

M&Ms are not Smarties!

Aim

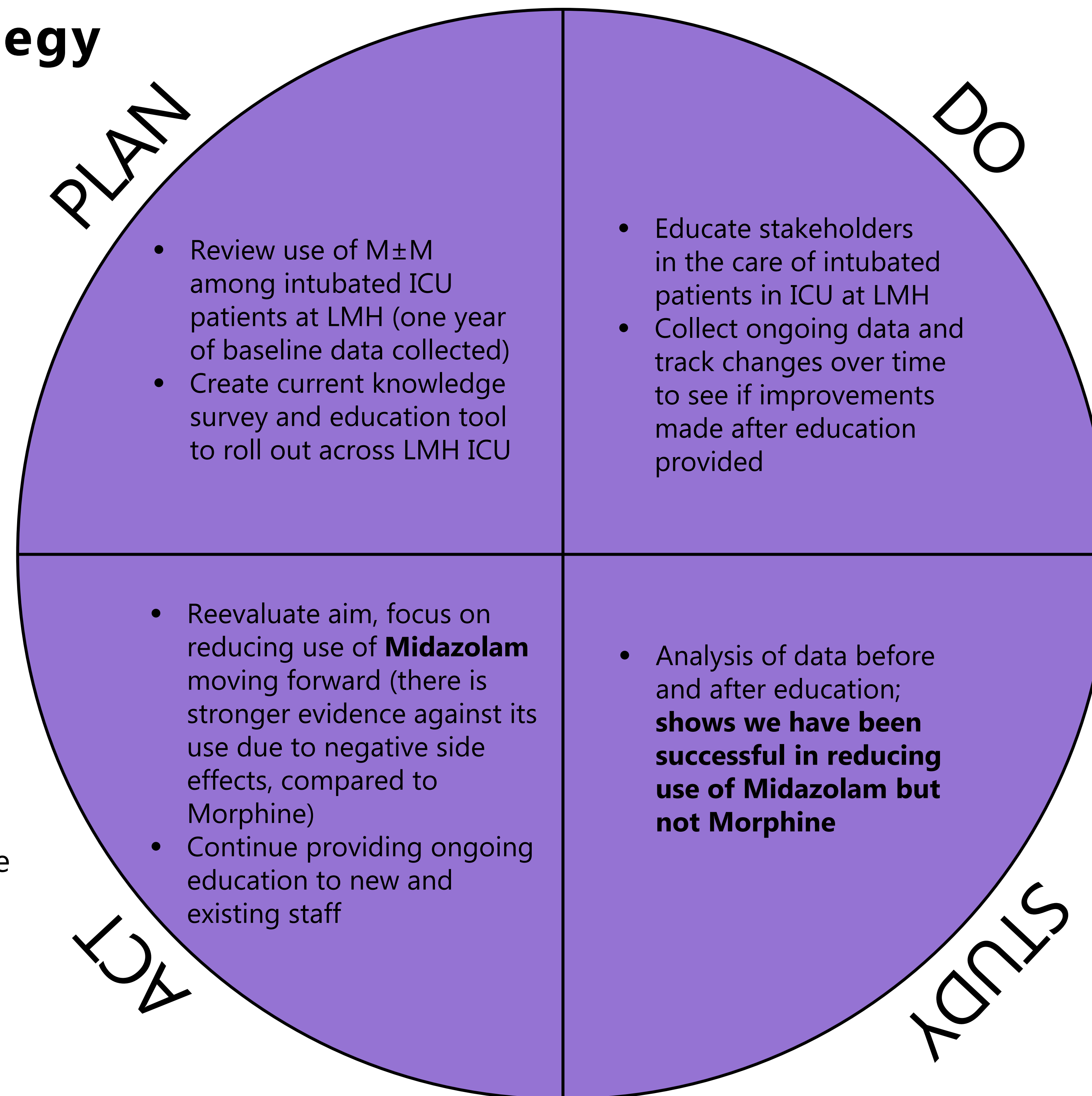
Decrease use of Midazolam and/or Morphine ("M±M") by 50% in intubated patients at Langley Memorial Hospital (LMH) Intensive Care Unit by June 1, 2019.

Project Design & Strategy

- * Meeting with team members; Manager, Pharmacist, Head of ICU and Patient Care Coordinator
- * Gathering baseline data, analyzing data from 2018 with support from volunteer
- * Initial survey of staff about their knowledge regarding sedation drugs
- * Education session for:
 - Physicians
 - Registered Nurses
 - Respiratory Therapists
 - Pharmacist
- * Feedback survey post education
- * Continuous education

Changes Made

- * We were able to decrease use of Midazolam by 40%
- * We were not as successful at reducing use of Morphine in our intubated patients
- * After providing education on alternatives to M±M, weekly physician and full-time nurses showed a decrease in use of M±M



Background

The majority of intubated patients need sedation and analgesia (1). Midazolam and/or Morphine (M±M) are used frequently in ICU patients (2,3) for sedation and analgesia (due to cheaper cost, accessibility, culture and probably the sweet name!)(4). There is a growing body of evidence that shows increased use of M±M leads to more frequent Ventilator-Associated Events (VAE), longer periods of intubation and ICU length of stay (5). M±M remains in the system longer than other medications, especially with patients who have a decline in kidney and liver function (common among critically ill patients)(6). Despite this evidence, better alternatives (e.g. Propofol, Dexmedetomidine, Fentanyl, Hydromorphone) are not used as frequently, likely due to higher cost, unfamiliarity of staff and lighter sedation (7,8).

