

Beyond Making the Diagnosis: Identifying Actionable Factors in Delirium

Adrianna Hitchins, MD; Teresa M Halbert, MS; Mark W. Nickels, MD; Mark A. Oldham, MD

Background:

It has been well established that delirium is a common occurrence on inpatient medical and surgical units, and that the presence of delirium is associated with longer hospital stay, greater morbidity, and greater mortality. There is extensive literature on precipitating and perpetuating factors (Hshieh 2015), but there are few published protocols specifically to identify and ameliorate these factors. In the cases where this approach has been taken, results are promising (Bauernfreund 2018, Simone 2017). In this QI project, we piloted a protocol for identifying and communicating common risk factors for delirium with an eye toward intervention. Our protocol, with the acronym LIVEBAR (Lines and tethers, Intake, Vitals, Evidence of cause, Behavioral concerns, Ambulation, Retention), seeks to highlight common deliriogenic factors in order to ameliorate modifiable risks and to direct medical workup. The purpose of this study is to assess its acceptability and feasibility in vivo.

Methods

An acute care neurology unit was chosen for initial rollout. Prior to implementation, the QI team met with nurses and nursing assistants on the unit to conduct a pre-implementation survey on attitudes toward delirium management and introduce LIVEBAR. A similar survey was provided to providers. The initial plan called for a one-month test period; this, however, was interrupted the COVID-19 pandemic resulting in a two-month test period before the post-implementation survey could be completed.

Initial Results

Prior to implementation of the intervention, nursing staff on the unit were asked to complete a survey regarding attitudes toward delirium screening and interdisciplinary communication around delirium (table 1) . A follow up survey was sent out by E-mail two months after the start of the intervention (tables 2&3). Surveys were sent to providers as well, however there was insufficient response rate.

During the month of February, qualitative data was gathered through check-ins with nursing staff. In these, they reported no significant disruptions in workflow caused by LIVEBAR, but also that they were using it infrequently, based upon the parameters to trigger it.

