Think for yourself:
The wisdom of preparing an occupational living will

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I have nothing to disclose

Introduction
“Don’t let it bring you down”

Bob Dylan’s Dream

While riding on a train goin’ west
I fell asleep to take my rest
I dreamed a dream that made me sad
Concerning myself and the first few friends I had...

With haunted hearts through the heat and cold
We never thought we could ever get very old
We thought we could sit forever in fun
Our chances really was a million to one.

As easy it was to tell black from white
It was all that easy to tell wrong from right
And our choices they were few and the thought never hit
That the one road we traveled would ever shatter and split...

I wish, I wish, I wish in vain
That we could sit simply in that room again
Ten thousand dollars at the drop of a hat
I’d give it all gladly if our lives could be like that.
Vignette 1—Introduction to clinical medicine

• “Why look for trouble?”

Vignette 2—driving

• 73 yo previously very high functioning man presents with insidious decline in cognitive and functional abilities over several years

• Multi-domain cognitive impairment: memory, attention/executive function, and visuospatial function. MMSE 22/30

• Patient has gotten into 2 minor MVAs over the last year

• He and his wife (who doesn’t drive) help care for their grandchildren
Vignette 2—driving

- Long discussion with the patient about his driving
- Refused to get a formal driving evaluation
  - “I have driven my entire life.”
  - “My driving is fine.”
- His wife adds that if the patient can’t drive, how would they get around.
Vignette 2--driving

• We often try to appeal to remaining cognitive capacity
  • If you get into an accident while your grandchildren are in the car, you’d never be able to forgive yourself
  • OR
    – If you get into an accident through no fault of your own, you’ll be blamed.
    – Your reputation will be ruined.
    – You may be bankrupted by a lawsuit.
• “That would be very bad.”
• OK. So, we’ll arrange for you have the driving evaluation.

Vignette 2--driving

• “No Way”

• In the past, this patient was reasonable person who embraced safety
• Not being allowed to drive is an assault on his identity, independence, integrity
  – Not giving driving up without a fight
  – Driving is a symbol of freedom in America
• The patient’s neurological condition
  – undermined his level of self-awareness and insight
  – reduced his ability to appreciate the consequences of his decision

Vignette 3—Professor in her mid 60s

• Diagnosed with mild-moderate Alzheimer’s disease
• Continued to give lectures, supervise, and consult
• Cognitive testing revealed declining mental status
• Concerns about cognitive impairment and progressive problems carrying out professional responsibilities discussed with the patient
• She insisted her problems were only “minor”
• These minor problems included
  – Delivering the same prepared lecture twice in one week
  – Recurring bowel incontinence even during interactions with her students
For many physicians, work is a calling

- Work is central to our identity
- Characteristics that contribute to being a good physician may make it hard to stop working
- Retirement or even slowing down can lead to loss of our sense of purpose and fear of becoming irrelevant

High percentage of MD feel burnt out?

- MDs: traits of compulsiveness and perfectionism
  - Doubt
  - Guilty
  - Exaggerated sense of responsibility
- Marked devotion to work to the exclusion of leisure activities, vacations outside of conferences, and friendships
- Dread of retirement

Burn out does not necessarily translate into early retirement
Are older or younger physicians more burned out?

The Physician Workforce Is Getting Older

Are older MDs well-suited to continue practicing?

- Age- (and disease-) related changes in cognition and function
- Age-related changes in physician performance
Functions that can improve with age

- Wisdom
- Compassion
- Management of Stress
- Resilience

Meeks,Jeste, 2009; Grossman et al., 2010; Pezah et al. 2002.

