Fluid warming across care areas: Outpatient care

The number of outpatient surgeries conducted in the United States rose over 67 percent in the 10-year period from 1996 to 2006.¹ This phenomenal growth has been most seen in the freestanding facility space, as outpatient surgery visits to freestanding centers tripled over this same 10-year period.¹

While outpatient surgeries are often considered lower-risk, less-intensive procedures, many of the same challenges that confront hospital-based procedures still apply in the outpatient environment. One of these challenges is the risk for patient hypothermia.

History has shown us that hypothermia can occur in up to 90 percent of all surgeries, regardless of whether it is carried out in a hospital setting or an outpatient environment. Hypothermia is caused by a variety of factors, including low operating-room temperatures, surgical incisions, a core-to-peripheral redistribution of body heat from anesthetics, volume of chilled fluid administration, and more.²,³

Heat loss during the first hours

National data shows that the average time spent in the operating room during an outpatient surgery visit varies from 61 minutes for hospital centers to 43 minutes for freestanding centers.¹ When you add in preoperative waiting time and post-operative recovery time, the length of time a patient may be compromised increases to 146 minutes and 97 minutes respectively.¹

While at first glance these procedure times may seem short, this length of time provides ample opportunity for a patient to lose core body heat. Research shows that the greatest heat loss takes place in the first hour of a surgical experience due to exposure, prepping, and more.⁴

Sometimes core body temperature is not even the result of OR dynamics, as temperature loss can occur even before the patient reaches the operating room. An analysis of procedures over a six-month period showed that more than 30 percent of same-day surgery patients had hypothermic core temperatures on admission to the preoperative unit.⁵

Hypothermia’s impact on recovery time

Most healthcare providers require that patients have a core body temperature of no less than 36 °C (96.8 °F) to be discharged from recovery after a surgical procedure, resulting in longer length of stay for hypothermic patients.⁶,⁷,⁸ In fact, research has shown that hypothermic patients require approximately 40 minutes longer to reach fitness for discharge, even when normothermia is not a criterion for discharge. Recovery time was approximately 90 minutes longer when a normal core temperature (> 36 °C) was required for discharge.⁶
Lengthening patient discharge times can lead to an increase in the use of resources and a slowdown in an outpatient center’s workflow, potentially resulting in increased costs.

Benefits of fluid warming during outpatient surgeries

While there are various methods to keep a patient warm in the outpatient surgery center setting, intravenous (IV) fluid warming works well when used along with other warming therapies because heat transfer from warmed fluid is efficient, immediate, and independent of the peripheral-to-core temperature gradient.9

Research analyzing fluid warming in the surgery center environment has proven that the technology positively impacts core body temperatures.10,11 Many studies have shown that fluid warming yields higher post-operative core temperatures, lower rates of perioperative hypothermia, lower requirements for intraoperative analgesia, and shorter recovery time when compared to ambulatory patients who do not receive fluid warming.10,11

Putting the enFlow® warming system to work in the ambulatory setting

The enFlow® warmer is an IV fluid and blood warmer with excellent accuracy, mobility, and speed. This makes it well suited for the ambulatory surgery center. The warmer’s single-patient-use cartridge actually moves with the patient—providing a cost effective way to warm across procedures and rooms. The enflow disposable cartridge may be inserted into all standard IV fluid/blood delivery sets at the start of procedures and then placed into the lightweight warmer. When it is time to move to the next area of the surgical workflow, the user simply removes the cartridge from the enFlow warming unit, allowing the IV set in its entirety to be moved with the patient when transported. Once the patient arrives at the next area, the cartridge is easily inserted into an enFlow warming unit stationed in that area and is quickly back to heating.

Continuous warming enabled by enFlow means that patients may have their core temperatures maintained across the surgical care pathway, which may lead to improved outcomes such as reduced recovery time.

Contact us

To learn more about the enFlow IV fluid/blood warming system for outpatient facilities, please contact Customer Service at 800.323.9088 or visit carefusion.com/VitalSigns.

References

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