LIVEBAR

L- lines and tethers

- Goal: remove unnecessary lines and tethers

I- Intake

- Goal: Ensure adequate fluid and nutritional intake

V-Vitals

- Goal: Assess for vital sign changes

E-Evidence of cause

- Goal: identify potential causes of delirium

B- Behavioral Problems

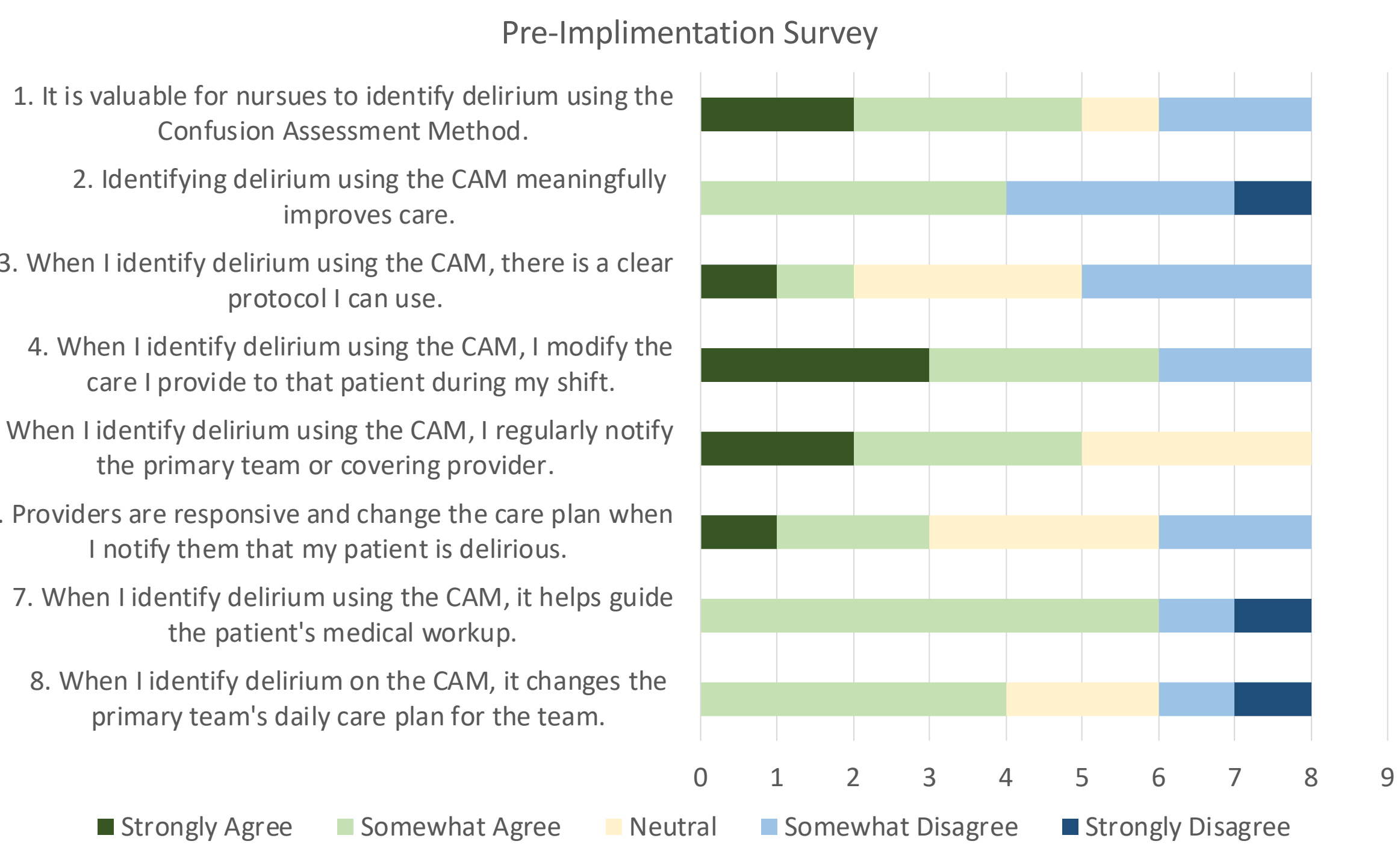
- Goal: identify behaviors that compromise care or place self/others

A- Ambulation

- Goal: maintain mobility

R- Retention

- Goal: ensure adequate bowel and bladder function



Initial Conclusions

Interpretation of the results is confounded however by the arrival of COVID-19, which caused disruptions in workflow in March of this year. Post-implementation survey results show a more negative outlook on delirium screening. This could reflect overall more negative attitudes given the stress of the pandemic, or might suggest that, by calling attention to delirium assessment, there is more frustration around delirium detection using LIVEBAR without having the actionable order sets or protocols to intervene with identified delirium risk factors.