Functions that are relatively stable with age

- “Crystalized Intelligence”
- Established Verbal Skills
- Semantic Knowledge
- Recall of Previously Learned Information
- Domain-specific, experientially based knowledge
- Pattern Recognition based on prior experience

Eva, 2002; Moutier et al., 2013; Durning et al 2010

Functions that commonly decline with age

- “Fluid intelligence”
- Speed of Mental Processing
- Rapid Retrieval of Information (e.g., proper names)
- Executive Function (working memory, mental flexibility, inhibition of irrelevant stimuli)
- Visual Perceptual Abilities
- Hearing, visual acuity, manual dexterity

Increased reliance on non-analytic cognitive processes

- Wealth of experience/pattern recognition can lead to more accurate diagnoses
- But are associated with unrecognized diagnostic errors due to premature closure and a reduced analytic approach

Exe, 2002; Moutier et al., 2013; Durning et al. 2010

Age-related declines in MD assessment performance

- Scores on a computerized cognitive test declined >20% between 40 and 75 yo
- A systematic review of 62 studies: increasing years in practice
  - lower adherence to evidence-based standards of care
  - decreasing knowledge/worse patient outcomes
- Ontario College of Physicians/Surgeons Peer Assessment
  - deficiencies increase with age
- Aging in surgeons: increased morbidity and/or mortality for thyroidectomy, CEA, TKR, CABG
- Older surgeons less likely to integrate new modalities and recommendations for care

McAuley et al. 1998; Choudhry et al., 2000; O’Neil et al., 2005; Hartz et al., 1999; Waljee et al., 2006; Neumayer et al., 2005; Wang & Winfield, 2004; Powell & Whitty, 1994

Age-related declines in MD assessment performance

- Knowledge examinations
  - General medical or surgical knowledge
  - Practice-specific knowledge
  - Lower scores represent failure to acquire new/changing knowledge, not the loss of their more stable knowledge base.

Choudhry et al., 2000; Norcini et al., 1985; Day et al., 1980
Variance in cognitive performance increases with aging

- Some 60+ yo MDs perform as well as those under age 40
- Likelihood some individuals with incipient dementia are included in normative data
  - Lower mean scores, overestimate the variance, exaggerate the negative effect of “normal aging” on cognitive performance
  - The distinction between normal and pathological aging is contaminated

Eva, 2002; et al., 1996

Dementia Prevalence

- ~5.7 million people with dementia in the US
- 15-20% of adults 65 and older suffer from mild cognitive impairment
- Numbers expected to double every 20 years
- Estimated annual global cost: USD 818 billion
- Age remains the most important risk factor
- Individuals over age 60 – fastest growing age group on earth

Growth of U.S. Older Adult Population

http://iucar.iu.edu/generations/growth.html
# Causes of Dementia

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<thead>
<tr>
<th>Neurodegenerative</th>
<th>Vascular Dementia</th>
<th>Inflammatory/ Infectious</th>
<th>Metabolic/ toxins</th>
<th>Neoplastic/ Structural</th>
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<td>Multiple sclerosis</td>
<td>Hyperthyroid</td>
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<td>Dementia with Lewy bodies</td>
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<td>Bipolar disorder</td>
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<td>Vascular secondary to other autoimmune diseases</td>
<td>Uremia/ dialysis</td>
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<td>Ischemic stroke</td>
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# Dementia – Definition

- Decline in cognitive or behavioral functioning
- Interferes with activities of daily living (ADLs) appropriate for a patient’s age and background
- Not simply due to a acute delirium or confusional state

# DSM-5

## Major Neurocognitive Disorder

1. Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition) based on:

2. The cognitive deficits interfere with independence in everyday activities.

3. The cognitive deficits do not occur exclusively in the context of a delirium.

4. The cognitive deficits are not better explained by another mental disorder (e.g., major depressive disorder, schizophrenia).
Mild Cognitive Impairment

- Cognitive concerns by patient, informant, or clinician
- Objective cognitive impairment in 1+ domains (memory, executive fx, language, visuospatial fx)
- Preservation of independence in functional abilities
- Not demented

Adapted from Rowe C et al Neurobiology of Aging 2010

Alzheimer’s Disease

Preclinical Alzheimer’s Disease

Prevalence (%) of $A_b^+$ PET in CN

Adapted from Rowe C et al Neurobiology of Aging 2010

Tobias, 2008

Prevalence of plaques in CN

Davies, 1988, n=110
Braak, 1996, n=551
Sugihara, 1995, n=123

Prevalence of AD Dementia
Skeides, 2008

DSM-5
Minor Neurocognitive Disorder

1. Evidence of modest cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition).

2. The cognitive deficits do not interfere with capacity for independence in everyday activities (i.e., complex IADLs are preserved, but greater effort, compensatory strategies, or accommodation may be required).

