Evaluation of the Aging Physician

David E.J. Bazzo, M.D.
Clinical Professor of Family Medicine and Public Health
Director, Fitness for Duty, UC San Diego PACE Program

Children’s Hospital of Orange County
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David E.J. Bazzo, M.D. has no relevant financial relationships to disclose that would present a conflict of interest.
AMA Masterfile: Physicians Past, Present and Future

- **1985**
  - Number in active practice = 476,683
  - Mean age = not known
  - % 65 or older = 9.4

- **2005**
  - Number in active practice = 672,531
  - Mean age = 50.0 (SD = 11.4)
  - % 65 or older = 11.7 (n = 78,340)

- **2014** (FSMB data)
  - Number in active practice = 916,264
  - Mean age = 52; 55 m, 47 f
  - % 60 or older = 30.9 (n = 282,472)
  - % 70 or older = 10.9 (n = 99,554)

- **2020**
  - Number in active practice 1,050,000 (estimate)
  - % 65 or older = 18 (n = 189,000)
  - % 55 or older = 39 (n = 409,500)
Risk Factors Other Than Aging That May Affect Clinical Competence

- Poor performance in medical school
- Solo practice
- Lack of hospital privileges
- Lack of ABMS board certification
- Out-of-scope practice
- Clinical volume

- New knowledge/procedural skills
- Fatigue/stress/burnout
- Health issues—mental and physical—may or may not relate to aging

Stephen H. Miller, MD, MPH Coalition for Physician Enhancement Meeting, November 10-11, 2011
Responsibility: 
Societal/Professional Contract – 19th Century

As a self-regulated profession, medicine is granted substantial societal privilege and, in return, is expected to set standards for entering practice, for sustaining privilege to practice, and for sanctioning and removing from practice physicians (5%–10%) who neglect or abuse that privilege.
Responsibility

96% • of physician responders agreed that impaired or incompetent physicians should be reported to the appropriate authorities

45% • reported that they had encountered such colleagues and failed to report incompetent colleagues
“Normal” changes associated with aging

- Atrophy of brain
- Decline in number of brain neurons
- Benign senescent forgetfulness
- Decreased lean muscle mass
- Decreased visual acuity

- Diminished hearing
- Decreased reflex time
- Osteoporosis
- Arteriosclerosis
- Decreased compliance of arteries and left ventricle
Diseases associated with aging

- Myocardial infarction
- Stroke
- Most cancers
- Dementia
- Parkinson’s Disease
- Other neurodegenerative disorders
Petersen RC. Mild cognitive impairment
NEJM 2011; 364: 2227-34.

- In persons older than 65 in the general population the prevalence of mild cognitive impairment (MCI) is about 10% and perhaps slightly more
- In the population with MCI the annual progression to dementia, most commonly Alzheimer’s disease, is about 5% to 10%

- Independent complete history and physical examination, to include screening vision and hearing
- Assessment of mental health using inexpensive standardized tools
- Cognitive assessment (Microcog or MOCA)
- Peer review (?)
- Goals would be safe patient care, quality improvement, maximizing physician health
- If needed, accommodations where possible; including “winding down,” transitioning to retirement
Comment

• Setting an age-based standard for cessation of practice makes no scientific sense

• Humans age in a very heterogeneous way

• To the extent we can measure such things, aging brings experience, compassion, and wisdom
Unintended Consequences of Age-Based Competence Decisions/Mandatory Retirement

• Contribute to predicted physician shortfall as population ages and their needs for medical care increase
• Loss of contributions of medical wisdom and experience
• Economic losses: society paid for medical education; delaying retirement
• Beware the “law of averages”—old does not necessarily mean incompetent
• Age may be a risk factor, but it is not the only one
• Age Discrimination in Employment Act (ADEA)
California Public Protection and Physician Health Inc. (CPPPH)

- Funded by CMA, CHA, specialty societies, county medical societies, and professional liability insurance carriers.
- Mission Statement: “…to develop a comprehensive statewide physician health program so that California does not remain one of the few states without such a resource.”
- Outreach: Regional Workshops on “Neuropsychological and Psychological Factors” and “Legal Aspects” relating to Aging Physicians
AMA – 2015 Report:
Assuring Safe and Effective Care for Patients by Senior/Late Career Physicians

• “Physicians must develop guidelines/standards for monitoring and assessing both their own and their colleagues’ competency.

