. No physicians were found to have physical or mental health issues that would prevent them from practicing competently. Interviews revealed that participants felt the screening process was a positive experience that was effective, acceptable, efficient and relevant to their practice. The results of this pilot study indicate that screening physical, mental and cognitive health is considered both feasible and acceptable to senior physicians. This is important as screening the health and cognition of senior physicians is integral to the national discussion related to regulation and patient safety.

Introduction

The demographic shift in the population is resulting in an overall aging workforce, including physicians. According to the AMA Masterfile, of the 823,412 physicians in direct patient care in the United States in January 2021, 19% are aged 65 or older.1

Senior physicians are a large and essential part of the workforce and with predicted physician shortages, it would be counterproductive to have physicians exit the workforce prematurely. Physicians have various reasons for continuing to practice beyond “standard retirement years,” including professional satisfaction, a sense of purpose and meaning and financial security.2,4 Driven by these forces, physicians may be hesitant to retire and practice into their 70s and beyond. However, health and cognitive changes attendant with aging are unavoidable. Physicians are subject to the effects of the natural aging process, including decreasing physical and cognitive health, and increased age is a risk factor for poor clinical performance and competency decline.5,14 Medicine does not mandate retirement based on age as the effect of aging on individuals is highly variable.14 However, physicians may not recognize when their ability to deliver safe care has declined, and patient harm may result. As a self-regulated profession, medicine’s social contract with society mandates a responsibility to ensure competence, promote the public good and be transparent and accountable.9,14,15 Evidence suggests individual physicians have difficulty with self-assessment16-18 and as such may benefit from objective measures of their competence,14,15 including their health and cognitive function. Thus, it is up to the profession to take the lead for the development of standards for ensuring competency. State medical boards are responsible for determining if physicians who have come to their attention, regardless of age, are safe to practice. However, being able to identify potential dyscompetence in older physicians has significant positive implications for both patients and physicians alike.

Hawkins et al. (2016), along with the American Medical Association, call for the development of guidelines that are “relevant, supportive, fair, equitable and transparent, and not result in undue cost or burden to senior physicians.”8 In addition, they suggest evidence-based methodologies, where existent, be utilized, and that study continue to collect data to inform screening practices moving forward. Recently, the Society of Surgical Chairs has recommended “mandatory cognitive and psychomotor testing of surgeons by at least age 65 years, potentially as a component of ongoing professional practice evaluation.”15 To further this end, we conducted a pilot study of a screening assessment of physical, mental, and cognitive health of senior physicians and aimed to assess both the acceptability and feasibility of the process.
The University of California, San Diego (UC San Diego), Physician Assessment and Clinical Education (PACE) Program was founded in 1996 to provide clinical competency evaluations of, and remedial education to, physicians identified as having performance concerns. The PACE Program is recognized as a “good exemplar” of competency assessment20 and, to date, the program has assessed more than 1,800 physicians and provided remedial education to more than 6,000 physicians from 49 states. In 2011, the PACE Fitness for Duty Evaluation (FFDE) was developed to evaluate physicians who were suspected of impairment due to physical, cognitive or mental health problems referred to PACE by medical boards, hospital medical staffs and health systems. Cooney and Balceczak (2020) reported the experience of the Yale New Haven Hospital cognitive testing of older clinicians but did not elucidate the precise battery of testing.21 Here, for the first time, we describe in detail a pilot study in which we developed a screening regimen for senior physicians utilizing the physical and cognitive assessment tools used in the FFDE.

Methods

Pilot Participants and Recruitment
We recruited 30 physician participants aged 50 years and older — who had no prior disciplinary action from a medical board, regardless of specialty or area of practice — to participate in a health screening process. Both retired and actively practicing physicians were eligible. We cast a broader net with regard to physician age (i.e., included those under 65) as cognitive decline is highly variable.14 Since normative data on physician health and function is limited, we conducted our pilot with senior physicians from the general population rather than those who had been referred for cause to PACE. We distributed recruitment information to several San Diego medical organizations (e.g., the San Diego County Medical Society and the San Diego Academy of Family Physicians) who disseminated the information to their members via email notification. Interested physicians contacted the PACE Program and submitted an enrollment form including a formal consent.