3. The cognitive deficits do not occur exclusively in the context of a delirium.

4. The cognitive deficits are not better explained by another mental disorder (e.g., major depressive disorder, schizophrenia).

Estimates of MCI and Dementia in practicing US Physicians 65 years and older

• ~16,500 with MCI

• ~9,500 with Dementia

We have some control over reducing the risk for cognitive decline and dementia
### The value of working into old age

- **Benefits to individuals**
  - Intellectual and social stimulation
    - Promotes brain health
    - Counteracts cognitive decline
  - Ongoing source of personal meaning
- **Benefits to organizations/institutions**
  - Accumulated knowledge and experience of seasoned workers
  - Reservoir of clinical wisdom and experience
  - One strategy for dealing with the shortage of MDs
Loss of our mental faculties

- Among the most feared aspects of getting older
- Physicians place considerable value on being smart and cognitively able

Page et al., 2018; Ostergren et al., 2017; French et al., Molden & Maxfield, 2017

Autonomy

- We place a great value on autonomy
  - Self-governance
  - Ability to make our own decisions and live by our own rules
- Often don’t take necessary steps to exercise it
- Avoid thinking about unpleasant possibilities
- All of us will die; more than half of us don’t have a will
- Most Americans have not designated a health-care proxy

Occupational Living Will
Advance Directives for one’s professional life

- Opportunity to consider our individual threshold of cognitive decline signaling the need to alter/stop working
- Extreme positions regarding when to retire
  - No longer performing our highest level of competence
  - Work until the day we die, regardless
**Occupational Living Will**

**Advance Directives for one’s professional life**

- Lay the groundwork for handling a period of gradual mental decline/transitional plan
  - Accommodations, increased support, reduced responsibilities

**Occupational Living Will**

- Craft a written document
- Share the document with others we trust
- Record a video that communicates our wishes
- Identify a few peers who can fairly assess our functioning
- Empower these individuals to share their observations with us.
- Have a plan for evaluating whether our decline exceeds the bounds of normal aging

**More details about the process**

- Create a list one’s responsibilities/duties
- Consider how decline in various cognitive realms might manifest themselves
- Determine one’s threshold for decline
- Think about possible accommodations at work
- Consider who is most appropriate to monitor our performance
More details about the process

- Create a list one’s responsibilities/duties
- **Consider how decline in various cognitive realms might manifest themselves**
- Determine one’s threshold for decline
- Think about possible accommodations at work
- Consider who is most appropriate to monitor our performance

Examples of potentially meaningful decline in attention/executive control

- Frequently derailed by task-irrelevant distractors
- Surprised by the occurrence of events that should have been anticipated
- Unaware of deadlines and/or responsibilities
- Unable to carry out more than one thing at a time
- Increasingly choosing to take the easiest, least demanding path
- Unable to learn important new technologies, even after making a concerted effort
- Less and less able to make decisions

Examples of potentially meaningful decline in memory

- Forgetting the details (and even the gist) of history and management of patients, even after re-reading past notes
- Failing to remember patients who have been followed for a long time
- Increasing difficulty learning the names and indications of new medications
- Failing to recall key information from articles one has reviewed, even after re-examining them
- Failing to remember important conversations (even after being cued)
- Forgetting basic facts pertinent to the practice of one’s specialty
Examples of potentially meaningful decline in language

- Progressive word finding difficulties (to the point in which it becomes extremely difficult to communicate one’s thoughts)
- Growing problems actively participating in conversations, discussions, and repartee
- Increasing struggles rapidly understanding complex text
- Spending excessive time completing written tasks that used to be routine

Examples of potentially meaningful decline in social/emotional processing

- Increasing lack of understanding of the motivation or behavior of other people
- Increasingly bewildered by the actions/ intentions of others
- Growing failure to understand/ empathize with patients
- Inability to regulate one’s emotions
- Outbursts or other inappropriate behaviors

Other Cognitive and Functional Realms

Examples of potentially meaningful decline in motivation

- Increasing apathy/disengagement (not due to depression)
- Decline or loss of enjoyment, meaning, or effort
- Decreasing interest in or curiosity about people, neurology, cognitive neuroscience

