

# Improving Screening Rates for Functional Decline and Delirium in Older Adults within University Health Network Emergency Departments

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## BACKGROUND AND CONTEXT FOR CHANGE

- Older adults are at risk of functional decline and delirium, exhibiting higher Emergency Department (ED) utilization, increased morbidity, and extended hospital stays<sup>1</sup>.
- The Identification of Seniors At Risk (ISAR)<sup>2</sup> and the Confusion Assessment Method (CAM)<sup>3</sup> are widely used to detect risk of functional decline and delirium, respectively. The ISAR tool or its equivalent is also mandated in all Ontario EDs under Ontario Health's Home First Direction<sup>4</sup>.
- At University Health Network (UHN), positive ISAR (score  $\geq 2$ ) and CAM screens could trigger Seniors Emergency Medicine Centre (SEMC) consults and case finding involving the Multidisciplinary Team (MDT), which includes Geriatric Emergency Management Clinical Nurse Specialists, occupational therapists, social workers, and physiotherapists.
- Currently there are low ISAR and CAM completion rates that limit early identification of older adults in need of MDT involvement. As proactive MDT involvement may improve patient and system outcomes<sup>5,6</sup>, our UHN SEMC team undertook a project in 2024-2025 to improve timely MDT involvement by increasing ISAR and CAM completion rates within Toronto General Hospital (TGH) and Toronto Western Hospital (TWH) EDs.

## AIM STATEMENTS

As SEMC consult orders has been used as a proxy for MDT involvement, aim statements for all UHN ED patients aged 65 years or older (65+) include the following:

- To reduce the average time to a SEMC consult order per week by 15% by Aug 2025.
- To increase the average number of SEMC consult orders per week by 15% by Aug 2025.

## FAMILY OF MEASURES

### OUTCOME MEASURES:

- Average weekly time from ED arrival to SEMC consult order (target decrease of 15%)
- Average number of 65+ ED visits with a SEMC consult order (target increase of 15%)

### PROCESS MEASURES:

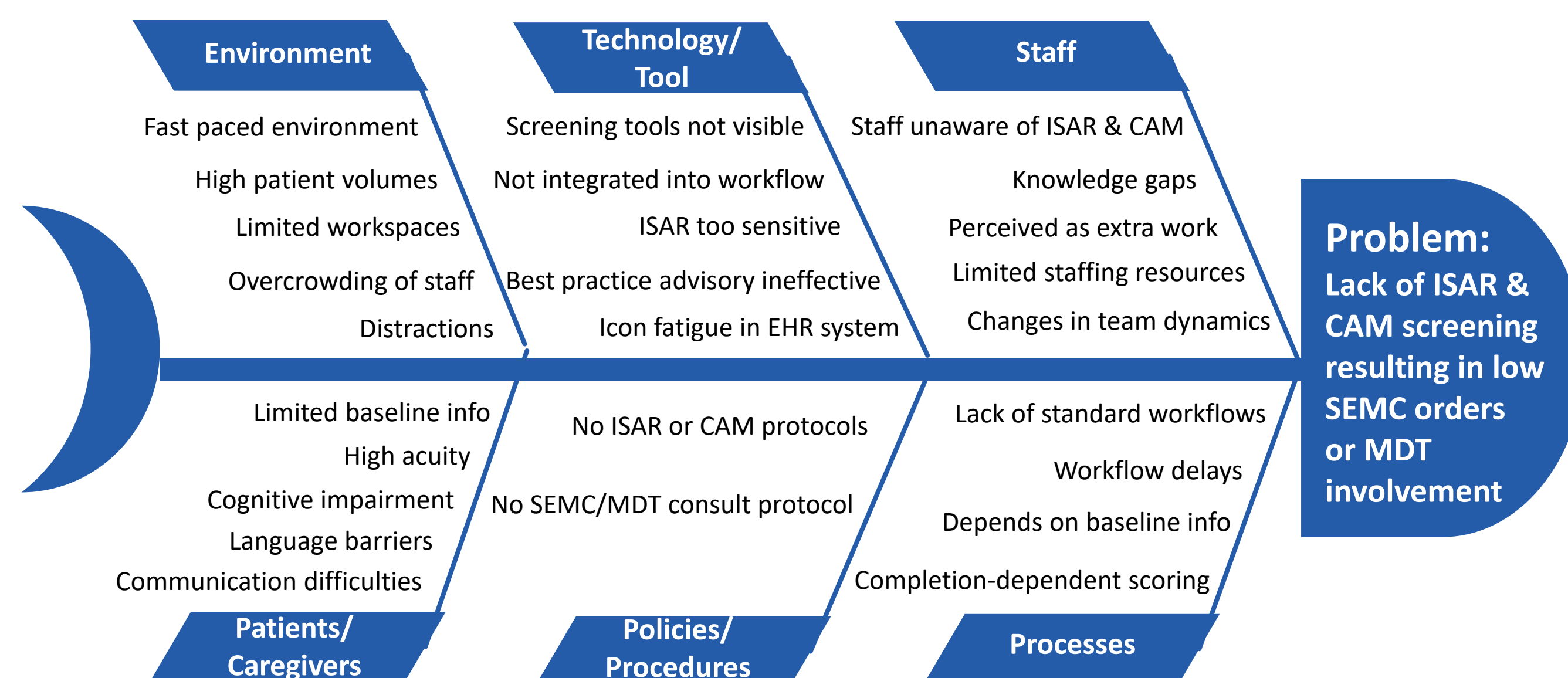
- Average weekly completion rates of ISAR and CAM (target increase of 30%)
- Average weekly ISAR and CAM positive rates

