

[NM-282] PAIN RESOLUTION TIME IN THE POST ANESTHESIA CARE UNIT: A QUALITY IMPROVEMENT APPROACH

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Background

Pain is one of the most feared and distressing complications in the postoperative period for any child undergoing surgery. Moreover, inadequate pain control in the post-anesthesia care unit (PACU) can lead to extended length of PACU stay and decreased efficiency. The time taken to achieve adequate pain control in the (PACU) is influenced by numerous factors. This is a quality improvement project with the aim of decreasing the time interval from the detection of pain to adequate control of pain in the PACU.

Methodology

This project utilizes the Institute of Medicine (IHI) Model for Improvement methodology¹. The first step was to perform an observational study to determine the median time interval from the detection of pain to adequate control of pain, as judged by PACU nursing staff. Next, a multi-disciplinary team was formed, and created a process map for pain control in our PACU. Once there was agreement on the process, stakeholders voted to determine which process steps were most likely responsible for the delay. Upon determining these steps, small trials of change will be designed, and tested utilizing the IHI Plan-Do-Study-Act (PDSA) approach.

Results

In 117 observations, the mean time from pain recognition to pain resolution in the PACU was found to be 33.2 minutes with a median time of 26.0 minutes. When adjusted for age, the median time for children less than 3 years (N= 34) and greater than 3 years (N=83) was 20 and 30 minutes respectively. Only 23.9% of patients achieved pain control within 15 minutes. Process steps identified by the team as key drivers for delay in pain resolution included the availability of the attending anesthesiologist, the anesthesiologists' inconsistency in utilization of available PACU pain order sets as well as inconsistency in the type and dosing of pain medication. Interventions were then designed to address each of the key drivers, with the first being standardized usage of pre-written pain orders in the pediatric general surgical population.

Conclusion

Inadequate pain control in the PACU is problematic from both a quality of care, and efficiency of care standpoint, both of which are dimensions of quality as defined by the Institute of Medicine². We suspect that that process issues play a significant role in pain control and that improvement methodology can improve this aspect of perioperative care. Future interventions may include standardized medication dosing for certain procedures, and electronic medical record decision support for prescribers. These will be tested individually using the PDSA approach.

References

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 2. Varughese A., Hagerman, N., Kurth, C. Quality in Pediatric Anesthesia. *Pediatric Anesthesia*. 20:2010;684-96
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