The Screening Process
The pilot screening process evaluated physical, mental and cognitive health. The process consisted of an intake form (i.e., information regarding demographics, personal health/medical history, practice characteristics, educational history, etc.), and validated screening tools for mental health (i.e., depression screen [PHQ-9],22,23 anxiety screen [GAD-7]24,25), and cognitive health (i.e., a computerized cognitive screening test [MicroCog™],26,29 a paper-based cognitive screening test [Montreal Cognitive Assessment [MoCA®]]).30 Each participant’s physical health was also evaluated through a physical examination, including medical history, vision and hearing screen and substance-use screen (verbal only, no body fluids). The screening process occurred in-person at the PACE office in San Diego. The physical examination and MoCA® were conducted either by a nurse practitioner or physician, and the MicroCogTM was administered by a PACE staff member. All follow-up with the participants was conducted by the Director of the PACE Fitness for Duty Program. The overall time commitment was approximately four hours, including travel time. PACE faculty and staff compiled and interpreted the results of all screening tools.

We contacted each participant post-screening to inform them of their screening test results and to offer recommendations for medical follow-up if their results warranted. At this time, we also conducted semi-structured interviews with all 30 participants to understand their experience and to obtain their feedback regarding the overall screening process. We chose to conduct qualitative interviews rather than a more structured or quantitative survey, as we wanted to gain an understanding of the participants’ perceptions and experience directly through their own voices.31-33 As with all qualitative analyses, the purpose was not to make judgments on whether participants’ thoughts and feelings were valid or to generalize the findings to a larger population, but rather to focus on the particulars of their experience and understand what participants thought and felt regarding the event under study.33 Thus, these data are not quantifiable in the traditional sense of the word.31 We asked the participants two open-ended questions: (1) What did you think of the process? and (2) What are your thoughts about aging physician screening in general? We used minimal prompting to ensure free-flowing discussion, without directing the responses or conversation.

Quantitative Analysis
We used descriptive statistics to examine the participant population, including age, sex, medical school (U.S. vs. other), specialty, certification and retirement status. We looked at the relationship between retirement status and age, (including age as a continuous variable, age cohorts (50–59, 60–69, ≥70), and ≥70 vs. <70), and scores on the
Ethical Approval
The UC San Diego Human Research Protections Program provided ethical approval for this study.

Results
Participant Description and Screening Test Results
Thirty physicians participated in the pilot, of whom five (17%) were female. The average age of participants was 68.4 years, with the ages ranging from 50 to 83 years (Table 2). Only three of the 30 participants were not board-certified and 25 of 30 attended U.S. medical schools (Table 2). Half of the participants were retired. The mean number

Table 1
Conceptual Framework Employed in Thematic Analysis of Participant Interviews

| Dimensions of Quality modified from Maxwell (1984) | Interpretation and Application of Maxwell’s Dimensions of Quality to the Senior Physician Physical, Mental and Cognitive Screening Program |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Acceptability (including Equity and Access)       | The participants find the screening program appropriate/reasonable, perceived as fair (i.e., equitable) and available (i.e., accessible) to those who have need. |
| Effectiveness                                      | The participants believe the screening program meets its objectives. It is perceived as doing what it purports to do (i.e., face validity). |
| Efficiency                                         | The participants perceive that the screening program process uses resources (e.g., time, human resources, direct costs) appropriately and productively. |
| Relevance                                          | The participants believe that the screening program takes into account the needs/wants of the broader population of physicians and/or the public. The participants felt there was value in their participation. |

Table 2
Demographics and Variation by Age Group of Physician Participating in a Physical, Mental and Cognitive Screening Process for Senior Physicians (n=30)

| Participant Age | 50–59 Years | 60–69 Years | 70+ Years | All |
|-----------------|-------------|-------------|-----------|-----|
| N               | 5           | 9           | 16        | 30  |
| Female N (%)    | 0 (0)       | 3 (33)      | 2 (13)    | 5 (17) |
| Retired N (%)   | 1 (20)      | 2 (22)      | 12 (75)   | 15 (50) |
| Board Certified N (%) | 5 (100) | 8 (89) | 14 (88) | 27 (90) |
| US Medical School N (%) | 4 (80) | 7 (78) | 14 (88) | 25 (83) |
of hours worked per week for the practicing physicians was 40.8 hours (SD 18.4 hours), which ranged from 12 to 70 hours per week. Participants were from several specialty areas, with internal medicine representing the largest group (23%) (Table 3).