### BALANCING MEASURES:

- UHN ED staff feedback regarding staff workflows and workloads

## PROBLEM CHARACTERIZATION

Figure 1: Using the Fishbone Diagram and 5 Whys, possible contributing factors are shown below:



## INTERVENTION

Table 1: Based on PICK Chart results, prioritized change ideas are described below.

Change Concepts	Change Ideas
Standardize and increase ISAR and CAM screening within UHN EDs	<ul style="list-style-type: none"> <li>Embedding ISAR and CAM tools into the primary nursing assessment within the patient's electronic health record (EHR) system – Go-live: February 5, 2025</li> <li>Removal of ineffective best practice advisories (BPAs) to reduce "alert fatigue"</li> <li>Use of an "Unable to assess" option to support ISAR completion</li> <li>Education and reminders using a multi-modal approach</li> <li>Standard work and protocol development to standardize ED screening processes</li> <li>Audit and feedback to encourage practice changes among frontline staff</li> </ul>
Standardize and optimize proactive SEMC consult orders and MDT involvement	<ul style="list-style-type: none"> <li>Use of a visual cue (the "Senior at Risk" icon on the ED track board) to:                             <ol style="list-style-type: none"> <li>Signal high-risk seniors based on positive ISAR and/or CAM results</li> <li>Prompt proactive MDT involvement through SEMC consults orders and case finding</li> </ol> </li> <li>Education and reminders using a multi-modal approach</li> <li>Standard work and protocol development to standardize proactive MDT consultation and case finding</li> </ul>

## PLAN-DO-STUDY-ACT (PDSA) CYCLES

Table 2: Data and feedback helped guide decisions on whether to adapt, adopt, or abandon the change ideas.

PDSA Cycles (Feb – July 2025)	
<b>What is working well?</b>	<ul style="list-style-type: none"> <li>For UHN ED staff feedback, see Fig. 6.</li> </ul>
<b>What can be improved?</b>	<ul style="list-style-type: none"> <li>Nurses unable to recall ISAR and CAM screening questions at the bedside</li> <li>More staff awareness to complete ISAR in all ED settings, including ambulatory care</li> <li>More integration of the "Seniors at Risk" icon during MDT case finding</li> <li>Improvements to the CAM scoring to ensure accurate CAM-positive results in the EHR system</li> </ul>
<b>Interventions based on PDSA Cycles:</b>	<ul style="list-style-type: none"> <li>Standardized point-of-care ISAR and CAM screening by integrating the tools into nurses' handheld devices ("Nursing Rovers")</li> <li>Education and reminders to complete ISAR across all ED settings and to integrate the "Senior at Risk" icon into MDT case finding</li> <li>Corrections to CAM scoring in the EHR system to improve detection of CAM-positive cases</li> </ul>

## PROJECT RESULTS

Note: For all Statistical Process Control (SPC) charts (Figs. 2-5), the green line represents the process average or centre line (CL), while the red lines indicate the upper and lower control limits (UCLs, LCLs), set at  $\pm 3$  standard deviations from the CL.

### PROCESS MEASURES

- Following process changes implemented on and after February 5, average ISAR and CAM completion rates at TGH and TWH showed substantial increases, exceeding the 30% target. The increase in the average ISAR completion rate at TGH was sustained, establishing a new process average. Ongoing work will re-calculate process averages for the remaining measures once these processes stabilize (see Figs. 2 & 3).