Results

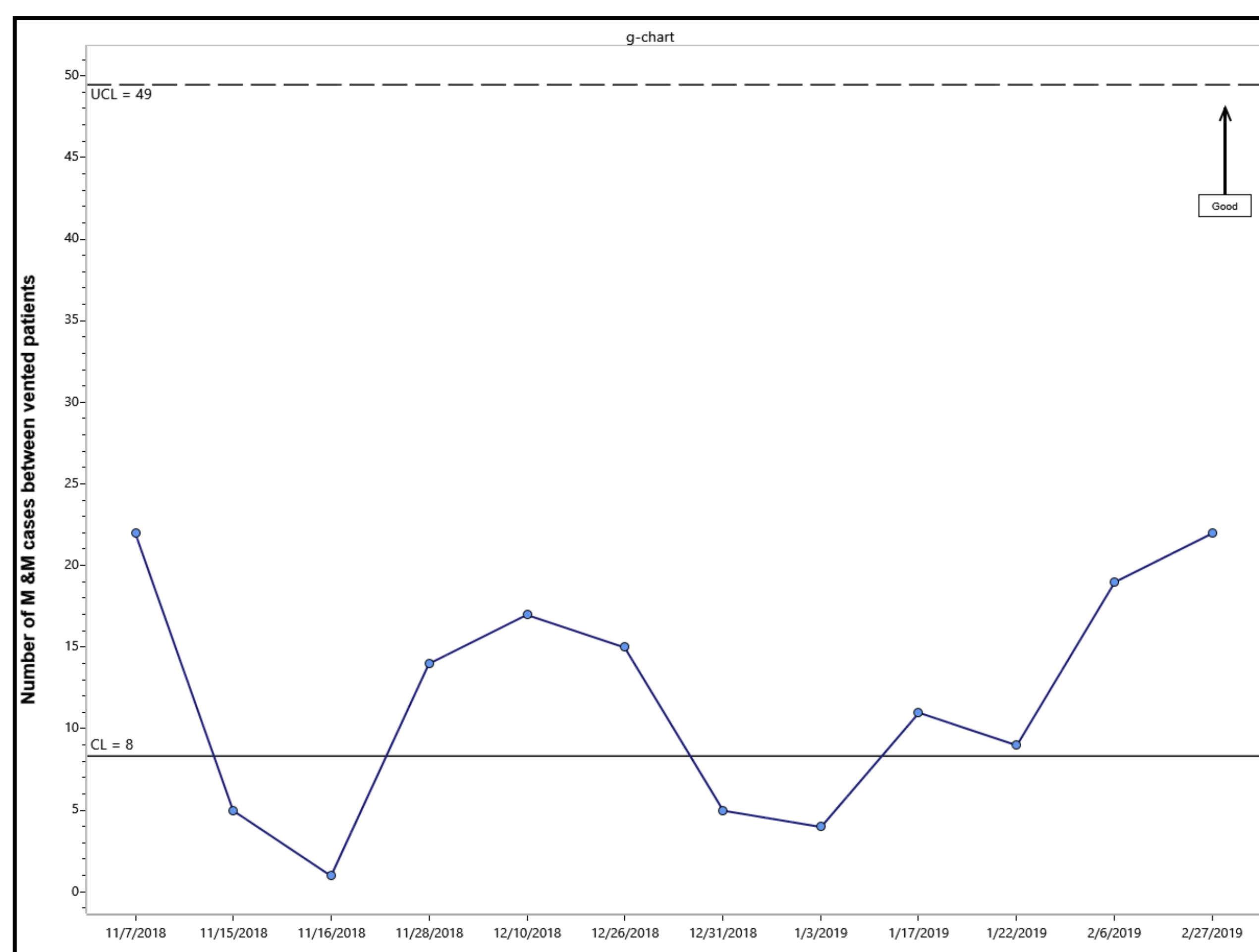


Figure 1. Outcome Measure: Number of M&M cases between vented patients at LMH ICU