Participants were screened for physical health conditions that may impact their ability (e.g., potentially impacting either fine motor skill or ability to stand for extended periods of time) to practice safely. Examples of health issues reported by or found upon examination of the participants are found in Table 4. For the physicians who were currently practicing, none had a health condition that interfered with their ability to practice safely. No previously unknown physical health conditions were identified. The substance-use screening tool did not reveal concern for any of the participants.

The screen for mental health utilized standardized depression and anxiety scales. Mean scores on the PHQ-9 and GAD-7 for all participants were 1.67 (range 0–5) and 1.80 (range 0–12), respectively. The vast majority of the participants had no indications of depression or anxiety (Table 5). As a result, no further relationships between PHQ-9 and GAD-7 scores and age or retirement stats were examined.

All but one physician had normal scores (i.e., scored 26–30) on the MoCA© and eight (27%) of the physicians were judged to require/may require further evaluation after the MicroCog™ assessment (Table 5).

Neither the MoCA© nor MicroCog™ were significantly related to age when age was evaluated as a continuous variable evaluated via t-test nor as a categorical variable (i.e., age cohorts (50–59, 60–69, ≥70, and ≥70 vs. <70) as evaluated by Fisher’s Exact test. Likewise, Fisher’s Exact test revealed that neither the MoCA© nor MicroCog™ were significantly related to retirement status. Although the results of our small pilot were not statistically significant, it is interesting to note of those who require or may require further evaluation after the MicroCog™ (n=8), five were ≥70, and three were <70 years old (age range 57–83), and all but two were still working.

Table 4
Summary of Health Issues Found in Senior Physicians Participating in a Physical, Mental and Cognitive Screening Process (N=30)

| Category of Health Issue | Examples |
|--------------------------|----------|
| Senses                   | High frequency hearing loss, visual deficits |
| Musculoskeletal          | Osteoarthritis, spinal stenosis, carpal tunnel syndrome, meniscus tear, osteopenia, chronic pain, amputation of limb |
| Cardiovascular           | Cardiac disease, hypertension, hyperlipidemia |
| Pulmonary                | Asthma, chronic obstructive pulmonary disease |
| Endocrine                | Diabetes, hypothyroid |
| Gastrointestinal         | Gastroesophageal reflux disease, hernia, ulcerative colitis |
| Genitourinary            | Benign prostatic hyperplasia, prostate cancer |
| Neurologic               | History of concussion, tremor, history of cerebral vascular accident, Parkinson’s disease, migraine, insomnia |
| Hematologic/Oncologic    | Melanoma, monoclonal gammopathy |
| Psychiatric              | Depression, anxiety, attention deficit hyperactivity disorder, substance use disorder in remission |

Table 3
Specialty of Physician Participating in a Physical, Mental and Cognitive Screening Process for Senior Physicians (N=30)

| Specialty                      | N | % |
|--------------------------------|---|---|
| Dermatology                    | 2 | 7 |
| Otolaryngology                 | 1 | 3 |
| Emergency Medicine             | 2 | 7 |
| Family Medicine                | 2 | 7 |
| Internal Medicine/Internal Medicine Specialties | 7 | 23 |
| Neurology                      | 1 | 3 |
| Obstetrics/Gynecology          | 2 | 7 |
| Pediatrics                     | 4 | 13|
| Psychiatry                     | 3 | 10|
| Public Health                  | 1 | 3 |
| Radiology                      | 1 | 3 |
| Surgical Specialty             | 4 | 13|
| Total                          | 30| 100 |
Table 5
Mental and Cognitive Screening Test Results
Process of Participating Senior Physicians (N=30)