Figure 2: After the process changes, the average weekly ISAR completion rates showed absolute increases of 53.8% at TGH (from 4.2%  $\pm$  1.7%; N=314 to 58.0%  $\pm$  7.2%; N=328) and 41.3% at TWH (from 8.7%  $\pm$  3.7%; N=346 to 50.0%  $\pm$  8.2%; N=353).

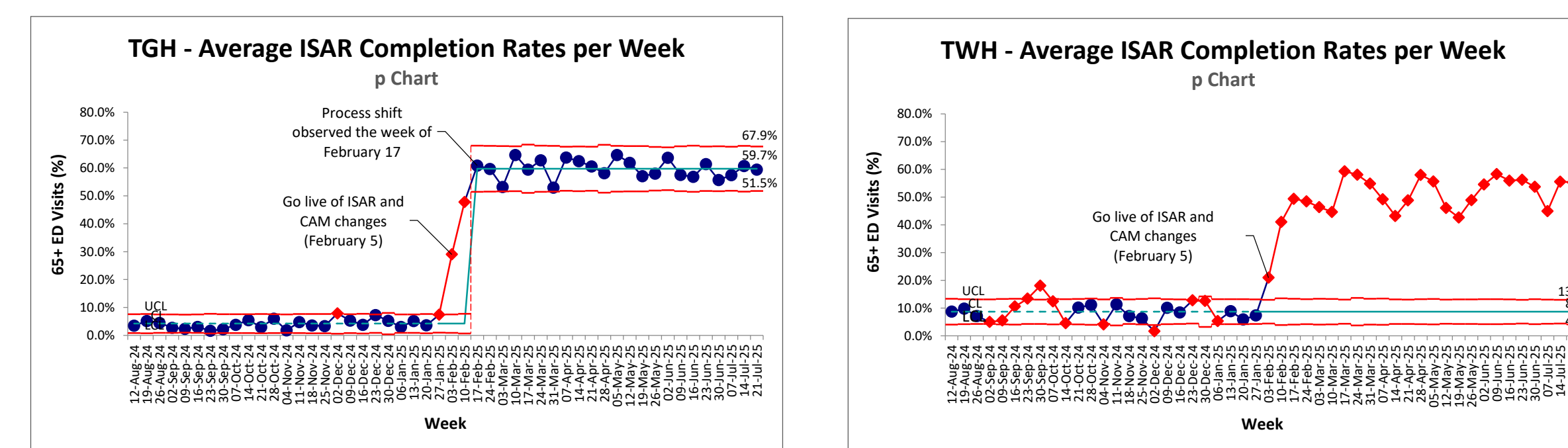
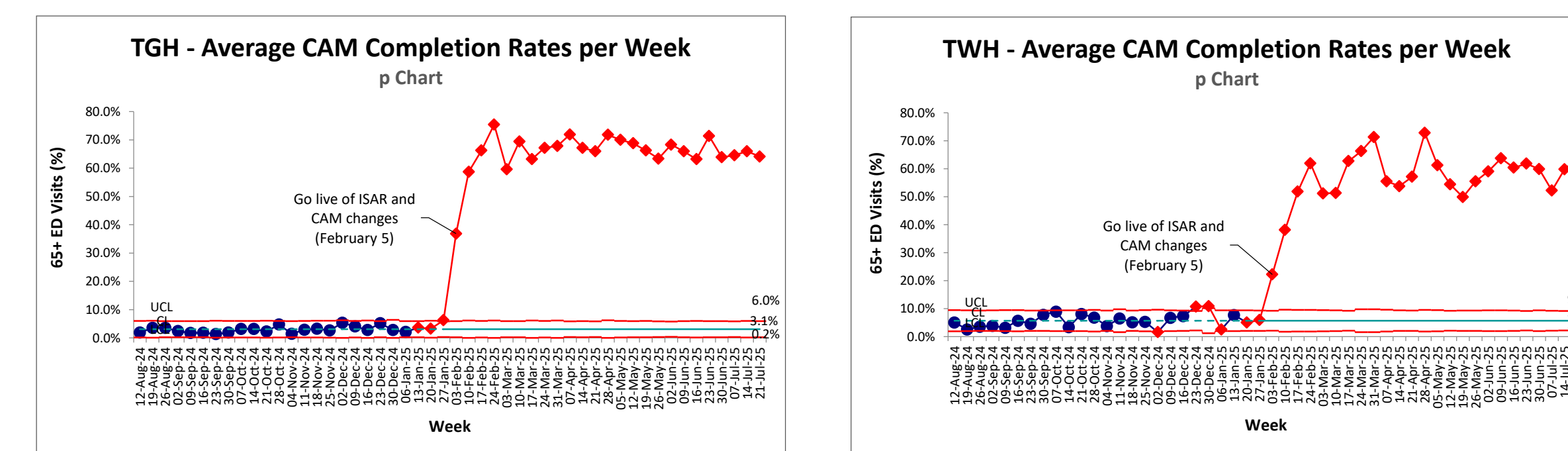


