

Nighttime interruption de-escalation: a QI project

714 UPP team

01 Introduction

Night-time interruptions and disruptions to the sleep-wake cycle have been well established to contribute to delirium risk particularly in the elderly hospitalized patients (1). Interventions such as clinician decision support tool and care bundling have been shown to be helpful in de-escalation of these night time interruptions and in turn, mitigate delirium risk (2,3). Here we hope to utilize a variety of multi-disciplinary interventions to reduce night-time interruptions including vital checks, medicine administrations, and lab draws.

02 Objective

- To reduce night-time interruptions including vital checks, scheduled medicine administrations, and lab draws through multi-disciplinary interventions from baseline average of 3.5 to target of 2.5 nightly.

03 Method

Weekly audits are performed on a random day of the week on all patients currently on 714 unit. Nighttime is considered as 10pm to 6am.

Three variables are measured including 1) vital checks (as per ordered); 2) scheduled medication administration (per MAR); 3) lab draws (per actual lab draw time). PRN medications are excluded as they typically come from patient's request.

Four PSDA cycles have been carried out.

- Cycle 1, May: safety huddle with charge nurse and unit RNs at 11am
- Cycle 2, June: RN education on bundling of care and establishing target blood draw time to after 5am
- Cycle 3, July: provider education with laminated evidence-based decision-making tool on lab, vitals, and Tele de-escalation provided on 714 unit and work rooms.
- Cycle 4, August: q4h vital de-escalation and APP education

Run charts are made based on weekly audit data.

Authors

Shi, Xingyi, MD., Kazi, Anan, MD., Koritysskiy, Filip, MD., Garbade, Ellie, MD.

Affiliations

URMC Internal Medicine Department
714 UPP team.

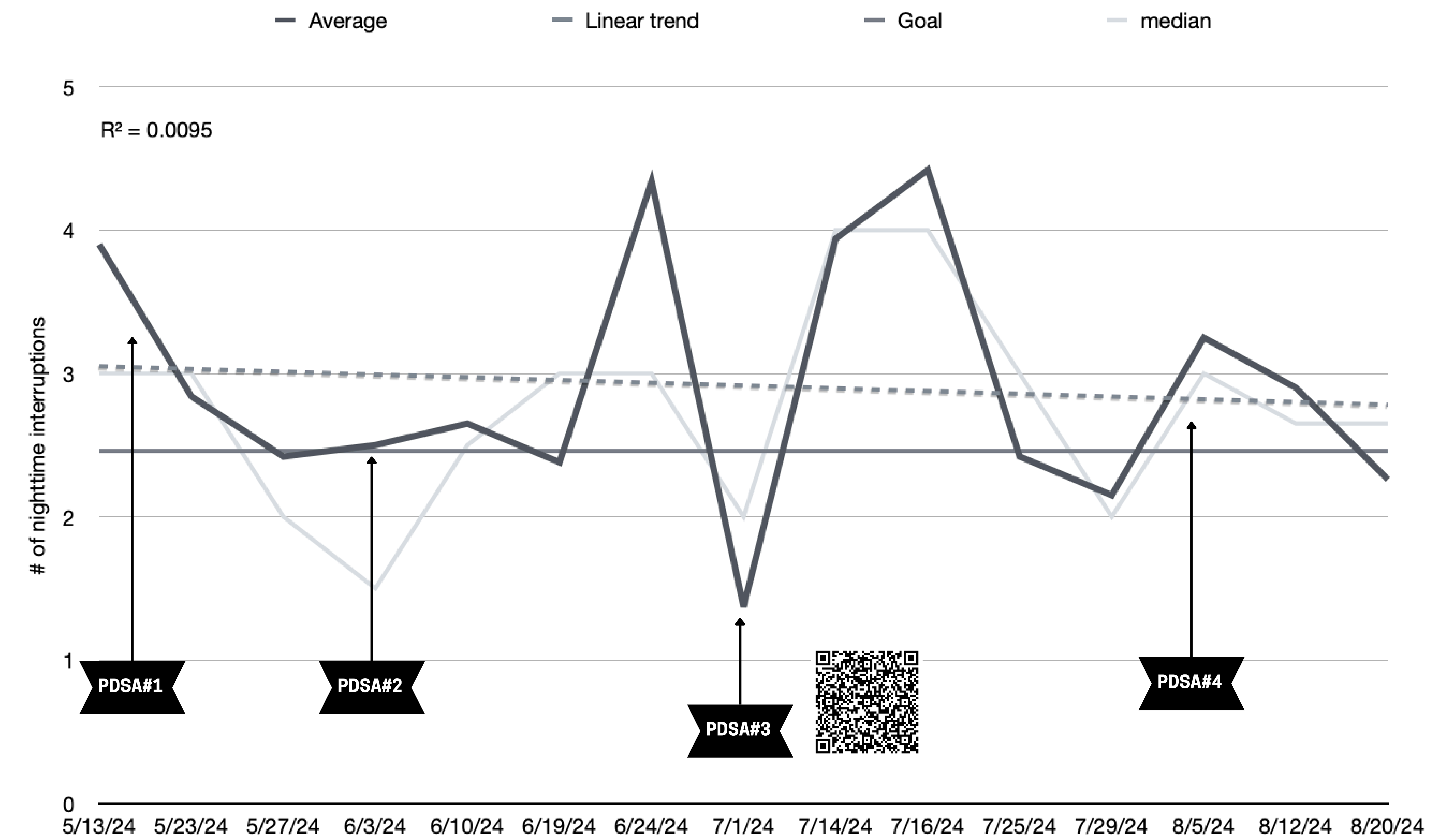


Figure 1. Run chart from from 5/13-8/20/2024 through 1-4 PDSA cycles. Linear regression trend line $R^2 = 0.095$.