Examples of potentially meaningful decline in visuospatial/perceptual and motor skills

- Declining ability to keep track of where pertinent items are located
- Deteriorating capacity to “visualize” neuroanatomy or other relevant visual information
- Increasing difficulty with the mechanics of typing or writing
- Growing problems appropriately handling task-relevant tools (e.g., reflex hammer)
- Increasing loss of dexterity and strength to complete the neurologic/physical examination and relevant procedures (e.g., LP)

Examples of potentially meaningful decline in other skills

- Decreasing ability to carry out basic calculations (e.g., # of tablets for 90-day supply)
- Deteriorating ability to prepare a budget
## More details about the process

- Create a list one’s responsibilities/duties
- Consider how decline in various cognitive realms might manifest themselves
- **Determine one’s threshold for decline, if crossed would signal the need to alter or stop working**
  - Think about possible accommodations at work
  - Consider who is most appropriate to monitor our performance

## Thresholds

- Boundaries of decline, if crossed would signal the need to alter or stop working
- Each of us needs to determine our own personal thresholds
- Below is my own “work in progress”

## I could “live with” practicing medicine under the following conditions

- Repeatedly looking up the names/doses of (newer) medications
- Reviewing prior notes in more detail before seeing a f/u patient
- Seeing fewer patients per session / scheduling longer visits
- Writing fewer or even no manuscripts
- Co-teaching/supervising
- No longer considering myself to be near the top of my field
- Practicing medicine as well as the “average” neurologist
I could “live with” practicing medicine under the following conditions:

- Reducing my list of responsibilities
- Relying on the input and assistance of other people
- Having my work product reviewed and monitored
- No longer conducting my own investigator-initiated research
- Being viewed as someone doing pretty well for an “xx year old”

I would not want to continue to practice medicine under the following circumstances:

- Putting my patients at increasing risk for harm
- Practicing neurology in the bottom quintile of performance
- Being unable to learn / retain new information pertinent to my practice
- Being unable to update lecture material to be up-to-date

I would not want to continue to practice medicine under the following circumstances:

- Generating statements that make trainees or colleagues cringe
- Being viewed as an incompetent physician, not only past his prime, but past his “sell-by” date
- Being viewed as someone who should have retired long ago
More details about the process

• Create a list one’s responsibilities/duties
• Consider how decline in various cognitive realms might manifest themselves
• Determine one’s threshold for decline
• Think about possible changes/accommodations at work that could extend one’s career
  • Consider who is most appropriate to monitor our performance

Age-related changes and early neurodegenerative disease often involve a slow, gradual mental decline

• Allows for time to carry out a transition plan
• We can “make virtue of necessity”

Adaptive aging:
Selection, Optimization, Compensation

• Select
  – Choose the most important goals and activities
  – Limit our areas of expertise

• Optimize
  – Focus on “Five Easy Pieces”

• Compensate
  – Activate or develop new strategies to counteract loss/decline

Baltes, 1990/1997; Baltes & Smith, 2003;
Changes and Accommodations

- Decrease one’s responsibilities and projects
- Reduce or give up leadership roles
- Delegate more responsibility/work
- Rely less on working memory
- Rely more on memory aids, written lists, looking up information
- Rely more on executive assistants
- Decrease or eliminate new patient evaluations
- Reduce the overall number of patients being followed
- Increase time allotted to individual
- Co-teach/co-supervise trainees
- Stop supervising trainees

Changes and Accommodations

- Consider adopting a strategy involving “role reversal”
  - Formalize the process of reviewing one’s cases with peers
  - Find smart colleagues who can serve as “supervisors”
Practice environments influence the performance of physicians

- Solo practice increases the likelihood of poor outcome on performance assessments
  - >25% of MDs 55+ y/o work in solo practices vs 10% of MDs < 40 y/o (2012 survey)

- Female gender, board certification, graduation from a domestic med school, but not time in practice are associated with higher quality of care (claims data from MA)

Kane & Emmons, 2013; Caulford et al, 1994; Grace et al, 2014; Reid et al, 2010

Practice environments influence the performance of physicians

- Appointment length, staffing, and support systems
  - impact a physician’s practice
  - affect measures of patient care and outcomes

