

Instrument	<b>Nursing Home Confusion Assessment Method</b> NOTE: This card is populated with information from the instrument's original validation study only.
Acronym	NH-CAM
Primary use	Delirium screening
Area assessed (Number of questions)	Addresses 4 core features: Acute onset or fluctuating course; Inattention; Disorganized thinking; Altered level of consciousness 9 items
Description	The four CAM features were modified into the NH-CAM using 9 variables associated with the standard Minimum Data Set (MDS) Resident Assessment Protocol (RAP) (Items B5f, E3, B5a, B5b, B5c, B6, B5d, B5e, E5) for delirium screening of patients within 19 days after readmission to the nursing home from hospitalization. The MDS is the core functional assessment instrument of the RAI and covers 13 domains with more than 400 items, including functional, cognitive, behavioral, nutritional items; health status and symptoms; and special treatments and procedures.
Versions	1
Scoring information	CAM is considered positive based on the CAM algorithm: presence of acute onset or fluctuating course –AND- inattention -AND EITHER- disorganized thinking or altered level of consciousness. Level 2 subsyndromal delirium (SS-2) considered if 2 or 3 of the CAM features are present without meeting the criteria for the formal definition. Level 1 subsyndromal delirium (SS-1) is considered if only 1 feature is present.
Cognitive testing	Minimum Data Set (MDS) Resident Assessment Protocol (RAP) (Items B5f, E3, B5a, B5b, B5c, B6, B5d, B5e, E5)
Estimated time to rate	5 minutes
Require trained rater	Yes – trained lay raters or NH staff
How to obtain	Available in <a href="https://doi.org/10.1111/j.1532-5415.2007.01239.x">https://doi.org/10.1111/j.1532-5415.2007.01239.x</a> (Note-article may be behind paywall) MDS available at <a href="https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/MDS30RAIManual">https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/MDS30RAIManual</a>
Licensing Fee*	None for instrument
Languages available	English
Highest COSMIN** rating	2/6 <sup>†</sup>
Test Performance Characteristics	<b>Dosa 2007 (Study: N= 535,721 long term care residents who returned to their Nursing Homes after acute hospitalizations)</b> <ul style="list-style-type: none"> <li>• Correlation: The delirium Resident Assessment Protocol (RAP) trigger and to an additive score of six of the RAP items, completed by nursing home staff; no true reference standard</li> <li>• Reliability of component items               <ul style="list-style-type: none"> <li>- Interrater reliability items B5a, b, c, e: kappa=0.80</li> <li>- Interrater reliability item B5d: kappa=0.67</li> <li>- Interrater reliability item B6: kappa=0.63</li> <li>- Interrater reliability item E3: kappa=0.65</li> <li>- Interrater reliability item E5: kappa=0.38</li> </ul> </li> <li>• Predictive validity supported with association of NH-CAM with rehospitalization and mortality</li> </ul>

Last updated on **July 29, 2021**. If you are aware of any updates required for this document, please notify us via [nidus@hsl.harvard.edu](mailto:nidus@hsl.harvard.edu)



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\* Fees and licensing information is effective as of 2021, but is subject to change over time

\*\* COSMIN is used to rate a study's evaluation of a survey or test's measurement properties. COSMIN does NOT rate the instrument itself, but helps readers understand if they can have confidence in the results of studies evaluating measurement properties of surveys and tests. For example, a rigorous study evaluating a test with poor measurement properties will receive a "good" COSMIN rating, while a poorly-conducted study evaluating a test with good measurement properties will receive a "poor" COSMIN rating. Small sample size can impact all COSMIN ratings. You must consider both the COSMIN rating and the results of studies provided when forming your opinion about that test. *COSMIN ratings shown are based solely on the instrument's original validation study.*

† COSMIN breakdown: criterion validity: NONE, effect indicators: NONE, internal consistency: NONE, inter-rater reliability: GOOD, construct validity: NONE, external validity: GOOD

### Reference:

Dosa D, Intrator O, McNicoll L, Cang Y, Teno J. Preliminary derivation of a nursing home confusion assessment method based on data from the minimum data set. *Journal of the American Geriatrics Society*. 2007;55(7):1099-105

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