| Test       | Result                  | N (%) |
|------------|-------------------------|-------|
| PHQ-9      | No Depression (0-4)     | 27 (90) |
|            | Mild Depression (5-9)   | 3 (10)  |
| GAD-7      | No Anxiety (0-4)        | 24 (80) |
|            | Mild Anxiety (5-9)      | 5 (17)  |
|            | Moderate Anxiety (10-14)| 1 (3)   |
| MoCA®      | Abnormal (<25)          | 1 (3)   |
|            | Normal (≥26)            | 29 (97) |
| MicroCog™  | Further Evaluation Required or May Be Required | 8 (27) |
|            | Further Evaluation Not Required | 22 (73) |

Analysis of Post Screening Participant Interviews

Acceptability

Overall, participants all felt that the screening process was a positive experience. Participants described the screening process as an "interesting, enjoyable process" [Participant (P) 18], "a very good experience...nice experience overall" [P24], and "worthwhile...reasonable." [P23] Several participants indicated that they would like "to come back for retesting periodically" [P17] and that they "loved the process...want to do it again." [P11] There were no negative comments from participants regarding their overall assessment of the experience.

Participants indicated that screening, broadly speaking, was a "good idea to do this type of assessment for aging doctors" [P3] and that "screening is a good idea if physicians buy in." [P28] There were some differences in opinions regarding age-based screening specifically. Several commented that screening should be a requirement and that "screening at age is critical." [P21] Some offered an age target ("...should be 65 or 70" [P7]), while others were unsure of the age ("Not sure if 65 or 70 is the right age, but needs to be done for everyone" [P13]). However, most participants indicated that such testing should not be age-restricted and that all physicians, regardless of age, should undergo screening ("maybe a good idea to make it a generalized assessment for all and therefore ageism wouldn’t be an argument" [P28] and "don’t need to be biased by age, but it is a figuring factor" [P1]). Several stated that "it would be valuable to screen doctors universally" [P14] and "screening should be universally applied." [P4] Others went so far as to indicate that screening "should be mandatory to maintain a license" [P13], "compulsory testing may be a good idea" [P26], and "process should be applied universally...specifically a formalized cognitive evaluation." [P22] Several participants did note some of the potential drawbacks of mandatory screening. One participant, although in favor of screening all physicians, indicated that "as far as universal application...it gets touchy...it gets ugly" [P5]. Several others indicated that although there is value in the screen, "docs have a lot of hoops to jump through and this would be another hoop" [P10] and "I am not in favor of adding another hoop for physicians to jump through" [P15].

Effectiveness

Participants felt that the screening test and its components evaluated cognitive and physical health. One participant indicated that “the protocol evaluated competence well in the cognitive area and health” [P4]. Others indicated, “test did a good job evaluating health and wellness...not specific to [any one] physician...and applicable to many” [P13] and “it’s a good battery for age based screening” [P20]. Several participants made suggestions for improvement, including “maybe add coordination testing for proceduralists” [P16], “manual dexterity for proceduralists” [P29] or adding “patient cases to review…more medically related stuff” [P6].

Efficiency

There were no objections to the screening process. All participants felt the staff were very helpful during the screening. They described them as “very professional” [P7] and “superb ...excellent in helping out” [P13]. Most participants liked the overall process, indicating that it was “simple and straightforward...not intrusive” [P16], “process was seamless” [P19], “low key” [P20], and “efficient and enjoyable...want to come back” [P23]. One participant particularly liked “having independent body do the testing” [P1]. Two participants indicated that they felt it was “a bit long ...if it can be streamlined"
some participants where they wished to know “how the data will help other physicians” [P9] and felt that because the medical profession is “way over regulated” [P15], mandatory screening “without demonstrating benefit to patients or physicians” [P15] should not be pursued.