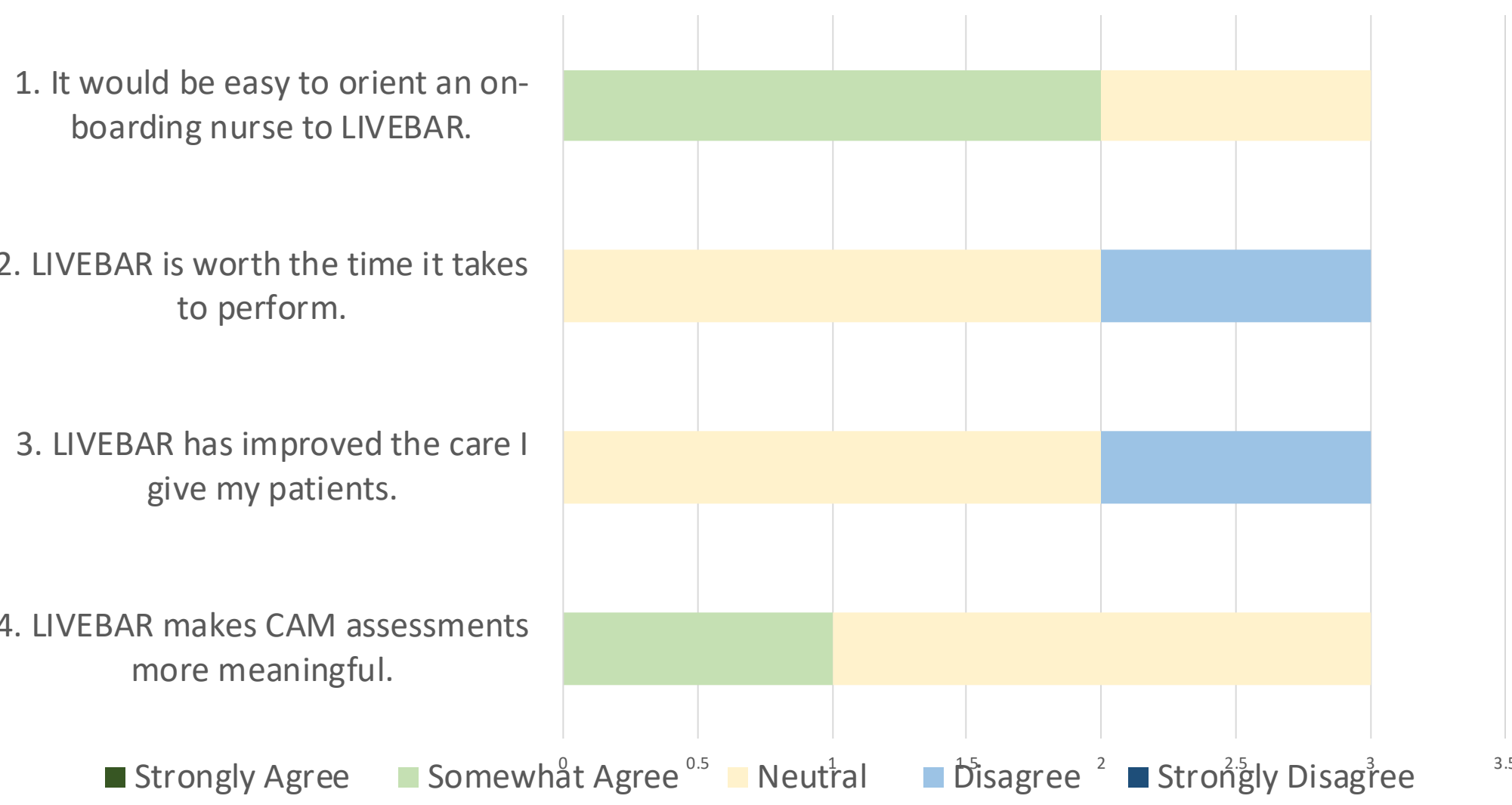
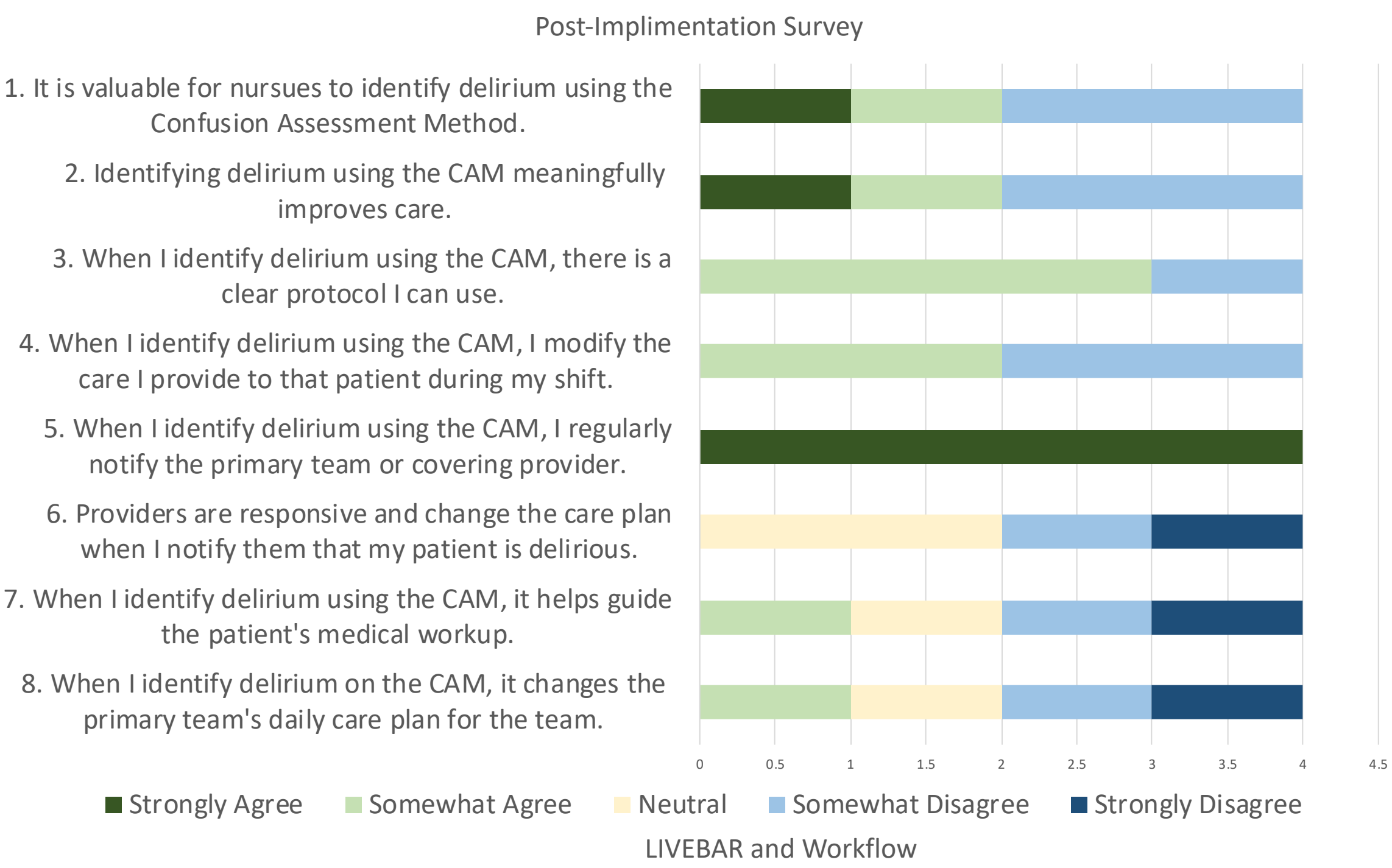
The qualitative “real time” feedback suggests that the LIVEBAR intervention is feasible, but its use should be not only for new but also existing cases of delirium. In particular, staff reported they were rarely having patients who met criteria---a first-time positive CAM—as this inadvertently excluded patients arriving on the unit already delirious.

