



Patient Safety
MOVEMENT

Healthcare Organization Commitment

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Participants

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APSS

Have you reviewed the Patient Safety Movement Foundation's Actionable Patient Safety Solutions (APSS)?

Yes

What Patient Safety Challenge does your Commitment address?

Challenge 4 - Monitoring for opioid-induced respiratory depression

Commitment Name

Monitoring for Opioid-induced Respiratory Depression

How Many Hospitals Will This Commitment Represent?

1

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Commitment Details

Commitment Summary

Continuous monitoring for opioid-induced respiratory depression with pulse oximeter regarding in-hospital patients with opioid infusion intravenously has been performed for one year in our hospital. However, patients in ward with oral opioid were monitored only every 8 hours as ward routine. While opioid-induced respiratory depression could still happen to patient with oral opioid.

Action Plan

1. All in-hospital patients with intravenous and subcutaneous opioid infusion, and oral opioid plus intravenous sedative agents, will be monitored continuously with pulse oximeter. 2. The data obtained from bedside pulse oximeter will be transmitted to HIS and shown in TPR sheet in the electronic medical chart every 2 hours. Meanwhile, the data will be transmitted to the central nurse station. 3. When the patient's SpO2 fall below 90%, the alarm of pulse oximeter will be triggered and the in-charged nurse will be notified via wireless pager. 4. For patients who receive only single dose of opioid, the in-charged nurse will return to the patient 30 minutes after the medication given, to re-evaluate the pain score and SpO2 will be checked with pulse oximeter at the same time. 5. Educate all staff, patients, family members and care-givers on the common contributing factors leading to opioid-induced respiratory depression and side effects of opioids and sedatives. 6. Review the action plan from time to time in the regular meeting of Pain Management Committee, and revise as needed.

Impact Details

Lives Saved

Methodology for Determining Lives Saved

The study by Taenzer et al., which published in January 2010, reported that rescue events decreased from 3.4 to 1.2 per 1,000 patient discharges after implementation of the system, which included continuous pulse oximetry monitor and notification sent to in-charged nurse via pager. For our hospital, continuous monitoring with pulse oximeter regarding in-hospital patients with opioid infusion intravenously, but not all surgical patients, has been performed

for recent one year. To our knowledge, there is no case of opioid-induced respiratory depression that leads to cardiac or respiratory arrest. Reference: 1. Taenzer AH, Pyke JB, McGrath SP, Blike GT. Impact of pulse oximetry surveillance on rescue events and intensive care unit transfers: a before-and-after concurrence study. *Anesthesiology*. 2010; 112:282-7. Doi: 10.1097/ALN.0b013e3181ca7a9b. 2. Sun Z, Sessler DI, Dalton JE, Devereaux PJ, Shahinyan A, Naylor AJ, Hutcherson MT, Finnegan PS, Tandon V, Darvish-Kazem S, et al. Postoperative hypoxemia is common and persistent: a prospective blinded observational study. *Anesth Analg*. 2015;121: 709–715. doi:10.1213/ANE.0000000000000836. 3. Khanna KA. Respiratory depression on the wards: why better monitoring may be the answer? *Anesthesiol Open J*. 2017;2:9–11. doi:10.17140/AOJ-2-109. 4. Gary M. Oderda, Anthony J. Senagore, Kellie Morland, Sheikh Usman Iqbal, Marla Kugel, Sizhu Liu & Ashraf S. Habib (2019): Opioid-related respiratory and gastrointestinal adverse events in patients with acute postoperative pain: prevalence, predictors, and burden, *Journal of Pain & Palliative Care Pharmacotherapy*, DOI: 10.1080/15360288.2019.1668902 5. Ochroch EA, Russell MW, Hanson WC III, Devine GA, Cucchiara AJ, Weiner MG, Schwartz SJ. The impact of continuous pulse oximetry monitoring on intensive care unit admissions from a postsurgical care floor. *Anesth Analg* 2006;102:868–75