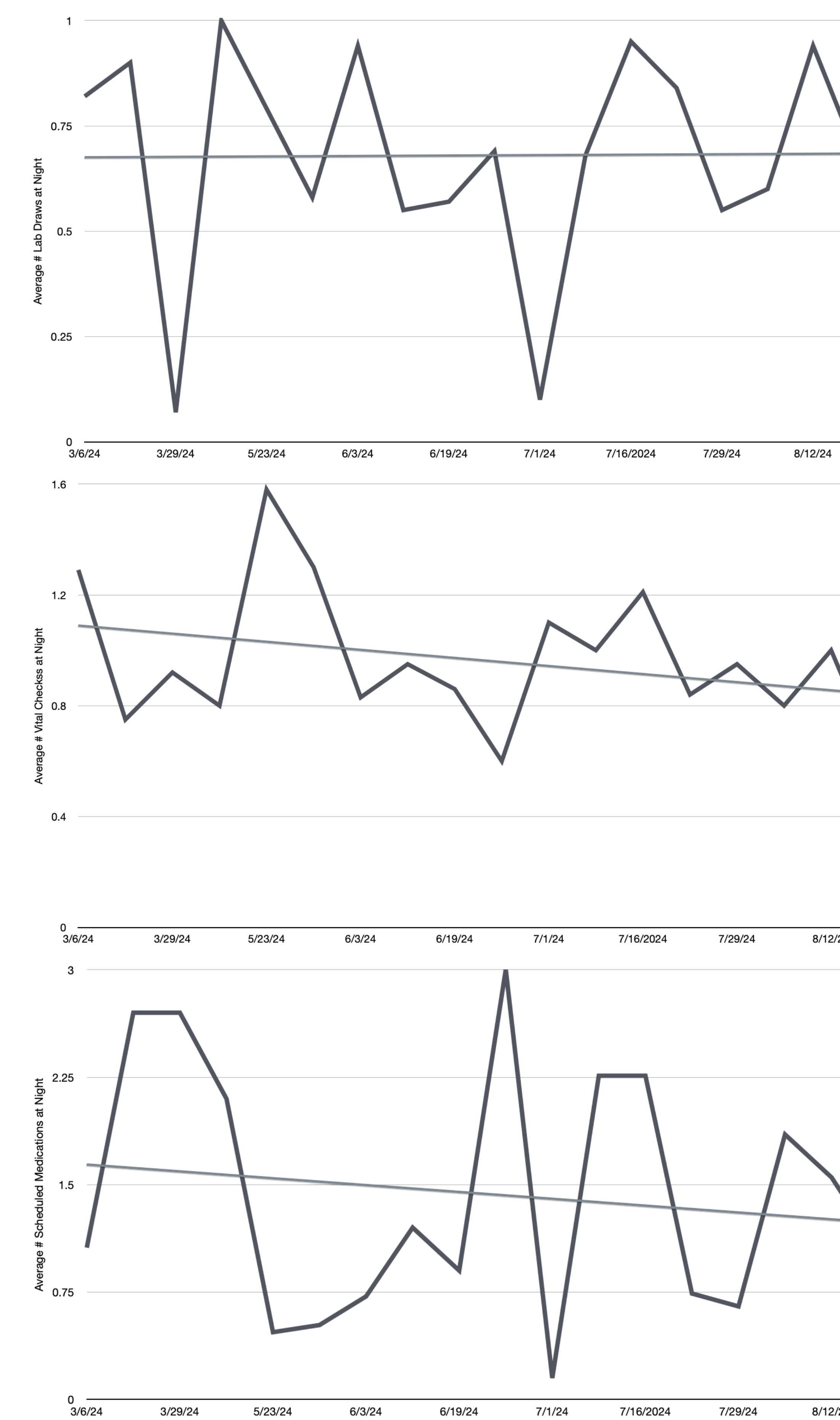


Figure 2A-C. Individual run charts for lab draws, vital signs, and scheduled meds with linear regression trend lines.

04 Results/Findings

Overall there is a general trend of decline in night-time interruptions since initiation of the QI projection. We have exceeded the goal of average 2.46 interruptions per night. Great variations exist between week-to-week audits. Main contributor to the night-time interruptions appears to be scheduled medications.

05 Discussion

Further effort can be made to minimize night-time interruptions as they have been shown to contribute to hospital-acquired delirium (1-3). Variations in data, understandably, are partially due to the fluctuating acuity of patients influenced by census and turnover. Education on telemetry can help with de-escalating vital checks as q4h vitals are mandatory on telemetry. Certain medications such as Eliquis and Tylenol can be easily re-timed to avoid the 10pm to 6am window. Further projects can focus on reducing overall unit-wide delirium scores with an emphasis on protecting the nighttime hours as one intervention.

Related literature

1. Pisani, M. A., & D'Ambrosio, C. (2020). Sleep and delirium in adults who are critically ill. *Chest*, 157(4), 977-984. <https://doi.org/10.1016/j.chest.2019.12.003>
2. Najafi, N., Robinson, A., Fletcher, M. J., & Patel, S. (2022). Effectiveness of an analytics-based intervention for reducing sleep interruption in hospitalized patients. *JAMA Internal Medicine*, 182(2), 172. <https://doi.org/10.1001/jamainternmed.2021.7387>
3. Tomita, J. E., Dalton, A., Presson, A. P., Zhang, C., Colaninzi, E., Lander, K., Howard, S., Beynon, J., & Kamdar, B. B. (2021). The effect of a quality improvement intervention on sleep and delirium in critically ill patients in a surgical ICU. *Chest*, 160(3), 899-908. <https://doi.org/10.1016/j.chest.2021.03.030>