Next Steps

A follow up PDSA cycle is planned for this summer. By then, staff distress due to disruptions from the COVID-19 pandemic may be less, allowing for more thoughtful reflection on the intervention.

- The next cycle will occur on 2-3 inpatient units to increase sample size. Our preference is to use non-teaching units, which have more consistency in covering providers—the limited provider response in the first cycle was likely not helped by frequent turnover of residents on the Neurology floor.
- Parameters for use of LIVEBAR will be changed to include all CAM+ cases, whether new-onset or existing prior to transfer to the unit.
- As LIVEBAR is dependent upon reliable use of the CAM, we will also sample staff members’ comfort with doing the CAM screening.
- We will solicit feedback from nurses and providers on what orders or standardized interventions LIVEBAR should trigger.

We will continue to assess its impact on attitudes toward delirium screening and especially interdisciplinary communication about delirium



Bauernfreund, Yehudit, et al. “TIME to Think about Delirium: Improving Detection and Management on the Acute Medical Unit.” *BMJ Open Quality*, vol. 7, no. 3, 2018, p. e000200
Hshieh, Tammy T., et al. “Effectiveness of Multicomponent Nonpharmacological Delirium Interventions: A Meta-Analysis.” *JAMA Internal Medicine*, vol. 175, no. 4, 2015, pp. 512–20
Simone, Shari, et al. “Implementation of an ICU Bundle: An Interprofessional Quality Improvement Project to Enhance Delirium Management and Monitor Delirium Prevalence in a Single PICU.” *Pediatric Critical Care Medicine : A Journal of the Society of Critical Care Medicine and the World Federation of Pediatric Intensive and Critical Care Societies*, vol. 18, no. 6, 2017, pp. 531–40



UNIVERSITY of ROCHESTER