

HOW HOSPITALS ARE INCREASING EFFICIENCY AND THROUGH-PUT WITH REGIONAL ANALGESIA

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Increasing efficiency and through-put in the hospital environment has the potential to maximize resource utilization. Methodical department flow, allowing expedited patient turnover, provides economic benefits to the facility while enhancing the patient experience. With average costs per inpatient day at non-profit hospitals in the U.S. at \$2,025 as of 2010,¹ the ability to increase bed turnover and accelerate patient through-put may be beneficial from a financial standpoint.

A continuous regional block may result in fewer interruptions in physical therapy, narcotic reduction, and reduced hospital length of stay.^{3,4}

One way to potentially expedite bed turnover is through the use of multimodal methods for controlling post operative pain including regional analgesia, which also offers numerous clinical benefits. Through-put in the perioperative area is facilitated by pre-planned analgesia including pre-emptive regional block boluses – which may result in reduced anesthetic requirements during surgery. One meta-analysis showed that peripheral nerve blocks, for example, may reduce PACU times – or PACU may be bypassed altogether, since pain is well controlled and opioid side effects are minimized.² Postoperatively, a multimodal protocol employing a continuous regional block may result in fewer interruptions in physical therapy, narcotic reduction, and reduced hospital length of stay.^{3,4} Early mobilization and release may translate to reduced exposure to hospital-acquired infections, and complications related to opioid side effects or immobility.⁵

Side effects from opioid-based analgesia, such as nausea and vomiting, urinary retention, constipation, and sedation hamper recovery and extend patient stays.^{6,7,8} In hospitals, regional analgesia with continuous local anesthetics delivered by the ON-Q* Pain Relief System has been shown to reduce overall opioid consumption.⁹ Since adverse drug events directly attribute to the total volume of opioids consumed and may extend hospital stay or prevent patients from participating in physical therapy, a concerted effort around opioid reduction may help expedite patient recovery. For the physical therapy (PT) department, ON-Q* may aid in recovery via improved non-narcotic pain control – with a decrease in complications often associated with opioid pain medications.^{7,8}

Increased costs related to increased length of stay are often pharmacy-related expenses. These costs may be particularly significant for patients taking a regular regimen of prescription drugs. Patient medications are replaced in the hospital at the facility's expense, potentially raising the cost of care for each additional day. Extended lengths of stay may also impact exposure to hospital-acquired infections (HAI).⁵ These are costly infections to treat, which may result in additional pharmacy expenses related to expensive antibiotic medications. The pharmacy may also benefit from a reduction in medicines to treat post-operative nausea, vomiting, as well as constipation – side effects often caused by opioid-based pain solutions.⁶

Regional analgesia can also play an important role by emergently managing trauma pain. For example, rib fractures cause intense pain that may hamper the ability to breathe. Ability to aggressively manage pain may preempt the need for a ventilator with a consequent

intensive care unit (ICU) admission, potentially freeing those beds for more complicated cases. If pain is the primary reason for patient admission, managing that effectively may allow the patient to avoid admission with an infusion of local anesthetic via ON-Q* at home.

ON-Q* is an elastomeric pressurized pump requiring one initial fill by pharmacy. This one-time, simple operation does not require the pharmacy to replace cartridges or fill bags. Nurses do not have to load, handle or monitor cartridges. In addition, ON-Q* does not have an alarm that could go off, falsely, and unnecessarily warrant nursing attention. Perhaps more importantly, it helps reduce the current concern about "alarm fatigue." Studies show that between 72 to 99.4% of clinical alarms are false.¹⁰ However, the great quantity of alarms firing off across the nursing floor may create sensory overload and desensitization to legitimate alarms, sometimes resulting in deaths.¹¹ This issue with alarm fatigue resulted in new requirements mandated by The Joint Commission in 2016.¹²

Fewer alarms also translates into more peaceful rest for patients. The quieter recovery environment may improve Hospital Consumer Assessment of Healthcare Providers

Improved scores may lead to increased reimbursement for hospitals under the Value Based Purchasing requirements.¹⁶

and Systems (HCAHPS) scores, contributing to the "quietness initiative" related to the hospital environment. Effective pain management is a factor in patient satisfaction,^{13,14,15} which impacts HCAHPS scores. In some cases, these improved scores may lead to increased reimbursement for hospitals under the value-based purchasing requirements.¹⁶

In conclusion, ON-Q* is part of a multimodal technique clinically proven to deliver more effective pain management than traditional methods alone, while increasing patient satisfaction scores and reducing opioid-related side effects.^{7,8} Planning analgesic protocols including continuous regional analgesia can deliver predictable results that may reduce costs by accelerating post-operative recovery and improving pain relief.⁸

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