• Formal guidelines on the timing and content of testing of competence may be appropriate and may head off a call for mandatory retirement ages or imposition of guidelines by others.”
The Canadian experience: Quebec

• 2001–2010, 1,618 physicians were contacted 2 to 3 months in advance of an onsite visit in which their practice would be reviewed.
  o Level 0: No action, satisfaction letter
  o Level 1: Recommendations
  o Level 2: Recommendations and control visit follow-up
  o Level 3: Refresher course or retraining or limitation (retirement was a frequent option with this result)
  o Level 4: Cancellation of licensure

• Physicians over the age of 70 had three times higher rate of cancellation (31 percent) compared to the group less than 70 years old (10 percent).

• 65 to 69 showed only slightly higher rate of cancellation (13 percent) but had nearly double the rate of Level 3 recommendation than for the physician group less than 65 years old (18 percent vs. 10 percent)
The Canadian experience: Ontario

- 22% of physicians in the group over 75 years old had gross deficiencies in their practice
- 16% in the 50-to-74 year-old group had deficiencies
- 9% of physicians under the age of 49 had deficiencies

- When the age categories were split differently:
  - 55-and-older physicians had poorer performance than physicians under age 55
  - Surprisingly, there was close to no difference in physicians’ performance outcomes between the 55-to-69 year-old group and the group over 70 years old
Possible models for an aging physician screening assessment
# Screening Test vs. Diagnostic Test

Screening tests are offered to asymptomatic people who may or may not have early disease or disease precursors and test results are used to guide whether or not a diagnostic test should be offered.

<table>
<thead>
<tr>
<th></th>
<th>Diagnostic test</th>
<th>Screening test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Result</strong></td>
<td>The cutoff is set towards high specificity, with more weight given to diagnostic precision and accuracy than to the acceptability of the test to patients</td>
<td>The cutoff is set towards high sensitivity. As a result many of the positive results are false positives. This is acceptable, particularly if the screening test is not harmful or expensive.</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>Patients have symptoms that require accurate diagnosis and therefore higher costs are justified.</td>
<td>Since large numbers of people will be screened to identify a very small number of cases, the financial resources needed must be justified carefully.</td>
</tr>
<tr>
<td><strong>Result of the test</strong></td>
<td>The test provides a definitive diagnosis (e.g. a definite diagnosis of Meningitis through blood test or lumbar puncture.</td>
<td>The result of the test is an estimate of the level of risk and determines whether a diagnostic test is justified.</td>
</tr>
<tr>
<td><strong>Invasiveness</strong></td>
<td>May be invasive.</td>
<td>Often non-invasive.</td>
</tr>
<tr>
<td><strong>Population offered the test</strong></td>
<td>Those with symptoms or who are under investigation following a positive screening test.</td>
<td>Those at some risk but without symptoms of disease.</td>
</tr>
<tr>
<td>Hospital/Group</td>
<td>Screening Commences At</td>
<td>Frequency of Assessment</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>University of Virginia Health System</td>
<td>Age 70</td>
<td>Every year after age 75</td>
</tr>
<tr>
<td>Munson Healthcare (Michigan)</td>
<td>Age 65, then 70</td>
<td>At reappointment</td>
</tr>
<tr>
<td>Driscoll Children’s Hospital (Corpus Christi, TX)</td>
<td>Age 70</td>
<td>At reappointment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharp Rees-Steely (San Diego, CA)</td>
<td>Age 70</td>
<td>Every year after age 70</td>
</tr>
</tbody>
</table>
Overall Rationale for 
PACE Aging Physician Assessment (PAPA)

• Reliable
• Easy
• Inexpensive
• Broad Acceptance
Screening Battery

• **Cognitive screen**
  o MicroCog™
  o MoCA®

• **Intake form**
  o e.g. PACE, 87 questions

• **History & physical exam**
  • Vision, hearing

• **Screen for substance abuse, depression and anxiety**
  o PHQ-9
  o GAD-7

• **Quality data:**
  o OPPE (Ongoing Professional Practice Evaluation), FPPE (Focused Professional Practice Evaluation), peer review, proctoring
  o Simulators, dexterity testing (peg board, suturing)
**Rationale for MicroCog™**

- Designed for physicians
- Norm groups based on education level
- Data comparison between age-based norms and general populations
# Rationale for MicroCog™ – Summary Index Table