- Incorporating organizational and system factors in regression models of practice-based assessments substantially reduces the independent impact of age and other physician characteristics


More details about the process

- Create a list one’s responsibilities/duties
- Consider how decline in various cognitive realms might manifest themselves
- Determine one’s threshold for decline
- Think about possible accommodations at work
- Consider who is most appropriate to monitor our performance and give us feedback
### Set up our own Personal Safety Review Board

- Protect the well-being of our patients
- Protect our reputation
- Support us in carrying out our expressed goals and plans
- Critical for us to provide as much information as possible about our values, wishes, and thresholds
  - Put as much in writing as feasible
  - Give verbal and written permission to have these colleague(s) engage in this process

### Identify peers who can fairly assess our functioning

- Importance of an established, trusting relationship
- Need to know and care about us
- Need to know our responsibilities
- Need to have sufficient expertise to evaluate our performance
- Need to have ongoing access to/awareness of our work products
  - Direct observation
  - Redacted documents (e.g., patient notes) provided for review
- Need to feel empowered to provide honest feedback

### Important characteristics of peers to play this role

- Capacity for fairness, empathy, and discretion
- Not interested in taking over our position at work
- Younger in age
  - Less likely to develop their own age-related cognitive issues during this period
- Reasonable probability remaining local
Vignette 4—Professor in her mid 60s

- Mild, but disruptive cognitive difficulties (e.g., slow recall of information; problems multi-tasking)
- Biomarker evidence of Alzheimer’s Disease (AD)
- Dx: MCI due to AD
- Shared dx with close colleagues in her department
- Continues to teach with the support of other faculty members
- Accommodations
  - co-teaching classes
  - reduced workload
  - increased reliance on written notes
  - augmented use of her executive secretary
- Asked colleagues to monitor her performance and give ongoing feedback
- Committed to using feedback to guide future decisions about work

Devi’s NEJM article: AD in physicians—assessing professional competence and tempering stigma

- 76 yo MD dx’d with Alzheimer’s disease (AD) (MCI)
- Overall cognitive testing at the 99th percentile for age
  - memory subscores: 16th-84th percentile
- Local Committee for Physician Health recommended
  - continuing to work
  - ongoing medical/neurological care
  - monitoring by an independent auditor
- Worked 4 more uneventful years
  - Retired as planned at 80 yo

Devi argues

- AD not monolithic, but heterogeneous
- Impaired MDs can be referred to independent groups like physician health programs. Goal is to
  - Support, not penalize, impaired professionals
  - Aid health professionals with AD, while safeguarding their communities
- This approach may be increasingly important as we move from a clinical to biomarker diagnosis of AD
The many challenges of preparing an occupational living will

- Who can we really trust?
- Potential loss of income and $ security
- Mounting pressure for institutional policies about competence and retirement
- Not legally binding

The most daunting challenge

- Finding ways to ensure that we will abide by our previous commitments.

Odysseus and the Sirens
Success will depend on high functioning neural networks

- Default Mode Network
  - Reflecting on one's past
  - Envisioning the future
  - Imagining the possibility of a dissolution of the “self” as we know it
- Orbitofrontal Cortex
  - Give appropriate weight/value to future negative possibilities
  - Not overly discount or dismiss them
- Executive Control Network
  - Planning for the future
  - Keeping long-term goals in mind
  - Containing our discomfort when considering unpleasant prospects

Ways to avoid the process

- “Cognitive decline or dementia won’t happen to me”
- “I’ll know when I’m declining and deal with it then.”
- “Even if I become demented, it won’t happen until I’m really ancient and have already retired.”
- “If there’s a problem, my colleagues, friends or family will let me know.”
- “If I decline enough to make costly, dangerous mistakes, the decision about retirement will be made for me.”

Avoiding the process

- “I only agree with one statement in your essay, ‘Cognitive decline or dementia won’t happen to me’”
- I’m not afraid of death. I just don’t want to be there when it happens.” Woody Allen, 1975
- I would encourage all of us to think about these issues and begin this process.
- If we’re lucky, we won’t have to remember to thank ourselves in the future.
Gratitude to individuals who have helped me to think through these issues

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