

What's New in the Patient Safety World

November 2014

The 3D-CAM for 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](#)).

Now another brief diagnostic tool for delirium, the 3D-CAM, has 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.

The [3D-CAM instrument and training manual](#) are available on the Hospital Elder Life Program website. The authors note that the structured nature of the instrument also make it possible to administer via an electronic platform, such as mobile technology.

Since the study was done on general medical patients, it should be validated on other populations (eg. surgical patients, other types of hospitals, etc.) before being used in those settings.

Like the previously discussed 4AT tool, the 3D-CAM is simple, easy to administer, does not require extensive training, has good sensitivity and specificity, and works in patients with and without dementia. We fully expect that these much simpler tools should vastly improve the early detection and management of delirium.

Some of our prior columns on delirium assessment and management:

- October 21, 2008 “[Preventing Delirium](#)”
- October 14, 2009 “[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 “[Delirium in Pediatrics](#)”
- August 2014 “[A New Rapid Screen for Delirium in the Elderly](#)”

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/>

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