

and should be immediately revised as opposed to a promise of a revision in the next version (4 to 5 yr from now). The urgency arises not just from the lack of evidence-based support for the term, but also from the fact that journal reviewers are already requesting that “delayed neurocognitive recovery” be applied, even to studies designed years ago. Unfortunately, it is likely that the National Institutes of Health (Bethesda, Maryland) and other funding agencies will quickly follow suit and potentially consider postoperative neurocognitive disorders as insignificant, since it would merely be a stop on the road to recovery. Moreover, to maintain consistency with the DSM-5 and until new studies dictate otherwise, we recommend that the proposed framework be revised to state that once the patient is discharged from the hospital, the terms “mild or major neurocognitive disorders” should apply. Pain scores and medication use at follow-up could be evaluated as covariates.

Competing Interests

Dr. Mathew is on the board of MedBlue Data (Durham, North Carolina). Dr. Welsh-Bohmer has contracts with Takeda Pharmaceutical Company (Deerfield, Illinois) and VeraSci (Durham, North Carolina). None of these are competing interests with the contents of this letter.

Joseph P. Mathew, M.D., M.H.Sc., M.B.A., Kathleen A. Welsh-Bohmer, Ph.D., A.B.P.P., Mark F. Newman, M.D. Duke University School of Medicine, Durham, North Carolina (J.P.M).
joseph.mathew@duke.edu

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Nomenclature for Perioperative Cognitive Disorders: Comment

To the Editor:

“Anybody can treat, but not anybody can diagnose.”¹

In “Recommendations for the Nomenclature of Cognitive Change Associated with Anesthesia and Surgery-2018,” Evered *et al.*² fail to acknowledge that perioperative neurocognitive disorder is a diagnosis by exclusion, *i.e.*, “a diagnosis that remains after all other differential possibilities have been excluded.”¹ In reports of perioperative neurocognitive disorder to the present, “differential possibilities” are not excluded. Investigators presume, but do not prove, that patients with perioperative neurocognitive disorder experience declines in tests of psychometric performance after surgery that do not arise from other neurologic and psychiatric diagnoses including stroke, epilepsy, trauma, infection, hydrocephalus, intoxication, psychosis, depression, posttraumatic stress disorder, and other progressive neurocognitive syndromes.³ These disorders prejudice cognitive test results in the elderly, and may first become manifest to the patient and clinician in the interval between surgery and neuropsychologic test administration 3 and 12 months later. None of the articles cited by the authors in their article or in its supplements that attest to the existence of perioperative neurocognitive disorder report evaluations at scheduled intervals before surgery, and at 3 and 12 months after surgery by specialists credentialed to perform comprehensive neurologic

and mental examinations of the central nervous system.²⁻⁴ Patient self-report of interval medical history and physical status provides unreliable data in the differential diagnosis of conditions that weaken memory. Thorough review of medical records after surgery is clearly necessary (albeit often unreported) in perioperative neurocognitive disorder research but is not a sufficient substitute for neurologic and psychiatric examination at the time of neuropsychologic testing. Surgery and anesthesia may hasten expression of known conditions, and detection of subtle changes may point to modifiable steps in the perioperative care of an undetermined proportion of patients. Only by exclusion of known conditions may neurocognitive signs and symptoms that arise from anesthetic and surgical harms of unknown origin be identified. In supplement 1 to their article, Evered *et al.* observe, “Remarkably research into POCD [perioperative neurocognitive disorder] (anesthesia and surgery) and AD [Alzheimer disease] has occurred independently of each other.”⁴ In an accompanying editorial, Cole and Kharasch underscore the value of working collaboratively to achieve the aims of the Perioperative Brain Health Initiative.⁵ Participation of neurologists, psychiatrists, and geriatricians able to distinguish neurocognitive conditions of known and unknown origin one from the other at the time of psychometric testing remedies a flaw in published perioperative neurocognitive disorder experimental designs.

Competing Interests

The author declares no competing interests.

Kirk J. Hogan, M.D., J.D. School of Medicine, University of Wisconsin, Madison, Wisconsin. khogan@wisc.edu

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Nomenclature for Perioperative Cognitive Disorders: Reply

In Reply:

We thank Mathew *et al.* and Dr. Hogan for their comments in response to our recent nomenclature recommendations for perioperative neurocognitive disorders.¹ We deeply appreciate the acknowledgment of the importance of this effort and are gratified to see both clinicians and investigators beginning to use it. We should stress again that this is a *clinical* nomenclature, each category of which requires symptoms or a complaint from the patient, caregiver, or family. The considerably more difficult, and likely contentious, effort to define perioperative neurocognitive disorder research criteria is underway and hopefully will reach consensus and publication in the next year or so. It is hoped that those using the research criteria will still make the attempt to map their results onto this clinical nomenclature to better enable translation into the community.

Despite our general agreement, we are familiar with the unease of Mathew *et al.* with the category “delayed neurocognitive recovery.” We readily acknowledge that it is in fact a new term, much like “mild cognitive impairment” was when introduced by the Alzheimer Association (Chicago, Illinois) and National Institutes of Aging (Bethesda, Maryland) several years ago. We do not understand why the novelty of a term should be grounds for eliminating it, as long as it fits the situation well. And we believe it fits quite well. The majority of our patients, even those who are older, recover their cognitive abilities in the first hours or days after anesthesia and surgery—the literature is unequivocal on this. Thus, the presence of symptomatic cognitive dysfunction weeks after surgery can only be considered as “delayed” relative to expectations. The term is not meant to be predictive, as it is never clear in any given individual whether their symptoms will go on to resolve, or to grow. Thus, an