## Part 1

<table>
<thead>
<tr>
<th>Age and Education Corrected Norms</th>
<th>Sum</th>
<th>Scaled Score</th>
<th>%ile</th>
<th>95% Conf. Interval</th>
<th>Qualitative Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Age: 75 - 79, Education: &gt; High School)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level 3 - Indexes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Cognitive Functioning (GCF)</td>
<td>213</td>
<td>108</td>
<td>70</td>
<td>101-115</td>
<td>Average</td>
</tr>
<tr>
<td>General Cognitive Proficiency (GCP)</td>
<td>100</td>
<td>100</td>
<td>50</td>
<td>93-107</td>
<td>Average</td>
</tr>
<tr>
<td><strong>Level 2 - Indexes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Processing Speed (IPS)</td>
<td>83</td>
<td>89</td>
<td>23</td>
<td>82-96</td>
<td>Average</td>
</tr>
<tr>
<td>Information Processing Accuracy (IPA)</td>
<td>151</td>
<td>124</td>
<td>95</td>
<td>116-132</td>
<td>Above Average</td>
</tr>
<tr>
<td><strong>Level 1 - Indexes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention/Mental Control (Attn)</td>
<td>81</td>
<td>114</td>
<td>82</td>
<td>104-124</td>
<td>Average</td>
</tr>
<tr>
<td>Reasoning/ Calculation (Reas)</td>
<td>57</td>
<td>96</td>
<td>39</td>
<td>84-108</td>
<td>Average</td>
</tr>
<tr>
<td>Memory (Mem)</td>
<td>77</td>
<td>122</td>
<td>93</td>
<td>112-132</td>
<td>Above Average</td>
</tr>
<tr>
<td>Spatial Processing (Spat)</td>
<td>37</td>
<td>94</td>
<td>34</td>
<td>82-106</td>
<td>Average</td>
</tr>
<tr>
<td>Reaction Time (RT)</td>
<td>73</td>
<td>115</td>
<td>84</td>
<td>108-122</td>
<td>Above Average</td>
</tr>
</tbody>
</table>
# Rationale for MicroCog™ – Summary Index Table

## Part 2

<table>
<thead>
<tr>
<th>Reference Group Norms</th>
<th>Sum</th>
<th>Scaled Score</th>
<th>%ile</th>
<th>95% Conf. Interval</th>
<th>Qualitative Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 3 - Indexes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Cognitive Functioning (GCF)</td>
<td>161</td>
<td>75</td>
<td>5</td>
<td>68-82</td>
<td>Low Average</td>
</tr>
<tr>
<td>General Cognitive Proficiency (GCP)</td>
<td>70</td>
<td>79</td>
<td>8</td>
<td>72-86</td>
<td>Low Average</td>
</tr>
<tr>
<td><strong>Level 2 - Indexes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Processing Speed (IPS)</td>
<td>44</td>
<td>59</td>
<td>&lt;1</td>
<td>52-66</td>
<td>Below Average</td>
</tr>
<tr>
<td>Information Processing Accuracy (IPA)</td>
<td>122</td>
<td>102</td>
<td>55</td>
<td>93-111</td>
<td>Average</td>
</tr>
<tr>
<td><strong>Level 1 - Indexes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention/Mental Control (Attn)</td>
<td>65</td>
<td>93</td>
<td>32</td>
<td>81-105</td>
<td>Average</td>
</tr>
<tr>
<td>Reasoning/ Calculation (Reas)</td>
<td>47</td>
<td>80</td>
<td>9</td>
<td>68-92</td>
<td>Low Average</td>
</tr>
<tr>
<td>Memory (Mem)</td>
<td>54</td>
<td>92</td>
<td>30</td>
<td>81-103</td>
<td>Average</td>
</tr>
<tr>
<td>Spatial Processing (Spat)</td>
<td>19</td>
<td>59</td>
<td>&lt;1</td>
<td>50-71</td>
<td>Below Average</td>
</tr>
<tr>
<td>Reaction Time (RT)</td>
<td>43</td>
<td>79</td>
<td>8</td>
<td>71-87</td>
<td>Low Average</td>
</tr>
</tbody>
</table>
Participants

PAPA Participant Practice Status by Age Group

- **Retired**
- **Practicing**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Retired</th>
<th>Practicing</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-59 (n=5)</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>60-69 (n=9)</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>70+ (n=16)</td>
<td>12</td>
<td>4</td>
</tr>
</tbody>
</table>

UC San Diego
School of Medicine

Physician Assessment and Clinical Education (PACE) Program
Results of cognitive testing: MicroCog™

Outcome Based on PAPA Participant MicroCog™ Scores

- 73%: Does Not Need Further Evaluation (n=22)
- 23%: Needs Further Evaluation (n=7)
- 4%: May Need Further Evaluation (n=1)
MoCA© vs. MicroCog™

