

# Pre-Admission Testing Cognitive Screening Project

Dr. Alexander Abess, Brittney Page, and Tanya Sorensen

## Objective

Improve patient care by creating a robust cognitive screening process/structure that identifies at-risk patients with the purpose of decreasing adverse perioperative outcomes

## Background

- Neurocognitive disorders (NCD) are increasingly recognized as an important perioperative issue.
- Mild Neurocognitive Disorder (mild NCD): modest cognitive decline from a previous level in one or more cognitive domains (e.g. memory, attention, executive function, etc.) which do not interfere with the patient's ability to function independently. Also known as mild cognitive impairment (MCI). Caused by a variety of etiologies.<sup>6</sup>
- Major Neurocognitive Disorder (major NCD): significant cognitive decline from a previous level in one or more cognitive domains (e.g. memory, attention, executive function, etc.) which interfere with the patient's ability to function independently (e.g. need assistance with paying bills, personal care, etc.). Also known as dementia. Caused by a variety of etiologies.<sup>6</sup>
- Postoperative delirium (POD): "an acute neuropsychiatric disorder occurring in the first days after surgery, and characterized by disturbance in awareness, attention and cognitive function."<sup>1</sup>
- POD is a common complication following inpatient surgery in patients over the age of 70 and is associated with numerous adverse outcomes including cognitive decline<sup>1</sup>, prolonged hospitalization, increased healthcare utilization, and increased mortality.<sup>2</sup>
- Preexisting cognitive impairment (CI) (may impact 1 in 4 geriatric patients<sup>3</sup> and is recognized as a strong predictor of POD.<sup>3,4</sup>
- It has been shown that short (<5-minute administration) preoperative screening tests can be used to screen for CI and therefore those at higher risk for developing POD.
- AD8: tool for CI screening; is not currently widely used for preoperative CI screening.
- DHMC currently has no formalized cognitive screening as part of the perioperative evaluation clinic (PAT). There is no routine post-operative cognitive assessment or delirium assessment.

## Methods

- Screen all patients  $\geq 70$  years scheduled for inpatient surgery for preexisting cognitive impairment
- Tools:
  - AD8: Eight yes/no questions to screen for changes in cognitive impairment compared to previous level of functioning, no special training to administer, easy to score, normalizes over a wide range of socioeconomic/educational backgrounds, <2 minute administration time. Scores  $\geq 2$  are highly correlated with presence of cognitive impairment. Sensitivity: 92%; PPV: 93%<sup>5</sup>
  - Ideally questions are answered by an informant (close relative or friend of the patient). If informant is not available, the patient may answer the AD8 questions and a word recall is added (CERAD 10 item recall)

Figure 1: AD8

Remember, "Yes, a change" indicates that there has been a change in the last several years caused by cognitive (thinking and memory) problems.	YES, A change	NO, No change	NA, Don't know
1. Problems with judgment (e.g. problems making decisions, bad financial decisions, problems with thinking)			
2. Less interest in hobbies/activities			
3. Repeats the same things over and over (questions, stories, or statements)			
4. Trouble learning how to use a tool, appliance, or gadget (e.g. VCR, computer, microwave, remote control)			
5. Forgets correct month or year			
6. Trouble handling complicated financial affairs (e.g. balancing checkbook, income taxes, paying bills)			
7. Trouble remembering appointments			
8. Daily problems with thinking and/or memory			
<b>TOTAL AD8 SCORE</b>			

Adapted from Galvin JE et al. The AD8, a brief informant interview to detect dementia. *Neurology* 2005;65:559-564

- Administration:
  - Perioperative evaluation clinic (PAT) RNs, MDs/DOs, medical students
  - In person or over telephone
- Data: Scores are entered in Epic; scores are used by anesthesia team to aid in assessment of POD risk

## Future Directions

- Routine screening in the PACU for post-operative delirium for patients 70 years and older
- Implementation of delirium prevention bundles based on CI results
  - Regional anesthesia if possible, avoidance of certain medications, avoidance of polypharmacy, early mobilization, frequent reorientation, etc.

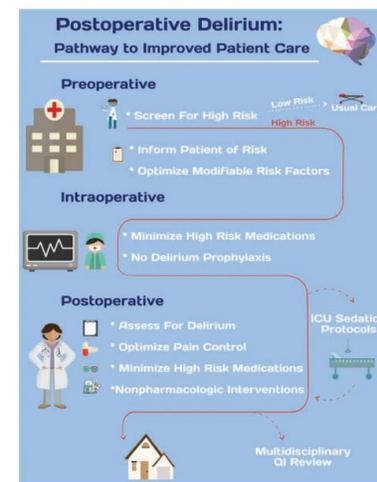


Figure 2

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