Discussion

While the numbers in this pilot study were low, observations made can guide future large-scale studies regarding methodology of the screening process. There was little variability in participants

Relevance

Participants saw value in the screening process and called it “worthwhile” [P23 and P29]. Having feedback on their capabilities was viewed as “beneficial...a barometer” [P1] and were “thankful for the feedback...will pursue additional follow-up” [P2]. One participant indicated he was happy to know that for his age he was “doing OK” and another felt that it was “good for physicians to have this knowledge to inform their decisions about practice” [P25]. The broader value to the profession and public were also noted by several participants. One participant indicated that “as a patient, wouldn’t want to go to an 80-year-old that hadn’t been evaluated for capability and being up to date” [P3] and another felt the screening program was “a benefit for patients and for doctors in that it protects both” [P4]. The external objective data was thought to be helpful for broader activities as well in that for “doctors who have difficulty, the objective data will be helpful to credentialing” [P29] and that they would like “to see physicians take the lead rather than a legislative mandate from outside medicine” [P10]. There was some skepticism expressed by

AS PHYSICIANS ARE WORKING LONGER INTO THEIR GOLDEN YEARS, THE CONCERN REGARDING COGNITIVE DECLINE AND PATIENT IMPACT INCREASES. WE HOPE LARGER STUDIES MAY BETTER HELP US TO UNDERSTAND THIS RELATIONSHIP IN THE FUTURE.

NONE OF THE PARTICIPANTS WOULD HAVE BEEN SENT FOR FURTHER EVALUATION VIA FITNESS-FOR-DUTY SCREENING BASED ON THEIR HISTORY AND PHYSICAL EXAMINATION...THE PICTURE CHANGED WITH REGARD TO THE SCREENING OF COGNITIVE HEALTH.

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70-year-old age group. However, the under-70-year-old age group also had participants needing further evaluation, the youngest of whom was 57. Many hospitals and medical organizations, as well as medical regulatory authorities in two provinces in Canada (Ontario and Quebec), target age 70 as the threshold for assessment. Given our findings, consideration might be given to screening cognition at younger ages. Additionally, as listed above, 75% of the participants recommended for further cognitive evaluation were still working, thus the important potential patient impact becomes a greater concern. As physicians are working longer into their golden years, the concern regarding cognitive decline and patient impact increases. We hope larger studies may better help us to understand this relationship in the future.

The self-selection of the pilot participants is worth noting. Self-selection in our pilot study should logically have a bias toward favorable findings. Yet even in this self-selected group, over a quarter of participants required further assessment. This should not be surprising, as evidence suggests that physicians have poor ability in assessing and caring for their own health and wellbeing—including neglecting to have physical examinations and procrastinating in seeking treatment.18 Thus, external sources of data to inform physicians of their own practice risks—regardless of the causes of risk—are essential for continued safe practice at all ages.19

With more and more health systems requiring screening for continued privileging, the face validity and acceptance by the profession of such processes is critical. With more and more health systems requiring screening for continued privileging, the face validity and acceptance by the profession of such processes is critical. The results of this pilot study concluded that the screening battery for senior physicians was acceptable and feasible. The participants, while a self-selected group, had confidence that the process was reasonable and not overly burdensome. From the interviews, the participants overall opinion was that the testing was a reasonable representation of their health and abilities and gave them information that was useful. While some had concerns about adding an additional requirement to the practice of medicine for colleagues, and some had concerns with the computerized cognitive testing, the great majority concluded that they and other physicians would benefit from the knowledge gained to make informed decisions regarding their health, cognition and decision-making when considering continued medical practice.

Conclusion

In conclusion, the need for physician-directed assessment of senior colleagues is in line with our professional obligation to patient safety. National dialogue for increased accountability by the public, medical regulators and policy makers drives the need for action. Self-regulation dictates that physicians proactively address the issue and help colleagues recognize potential declining ability to practice medicine safely. A proposed methodology described in this article is in place for screening senior physicians. While early in the process, the results of this pilot indicated that the acceptability and feasibility of the PACE health screening for senior physicians is reasonable and valuable, as indicated by the participants. However, further study must ensue in order to continue to validate the findings of the screening process.

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