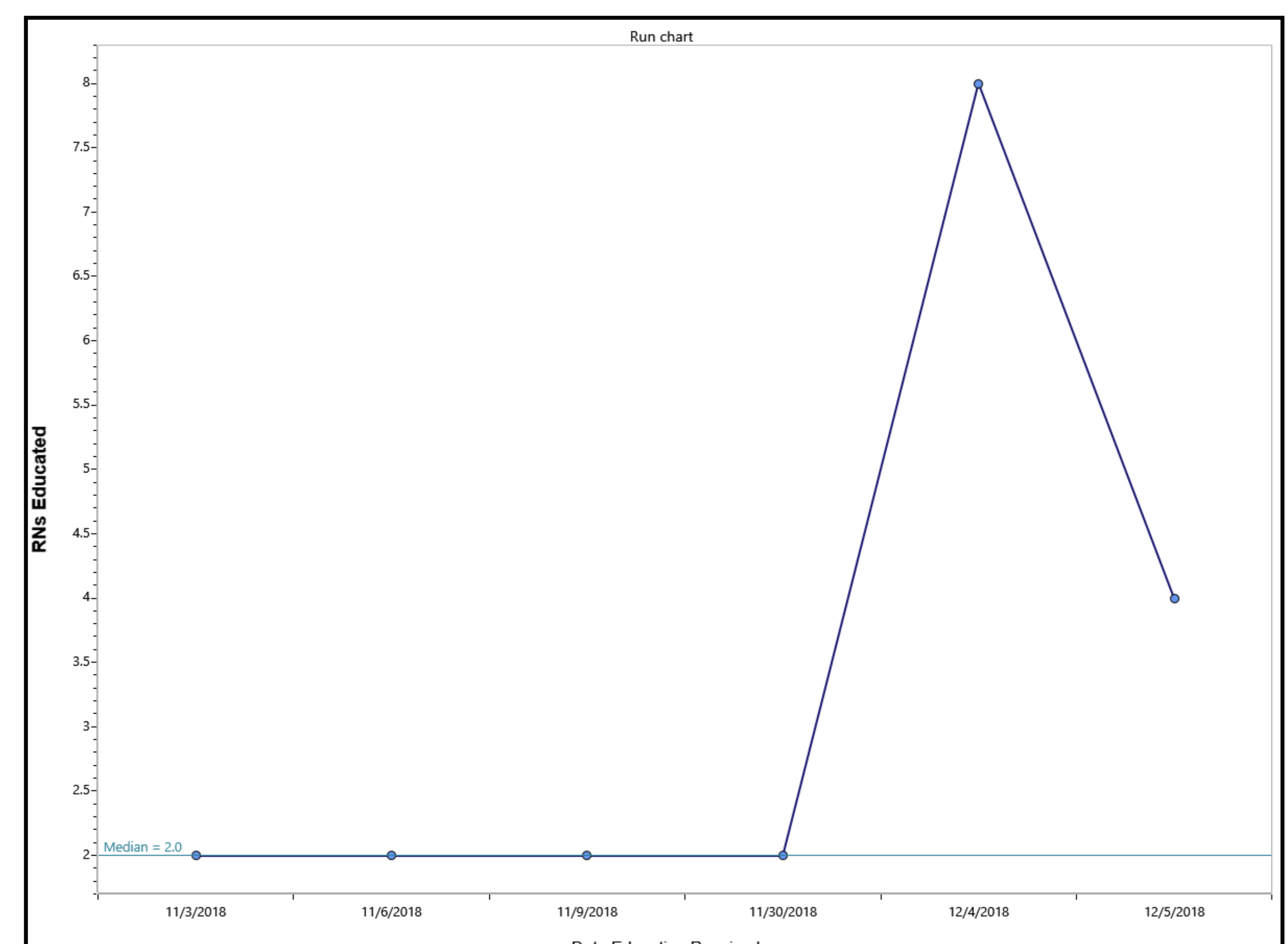


Figure 2. Process Measure: RNs Educated about M&M use and alternative for vented ICU patients

Lessons Learned

- * Weekly ICU physician played a positive role in using less M±M consistently, because they were able to track patients and carry forward decision to use alternatives to M±M throughout the week
- * Difficult to engage locum physicians and casual nurses, who were not receiving ongoing education like regular staff at LMH ICU
- * Reducing use of two different medications (from different classes of drugs and with two different purposes) can not easily be assessed or improved effectively in one QI project; important to keep scope small

Next Steps

1. Continue project with emphasis on further reducing use of Midazolam, due to supportive evidence against using Midazolam as sedation in intubated patients
2. Create a continuous alarm system for every mechanically ventilated patient who is on Midazolam to allow:
 - Pharmacists to flag patients on Midazolam for MD
 - MD can review in the morning, make applicable changes, and discuss with care team
3. Consider creating an email reminder for all new/temporary staff to engage and educate them in limiting use of Midazolam
4. Spread initiative to other ICUs in the region

Team

Dr Zuheir Abraham – Department Head, LMH ICU
Ravi Paul – CNE and Director, LMH ICU
Terry Satchwill – Director, LMH ICU
Gaurav Kumar – Head of Respiratory Therapy, LMH

Chris Lo – Pharmacist, LMH
Amanda Hogewoning – Charge Nurse, LMH ICU
Raemone Friesen – Charge Nurse, LMH ICU
Tova Dang – Volunteer
Janice Eng – Data Analyst, PQI

References

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