

What's New in the Patient Safety World

July 2016

New Simple Test for Delirium

The race is on for a simple test to diagnose delirium. In our August 2014 What's New in the Patient Safety World column "[A New Rapid Screen for Delirium in the Elderly](#)" we discussed the importance of recognizing delirium but that delirium goes unrecognized or undiagnosed in up to 72% of cases in hospitalized patients ([Collins 2010](#)). One of the reasons may be that commonly used screening tests for delirium may not be brief enough or may require specific training for administration. We noted a new screening tool, the [4 'A's' Test \(4AT\)](#) to help improve screening for delirium and its validation in a population other than that in which it was developed ([Bellelli 2014](#)).

Then in our November 2014 What's New in the Patient Safety World column "[The 3D-CAM for Delirium](#)" we discussed another brief diagnostic tool for delirium, the 3D-CAM, that had been derived and validated ([Marcantonio 2014](#)). The assessment takes only about 3 minutes to administer and can be administered by a wide variety of healthcare workers. It takes less than an hour to train someone to administer the tool.

In the validation study, the 3D-CAM had a sensitivity of 95% and specificity of 94% and performed almost equally well in patients with and without dementia (specificity in patients with dementia was slightly less at 86% but sensitivity was 96%). Importantly, the vast majority of patients identified as having delirium had either the hypoactive variety or normal psychomotor activity. That is the population in which delirium is often undiagnosed, compared to those with the hyperactive variety.

Then in late 2015 yet another simple screening tool for delirium was introduced by the team that had developed the 3D-CAM ([Fick 2015](#)). Fick and colleagues used subsets of the 3D-CAM to develop an ultrabrief two-item bedside test for delirium. They found that the best 2-item screen was the combination of "months of the year backwards" and "what is the day of the week?" Those two items had a sensitivity of 93% and specificity of 64%. Even the single item "months of the year backwards" had a sensitivity of 83% and specificity of 69% for diagnosing delirium. The median time it took to administer the screening was 36.5 seconds. The authors emphasize that this should not be considered a diagnostic test but rather a screening tool. When positive, it could be followed with a more comprehensive test like the 3D-CAM. This 2-item tool still needs validation in other populations.

And now an even newer test, the Stanford Proxy Test for Delirium (S-PTD), is being touted as a rapid, simple screening test for delirium that may have the additional desirable feature of not requiring direct patient participation ([Maldonado 2016](#)). This test also took less than a minute for nurses to complete. It would be completed at the end of each shift and it is based purely on nursing observations. The researchers found the S-PTD had a sensitivity of 79% for identifying delirium, specificity 91%, positive predictive value 70%, and negative predictive value 94%.

And, finally, another study noted that delirium assessments that can be reliably and quickly performed by nonphysicians are lacking in the emergency department setting ([Han 2016](#)). The authors evaluated the diagnostic performance of the modified Brief Confusion Assessment Method (modified bCAM) in ED patients 65 years or older. The original bCAM was a brief (<2 minutes) delirium assessment that assessed for inattention by asking the patient to recite the months backward from December to July. It was modified by adding the Vigilance A (“squeeze my hand when you hear the letter ‘A’”) to the inattention assessment. The elements of the modified bCAM were performed by a research assistant (RA) and emergency physician. Delirium was found in 12% of the 406 patients enrolled in their study. The modified bCAM had a sensitivity of 82.0% and specificity of 96.1% when performed by the RA. The emergency physician's modified bCAM exhibited similar diagnostic performance. Use of the modified bCAM needs to be validated in other sites and settings but nevertheless is promising as a screening tool that can be easily administered.

While traditional validated tools like the CAM and CAM-ICU remain key components of any programs addressing delirium, we wholeheartedly support the exploration of tools that can be administered briefly and by those without extensive training. We agree that such tools will likely greatly increase the detection of delirium so that appropriate management strategies can be put in place.

