Warming up to tackle surgical site infections

A year on from the publication of the NHS Elective Recovery Plan, there remains a backlog of over 7 million people in the UK waiting for elective care (BMA 2023).

For this waiting list to be reduced, it is essential that patients are moved safely and smoothly through surgery and are supported to have a swift recovery. This will enable more patients to flow through our operating theatres, while ensuring that those undergoing surgery can return to their families, to work, and to doing the things which they enjoy most.

Central to maintaining this flow is reducing the risk of any potential complications during surgery, such as surgical site infections (SSIs). There are up to 60,000 SSIs in the NHS every year, causing significant harm to patients, as well as resulting in increased hospital stays, readmissions and re-operations (NICE 2014). This can all incur significant costs to the NHS.

Encouragingly, up to 60% of SSIs are preventable (Diaz 2015). Over the past few years, we at Mölnlycke – a leading medical solutions company – have been working collaboratively with clinicians, patient representative organisations and policymakers to help raise awareness of SSIs. We've been utilising insights from across the system, along with existing clinical guidance, to develop and present solutions to drive down infection rates and improve patient experience.

Based on this evidence generation, we know that one way we can make a difference is by supporting greater uptake of active pre-warming surgical patients across the NHS. Recommended by NICE guidelines, active warming of patients preoperatively is shown to reduce the risk of hypothermia and lower the risk of postoperative complications (NICE 2008).

The risks of perioperative hypothermia

When patients are preparing for an operation, the majority will know that they will require anaesthesia to prevent pain and discomfort during the procedure. However, very few will likely know the impact of anaesthetics on their body temperature.

During surgery, a patient's core temperature can drop as low as 35 degrees Celsius because of the anaesthetic, putting a patient at risk of inadvertent hypothermia. Hypothermia is defined by a core body temperature of less than 36 degrees Celsius, and this significant lowering of the body temperature impacts more than 70% of patients undergoing surgery (Dostálová et al 2017). Some patients are more at risk of hypothermia than others. Patients particularly at risk include those undergoing general anaesthesia, geriatric patients, patients with low body mass index (BMI) and patients undergoing surgery in low ambient operating room temperatures (Sessler 1997).

Studies have shown that perioperative hypothermia can have significant negative impacts, including impairing coagulation, drug metabolism and a three-fold increased risk of surgical wound infections (Koc et al 2017).

Patients can also experience other complications including additional blood loss and increased pain scores as a result (Sessler 1997). Furthermore, hypothermia delays wound healing and has been shown to prolong the patient's length of stay in hospital by 20%, even in patients who do not suffer an infection, leading to hospital stays that are on average two days longer than necessary (NICE 2008, Sessler 1997).

Therefore, not only is avoiding hypothermia critical to improving patient safety and infection prevention; it is also critical to ensuring efficient use of hospital resources. Any clinical measures which can be taken to reduce length of hospital stays and rates of SSIs will help to ease the current elective care backlog facing the health system. >>

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Your surgical pre-warming solution.

The BARRIER® EasyWarm® blanket reaches operational temperature within 30 minutes, which is maintained for up to 10 hours.

- Use before, during and after surgery helps prevent hypothermia[1]
- Works without additional equipment for set up and during use

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Importance of efficient patient warming

Given the risks associated with perioperative hypothermia to both patients and the wider health service, NICE guidelines recommend that patients should be actively pre-warmed for surgery to reduce the incidence of perioperative hypothermia. NICE recommends active warming preoperatively for all surgical patients, with guidance on when to start warming dependent on a patient's temperature (NICE 2008). Devices to keep the patient warm are therefore an integral element of the surgical patient pathway to promote efficient warming (NICE 2008).

To warm a patient before surgery, the patient can be provided with a warming blanket on the ward. Mölnlycke's versatile BARRIER® EasyWarm® blanket can maintain an average temperature of 44 degrees Celsius for up to ten hours, which enables its use throughout the patient pathway, meaning the same blanket can be used to actively warm the patient throughout the perioperative journey. NICE has highlighted in its latest guidance that conductive warming devices, such as the BARRIER EasyWarm blanket are less likely to cause surgical site infections than forced-air warming (FAW) devices which are more likely to disrupt the air flow around surgical sites (NICE 2008).

While minimising the serious risks associated with perioperative hypothermia for patients, the BARRIER EasyWarm blanket also has advantages for hard working operating theatre teams. A 2019 study found BARRIER EasyWarm self-heating blankets have major advantages such as reducing clutter in the operating theatre and trip hazards due to the absence of electrical or other cords (Thapa et al 2019). It has benefits for wider hospital staff too. The blanket has no need for additional equipment and requires no AC power. This makes transporting patients through the hospital easier and more efficient.

Collaboration is key to ensuring universal uptake of pre-warming

Despite pre-warming of patients being recommended in NICE guidance, the reality is the implementation of active pre-warming remains more mixed in practice.

In trusts where pre-warming is being delivered, the benefits are clear. For example, in Ashford and St Peter's Hospitals NHS Foundation Trust, it was shown that pre-warming with a BARRIER EasyWarm blanket reduced perioperative hypothermia rates in a group of 422 patients from 44% to 3% and was recognised in a Getting it Right First Time report on SSIs (GIRFT 2019). The challenge is now to ensure that this best practice is embedded across the system, and central to this, is collaboration.

First, collaboration is needed across theatre and ward teams, utilising a multidisciplinary approach. We need to ensure that staff across the patient pathway work together to begin warming before patients go to theatre and are kept warm following their surgery. This can be supported with products such as BARRIER EasyWarm, which can easily travel with the patient from the ward to the operating room. To support close collaboration, organisations like the Association for Perioperative Practice (AfPP) play a critical role by providing education materials to ensure that staff working across the surgical pathway understand the importance of pre-warming patients for surgery.

Second, to drive the uptake of patient pre-warming, we also need to foster closer collaboration between surgical teams and procurement teams to ensure that clinicians have the tools they need to deliver safe and effective care for patients. This means placing patient outcomes at the heart of discussions around 'value' when making procurement decisions. A close relationship between procurement and clinical teams can support procurement in making informed choices about products and increase operational productivity in the hospital.

Third, it requires collaboration with industry, not only to ensure pre-warming devices are focused on achieving the best outcome for the patient, but also that theatre teams have the support and education they need to embed their use in patient pathways and unlock their wider benefits. Mölnlycke is a committed partner in protection to the NHS in driving forward SSI prevention, and works with healthcare professionals, hospitals, and policymakers to raise awareness, provide education and help embed solutions.

Conclusion

To achieve the ambitions set out in the NHS Elective Recovery Plan, it is critical that patients move through the operating theatre without complication, and without putting further pressure on NHS teams. Hypothermia represents a threat to this, increasing the likelihood of challenging infections following an operation. Collaborating and learning from best practice to implement patient pre-warming with solutions such as BARRIER EasyWarm is a simple step trusts can take to reduce SSIs in their hospitals (GIRFT 2019).

Doing so is vital to improve surgical outcomes for patients, clinicians and the wider health system. ■

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