Figure 3: After process changes, the average weekly CAM completion rates showed absolute increases of 62.4% at TGH (from 3.1%  $\pm$  1.3%; N=314 to 65.5%  $\pm$  7.1%; N=328) and 51.0% at TWH (from 5.7%  $\pm$  2.5%; N=346 to 56.7%  $\pm$  10.2%; N=353).



### ACKNOWLEDGEMENTS

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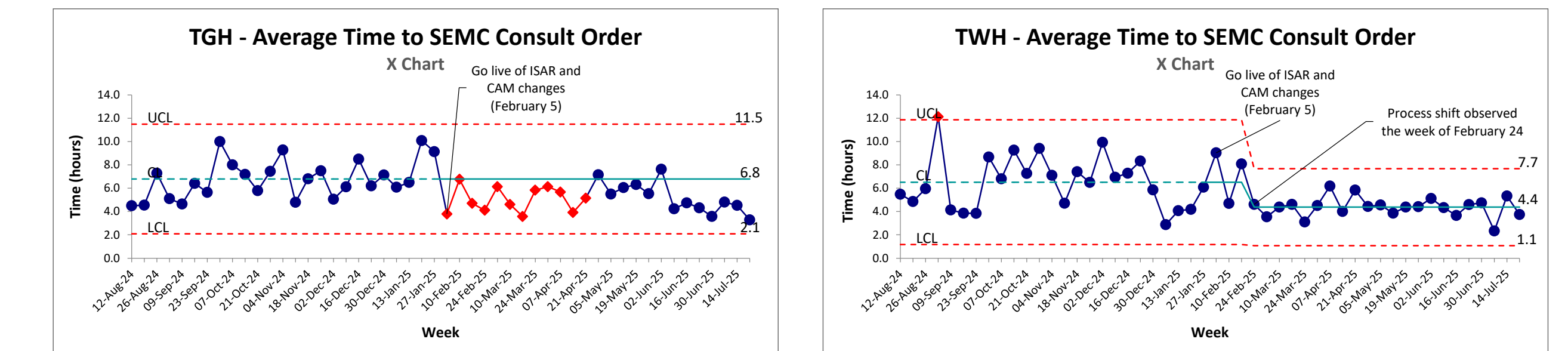
## PROJECT RESULTS (Cont'd)

- Comparable to other studies<sup>7,8</sup>, of the completed screens at TGH (n  $\approx$  192), the average weekly ISAR-positive rate was 56.9%  $\pm$  4.3%, and at TWH (n  $\approx$  177), it was 45.4%  $\pm$  6.2%.
- Due to ongoing technical issues with the CAM scoring in the EHR system, CAM-positive rates and outcomes will be analyzed and shared at a later time.

### OUTCOME MEASURES

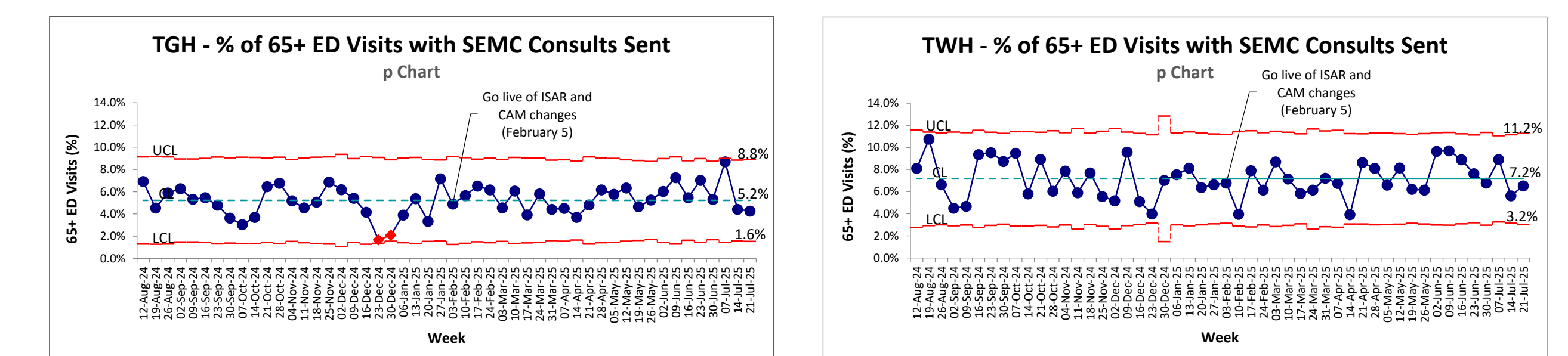
- Average time from ED arrival to SEMC consult order decreased by 24.7% at TGH and 29.7% at TWH, exceeding the 15% target (see Fig. 4). The decrease in the average time to SEMC consult order at TWH was sustained, establishing a new process average. Ongoing work will re-calculate the process average at TGH once this process stabilizes.

