# Code White Simulation – Simulation-Based Training for Psychiatry Residents in the Emergency Department

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## INTRODUCTION

Agitation is a behavioral emergency commonly encountered in psychiatric emergency departments (ED), with an estimated prevalence ranging from 6% to 17% of all psychiatry ED visits (1-3). Health settings often use the term "Code White" to refer to the initiation of a standard response to summon immediate assistance in the event of a psychiatric emergency characterized by imminent risk of harm to self or others (4). CAMH is the only stand-alone psychiatric ED in Ontario, providing 24/7 emergency assessment and treatment for adults with mental health and substance use issues (5). The CAMH ED is a mandatory rotation for all first-year psychiatry residents at the University of Toronto. Often, residents serve as the first physician to assess a patient presenting to the CAMH ED. Due to the complex nature of acute agitation in the psychiatric ED, psychiatry residents require early and specific training around its' management. Feedback collected from junior learners rotating through the CAMH ED has highlighted similar concerns around feeling unprepared to manage a Code White.

## METHODS

### Development and Implementation of Educational Intervention

We created a Code White simulation to address this gap in resident training, in which a fictional case with a standardized patient demonstrated team response to a Code White. Depicted was a stepwise escalation of agitation management with physical restraint as a last resort, followed by administration of legal forms (Form 1 and 42, as per Ontario Mental Health Act), and discussion with the patient around next steps. The video was integrated into the PGY1 CAMH ED orientation. All PGY1s participating in the orientation were required to have completed mandatory training in Trauma-Informed De-Escalation Education for Safety and Self-Protection, which focuses on verbal de-escalation techniques. Between July 29th, 2024 – August 25th , 2024, fifty PGY1 residents participated in the study.

### Evaluation of the Intervention

Participants were asked to assess their confidence on a 5-point scale (1 = strongly disagree, 5 = strongly agree) pre-and-post simulation. They were also asked to rate their overall experience with the simulation through Likert scales and open-ended questions. Descriptive statistics were used to calculate mean scores and standard deviations of participant responses to questionnaire items. Pre-and-post questionnaire responses were then compared using paired t-test. Open-ended explanatory responses in the post-simulation questionnaire were coded for thematic content. Themes were inductively derived from the data.

## RESULTS

There was a statistically significant improvement in resident's self-perceived confidence in:

| Learning Objective | Mean Pre | SD Pre | Mean Post | SD Post | t | Sig. |
|---|---|---|---|---|---|---|
| Ensuring a safe environment | 2.07 | 0.86 | 3.18 | 0.72 | 10.44 | 0.00 |
| Communicating with the allied health team | 1.89 | 0.8 | 3.42 | 0.84 | 13.08 | 0.00 |
| Managing severe acute agitation | 1.93 | 0.72 | 3.07 | 0.81 | 12.16 | 0.00 |
| Applying Mental Health Act legislation | 2.33 | 0.83 | 3.24 | 0.91 | 8.01 | 0.00 |
| Recognizing health inequities | 2.96 | 0.93 | 3.47 | 0.98 | 4.36 | 0.00 |
| Conducting assessments with respect/empathy | 3.44 | 0.89 | 3.87 | 0.73 | 3.76 | 0.00 |