Some of our prior columns on delirium assessment and management:

- October 21, 2008 “[Preventing Delirium](#)”
- October 14, 2008 “[Managing Delirium](#)”
- February 10, 2009 “[Sedation in the ICU: The Dexmedetomidine Study](#)”
- March 31, 2009 “[Screening Patients for Risk of Delirium](#)”
- June 23, 2009 “[More on Delirium in the ICU](#)”
- January 26, 2010 “[Preventing Postoperative Delirium](#)”
- August 31, 2010 “[Postoperative Delirium](#)”
- September 2011 “[Modified HELP Helps Outcomes in Elderly Undergoing Abdominal Surgery](#)”
- December 2010 “[The ABCDE Bundle](#)”
- February 28, 2012 “[AACN Practice Alert on Delirium in Critical Care](#)”
- April 3, 2012 “[New Risk for Postoperative Delirium: Obstructive Sleep Apnea](#)”
- August 7, 2012 “[Cognition, Post-Op Delirium, and Post-Op Outcomes](#)”
- September 2013 “[Disappointing Results in Delirium](#)”

- October 29, 2013 “[PAD: The Pain, Agitation, and Delirium Care Bundle](#)”
- February 2014 “[New Studies on Delirium](#)”
- March 25, 2014 “[Melatonin and Delirium](#)”
- May 2014 “[New Delirium Severity Score](#)”
- August 2014 “[A New Rapid Screen for Delirium in the Elderly](#)”
- August 2014 “[Delirium in Pediatrics](#)”
- November 2014 “[The 3D-CAM for Delirium](#)”
- December 2014 “[American Geriatrics Society Guideline on Postoperative Delirium in Older Adults](#)”
- June 16, 2015 “[Updates on Delirium](#)”
- October 2015 “[Predicting Delirium](#)”
- April 2016 “[Dexmedetomidine and Delirium](#)”
- April 2016 “[Can Antibiotics Lead to Delirium?](#)”

References:

Collins N, Blanchard MR, Tookman A, Sampson EL. Detection of delirium in the acute hospital. *Age Ageing* 2010; 39 (1): 131-135
<http://ageing.oxfordjournals.org/content/39/1/131.full.pdf+html>

The 4 ‘A’s Test: screening instrument for delirium and cognitive impairment
<http://www.the4at.com/>

Bellelli G, Morandi A, Davis DHJ, et al. Validation of the 4AT, a new instrument for rapid delirium screening: a study in 234 hospitalised older people. *Age Ageing* 2014; 43(4): 496-502
<http://ageing.oxfordjournals.org/content/43/4/496.full.pdf+html>

Marcantonio ER, Ngo LH, O'Connor M, et al. 3D-CAM: Derivation and Validation of a 3-Minute Diagnostic Interview for CAM-Defined Delirium: A Cross-sectional Diagnostic Test Study. *Ann Intern Med* 2014; 161(8): 554-561
<http://annals.org/article.aspx?articleid=1916821>

3D-CAM (3 minute diagnostic assessment). The Hospital Elder Life Program 2014.
<http://www.hospitalelderlifeprogram.org/delirium-instruments/3dcam/>

Fick DM, Inouye SK, Guess J, et al. Preliminary development of an ultrabrief two-item bedside test for delirium. *Journal of Hospital Medicine* 2015; 10(10): 645-650

<http://onlinelibrary.wiley.com/doi/10.1002/jhm.2418/abstract>

Maldonado JR. The Proxy Test for Delirium (PTD): A New Tool for the Screening of Delirium Based on DSM-5 and ICD-10 Criteria. American Psychiatric Association (APA) 2016 Annual Meeting. SCR-Measurements and Scales, no. 3. Presented May 17, 2016

As discussed in Brooks M. New Delirium Test May Be Simpler, More Accurate. Medscape Medical News 2016; May 25, 2016

<http://www.medscape.com/viewarticle/863826>

Han JH, Wilson A, Graves AJ, et al. A quick and easy delirium assessment for nonphysician research personnel. Am J Emerg Med 2016; 34(6): 1031-1036

<http://www.ajemjournal.com/article/S0735-6757%2816%2900176-5/abstract>



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