Figure 4: At TGH, average time to send a SEMC consult order decreased from 6.8  $\pm$  1.7 hours to 5.1  $\pm$  1.2 hours, and at TWH, from 6.5  $\pm$  2.2 hours to 4.6  $\pm$  1.4 hours.



- Additionally, the number of ED visits with a SEMC consult order increased by 17.1% at TGH and 4.7% at TWH. While TGH met the 15% target, no process shifts or sustained changes in process averages were observed for either site (see Fig. 5).

Figure 5: At TGH, ED visits with a SEMC consult order increased from 15.0  $\pm$  4.5 visits/week to 17.6  $\pm$  3.3 visits/week, and at TWH, from 23.7  $\pm$  6.4 visits/week to 24.8  $\pm$  5.6 visits/week.



### BALANCING MEASURES & FEEDBACK

No concerns were reported regarding staff workflows or workloads (see Fig. 6).

Figure 6: Examples of feedback from UHN ED staff are shown below:

- "More aware of the use of ISAR and CAM tools"
- "With ISAR and CAM embedded in the primary nursing assessment, completion of these tools does not feel like added work"
- "Including 'Unable to Assess' has helped me complete more ISARs"
- "As it's challenging to remember the screening questions, having the tools in the Rover has allowed me to complete the screens at the patient's bedside"

## CONCLUSIONS

- Following process changes, ISAR and CAM completion rates increased substantially, and time to SEMC consult orders decreased. These improvements are promising, though ongoing monitoring is needed to confirm process stabilization.
- Key enablers included embedding ISAR and CAM into nursing workflows, leadership and champion support, and weekly audit and feedback.
- The lack of a marked increase in SEMC consult orders may reflect variable use of SEMC consults versus separate OT, PT, and SW orders. As such, ongoing analyses will include outcomes that better reflect MDT involvement.
- Work is underway to further evaluate the effectiveness and sustainability of ISAR, CAM, and other ED screening tools in identifying high-risk seniors, as well as their impact on MDT involvement, patient-level outcomes, and system-level outcomes.

### REFERENCES

- Alimzadeh, F., & Dalziel, W.B. (2022). Older adults in the emergency department: A systematic review of patterns of use, adverse outcomes and effectiveness of interventions. *Annals of Emergency Medicine*, 39(3), 238-247.
- McCusker, J. (2021). The ISAR Screening Tool Manual. *Identification of Seniors at Risk (ISAR): An Emergency Department Screening Tool to Identify Older Adults at Risk of Adverse Functional Outcomes*. St. Mary's Research Centre.
- Waszynski, C.M. (2012). The Confusion Assessment Method (CAM). In S.A. Greenberg (Ed.), *Best Practices in Nursing Care to Older Adults* (Issue No. 13, Revised). Hartford Institute for Geriatric Nursing, New York University College of Nursing.
- Ontario Health. (2024, August 14). *Operational Direction: Home First* (Report).
- Schnaecher, J.G., & Melady, D. (2022). *Creating a geriatric emergency department: A practical guide*. Cambridge University Press.
- Gettel, C.J. et al. (2023). An outcome comparison between geriatric and nongeriatric emergency departments. *Annals of Emergency Medicine*, 82(6):681-689.
- Asomiani, N., & Loftus, C. (2013). Identification of Seniors at Risk (ISAR) screening tool in the emergency department: Implementation using the Plan-Do-Study-Act model and validation results. *Journal of Emergency Nursing*, 40(4), 357-364.
- McCusker, J. et al. (2000). Prediction of hospital utilization among elderly patients during the 6 months after an emergency department visit. *Annals of Emergency Medicine*, 36, 438-445.