Normal score ≥26

PAPA Participant MoCA© Scores

<table>
<thead>
<tr>
<th>MoCA© Score</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>2</td>
</tr>
<tr>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>30</td>
<td>13</td>
</tr>
</tbody>
</table>

Physician Assessment and Clinical Education (PACE) Program
Practicing doctors who needed further evaluation

*Based on MicroCog™ results

PAPA Participants with recommendations for further evaluation and may need further evaluation by practice status (n=8/30)

- Practicing (n=6)
- Retired (n=2)
Age group recommendations

Number of PAPA Participants with Recommendations for Further Evaluation and May Need Further Evaluation by Age Group

- Number of Participants with Recs for Further Eval
- Number of Participants Who May Need Further Eval

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Participants with Recs</th>
<th>Participants Who May Need Further Eval</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-59</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>60-69</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>70+</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

*Based on MicroCog™ results
Participant comments

• What was their opinion of the process?

• Should this type of screening be applied universally?
<table>
<thead>
<tr>
<th>PAPA Comments</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Process/thorough</td>
<td>23</td>
</tr>
<tr>
<td>Universal screening</td>
<td>14</td>
</tr>
<tr>
<td>Service</td>
<td>6</td>
</tr>
<tr>
<td>Surgical field/procedure/simulator</td>
<td>5</td>
</tr>
<tr>
<td>Age-based screening is critical</td>
<td>5</td>
</tr>
<tr>
<td>Retesting in future</td>
<td>4</td>
</tr>
<tr>
<td>Beneficial</td>
<td>3</td>
</tr>
<tr>
<td>Compulsory testing</td>
<td>3</td>
</tr>
<tr>
<td>Physician take lead vs. mandated process</td>
<td>2</td>
</tr>
<tr>
<td>Independent body do testing</td>
<td>1</td>
</tr>
<tr>
<td>MicroCog™ fun</td>
<td>1</td>
</tr>
<tr>
<td>Thankful for feedback</td>
<td>1</td>
</tr>
<tr>
<td>PAPA Comments</td>
<td>Number</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Computer problems/didn't understand</td>
<td>5</td>
</tr>
<tr>
<td>Tests tedious/fatigue during MicroCog™</td>
<td>5</td>
</tr>
<tr>
<td>Universal application touchy/over-regulated/not another hoop</td>
<td>3</td>
</tr>
<tr>
<td>Cost concern</td>
<td>1</td>
</tr>
<tr>
<td>Longer than expected</td>
<td>1</td>
</tr>
</tbody>
</table>
PACE Aging Physician Assessment - Data

• Started July 2014
• 27 evaluations to date
  • 6 participants with 2 evaluations (peds)
  • 4 female – 1 participant with 2 evaluations
• Youngest 69.0
• Oldest 76.2
  • Average 72.4
PAPA - data

- Pediatrics – 18 (6 with two evaluations)
  - Medical genetics – 2
  - Adolescent medicine – 1
- Radiology – 3
  - Nuclear medicine - 1
- Orthopedic surgery – 2
- Urgent care – 1
- Otolaryngology – 1
- Internal medicine – 1 (Rheumatology)
- Plastic surgery – 1

*All but 1 board certified*
PAPA - data

• 7 screens with recommended further evaluation
  • 4 with full neuropsychological assessment
    • 3 found Fit
      • 71.9 yo male pediatrics
      • 70.0 yo female pediatrics
      • 72.8 yo male radiology
    • 1 found Unfit
      • 76.0 yo male orthopedics
  • 3 pending full neuropsychological assessment
    • 71.1 yo male otolaryngology
    • 69.6 yo female pediatrics – medical genetics
    • 73.9 yo male plastic surgery
Screening location?

• Home institution
  o Advantage: close, control of process
  o Hurdle: bias, resources

• Local/regional center
  o Advantage: relatively close, standardized
  o Hurdle: loss of control, cost

• National center
  o Advantage: standardization, study
  o Hurdle: cost, distance
Accommodations

• Can a surgeon with early mild cognitive impairment first-assist at surgery?

• What if something bad happened and that became generally known, even if it were not the surgeon’s fault?
Accommodations:
Severe hearing loss

• In a pediatric cardiologist in 1950?
• In a pediatric cardiologist in 2015?
Criticisms of age-based physician screening and assessment

- Tools and processes used have not been directly tested on physicians in a controlled, prospective trial
- It is unclear who will do the screening
- It is unclear who should “own” the results
- The motivation of the assessors or those ordering the assessment may not always be pure
- The assessors or those ordering the assessment may not have clear plans for how to manage the results
Questions

• Thank you

• dbazzo@ucsd.edu