

# Optimizing Patient Pain Control in the Post Anesthesia Care Unit by Initiating Epidural PCA Pumps in the Operating Room

## Background

Certain surgeries benefit from epidural Patient Controlled Analgesia pumps (ePCAs). The expectation is that they provide better postoperative pain control, while decreasing recovery time. Normally, medications get dosed through the epidural during surgery, with the idea that patients will arrive to the PACU comfortable. Upon arrival, the ePCA is then set up by the PACU nurse and connected by anesthesia.

Starting an ePCA takes valuable PACU time. Patients often wait for their ePCA to be connected to their epidural catheter and they're often are not ready at the time of patient arrival for multiple factors. Delays can be further compounded by the lack of PACU anesthesia resident accessibility. PACU nurses cannot connect the pumps to the patient's epidural catheter. So, if the PACU anesthesia resident is occupied, they are not readily available to come to connect the pump.

Multiple delays in initiating ePCAs can cost patients much pain. If patients were to come to the PACU with the ePCAs already connected and infusing, patient pain levels would be more tolerable and easier to manage. This can reduce additional opioid usage and can decrease patients' time in the PACU.

- P** – Patients having surgery that typically are given ePCAs postoperatively
- I** – Anesthesia providers initiated ePCAs in the OR during surgery
- C** – Pre-implementation pain scores upon arrival to PACU vs post-implementation scores
- O** – Patients have decreased pain when ePCAs are started in the OR

## Methods

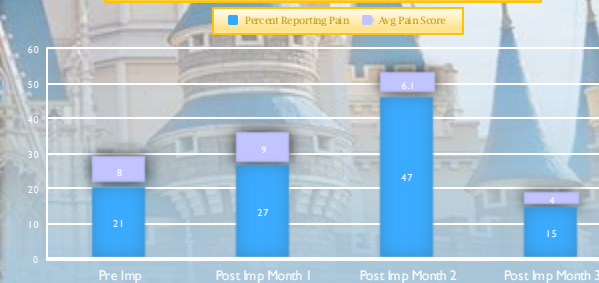
In conjunction with the anesthesia team, the anesthesia providers were educated on how to set up the ePCA in the OR and their new duties regarding usage and sign-out in PACU. Block nurses were instructed to send an ePCA into the OR after epidural catheter placement to streamline the process. PACU nurses were educated on the new process, which includes the anesthesia provider performing ePCA handoff on the EMR with the receiving nurse.

## Outcomes/Results

A retroactive chart review was performed for one month. Twenty-one percent of patients ordered for ePCAs complained of pain upon arrival to PACU, with an average pain of 8/10. We also recorded the time it took for the ePCA to be connected and initiated, which was 66 minutes.

Post-implementation, 3 months of chart review of epidural patients was done. In the first month, 27 percent of patients reported pain upon arrival to PACU, with an average pain score of 9/10. The second month, 47 percent reported pain upon arrival, but with an average score of 6.1/10. For the third month, only 15 percent of ePCA patients reported pain upon arrival, with an average score of 4/10.

PAIN SCORE UPON ARRIVAL TO PACU



## Discussion

As with any project, kinks needed to be worked out in the beginning. EPCA formulations needed to be adjusted frequently, since anesthesia would only do their own infusions and boluses in the OR, as they were accustomed to doing. Some patients didn't come out with the ePCAs connected, which could have skewed results. Therefore, we gave the project a month to become streamlined before chart review. There are few, if any, issues regarding the process currently.

## Conclusion

The results of this project show that this is a beneficial process. The patients have reduced pain scores upon arrival to PACU and immediate action can be taken, since the ePCA is already infusing and the orders have already been placed. The flow has also improved for the nurse, since the time that was used for set-up can now be dedicated more to patient care and documentation.

## Implications for Perianesthesia Nurses and Future Research

Implications for this project are promising. By initiating the ePCA in the OR, there should be no increase in patient pain between the OR to the PACU, since the medications are continuously infusing. In turn, patients should hopefully require as minimal opioid administration as possible, which is a nationwide crisis.