## RESULTS CONT'D

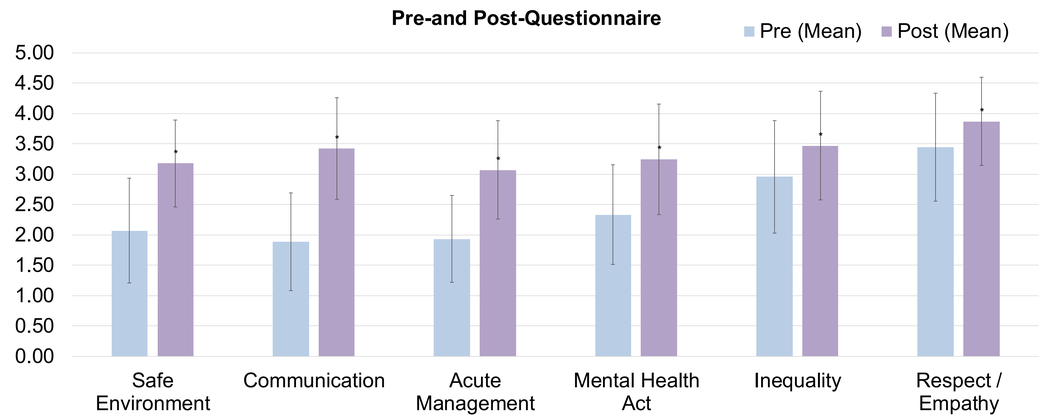


**Figure 1. Comparison of Pre- and Post-Simulation Questionnaire Responses.*** = p<0.05.

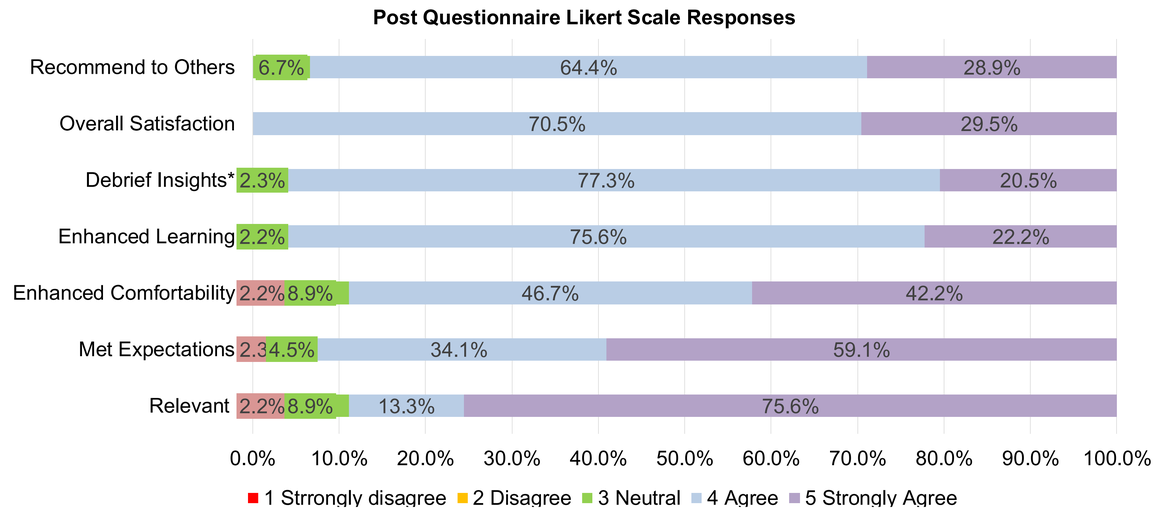


**Figure 2. Responses to Post-Simulation Questionnaire Likert Scale Questions.** *=n of 46

**Intention to Change Practice:** Themes identified included developing an organized approach to Code Whites, improving communication with the team and patients, taking a trauma-informed and patient-centered approach, and understanding pharmacologic management of Code Whites (n=26).

**Simulation Experience:** Themes included appreciating the ability to visualize the steps in managing Code Whites, using examples to develop an approach, and having the opportunity to debrief (n=20).

**Debrief Experience:** Themes included consolidation of learning, perspective broadening, engaging in self-reflection, and reducing stigma (n=15).

## DISCUSSION

Thus far we have demonstrated statistically significant improvement in PGY1's self-reported confidence in managing Code Whites across several domains. The largest change from pre- to post-simulation was communicating with the allied health team. Residents unanimously agreed that this simulation would lead to changes in their current practice. These findings strongly suggest that our Code White simulation training is effective in reaching its goal of providing residents with a better understanding of, and confidence in managing acute agitation in the psychiatric ED.

Qualitative analysis of explanatory responses identified several areas of medical competence that residents self-identified following completion of the simulation training. Notably, thematic analysis identified themes that are consistent with many CanMEDS roles – this includes pharmacologic management of agitation (Medical Expert), working with the allied health team (Communicator/Collaborator), developing an organized approach to leading Code Whites (Leader), taking a trauma-informed and patient-centered approach (Health Advocate), and engaging in self-reflection (Professional).

**References**

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