

## CPI in the Intensive Care Unit

Many Intensive Care Unit (ICU) patients are placed on a ventilator to recover from surgery or because their lungs are not working as a result of a disease or infection. However, staying on the ventilator for too long potentially exposes patients to a higher risk of infection. Patients on ventilators need to be sedated to keep them more comfortable and tolerate having a tube inserted. These patients must also be slowly weaned off the sedation once their lungs are healed. A team from the ICU at Seattle Children's Hospital leveraged continuous performance improvement (CPI) to set a standard sedation protocol to reduce patient time on ventilators, and reduce the duration of their stay in the ICU.

### Challenge

- Decrease patient time on ventilators by standardizing a process to minimize the length of sedation, thereby decreasing the risk of infection and the length of stay in the ICU

### Solution

- Introduce a more efficient sedation process (and standard protocol) by empowering the nursing staff to increase rounding on these patients from once a day to up to four times a day to keep sedation drips at a lower, more appropriate level
  - The hospital utilized CPI principals to deliver the right amount of sedation for each patient, every time
  - Through careful monitoring, when a patient was receiving more sedation than necessary, nurses would dial the drips down
  - Seattle Children's is able to wake patients up quicker once their lungs are better, thereby getting them off the ventilator more quickly and home sooner



### Results

- Patients received significantly fewer days of sedative and analgesic drug infusions and required a shorter duration of mechanical ventilation and fewer days in the ICU
  - Patients remained on ventilators 20% fewer days
  - Patients spent 20% fewer days in the ICU, and were able to leave up to two days sooner
- With a quicker turn-over in the ICU, more patients are able to get beds and care when needed

"The longer you spend in the ICU, the risk of infection increases. So, the quicker you can get better, the quicker we can get you home. And if we can get you off the ventilator faster, that's really one of our number one priorities."

*Howard Jeffries, Cardiac Intensivist and Medical Director, Continuous Performance Improvement*