

# Facts About Forced-Air Warming

Safe, effective forced-air warming maintains normothermia, which is proven to reduce surgical site infections

In this article, we want to address some inaccuracies about forced-air warming that makers of competing technologies are promoting. We urge you to review the facts, forced-air warming's proven track record of safety and efficacy, and your own experience in assessing the important role forced-air warming plays in patient care.

- Forced-air warming is the gold standard of care for managing peri-operative normothermia in operating rooms throughout the U.S.<sup>1-6</sup>
- During the past 25 years, nearly 180 million patients worldwide have been warmed peri-operatively using Forced-Air Warming therapy and FAW forced-air warming. In that time, there has never been a report of a surgical site infection linked to the use of either warming system.
- Forced-air warming has been studied extensively – there are more than 170 published studies documenting the clinical benefits of maintaining normothermia.
- Published research papers have shown that the use of forced-air warming does not increase either the risk of wound contamination in the operating room or bacterial contamination of operating rooms.<sup>7-9</sup> In fact, when tested during actual surgical conditions, research has shown that forced-air warming actually decreases the bacterial count at the surgical site.<sup>8,9</sup>
- Normothermia is an important tool in the fight against surgical site infections (SSIs).<sup>10-13</sup> Quality initiatives, including the Institute for Healthcare Improvement (IHI) and the Surgical Care Improvement Project (SCIP), and professional organizations such as the Association of PeriOperative Registered Nurses (AORN), the American Society of Anesthesiologists (ASA) and the American Society of PeriAnesthesia Nurses (ASPAN), all note the important role of normothermia maintenance in SSI reduction.<sup>14,15</sup> Several of these organizations specifically mention forced-air warming as a key means of maintaining normothermia.
- Because FAW blankets are single use, they cannot transmit infection from one patient to another. The U.S. Centers for Disease Control and Prevention recommends disposable products for patients with known or suspected infections requiring contact precautions.<sup>16</sup>
- Most forced-air warming blankets are not designed to be sterile, nor do they enter the sterile field. When used properly and as intended, the filtered air flowing from a warming unit is gently and evenly dispersed throughout the attached warming blanket, which is isolated from the surgical site by an adhesive strip on the blanket and surgical barrier drapes. And like many kinds of O.R. equipment, forced-air warming units also are typically isolated from the sterile field with surgical drapes.
- Orthopedic surgeon and leading SSI researcher Dr. Javad Parvizi authored a white paper that substantiates the safety of forced-air warming technology.<sup>17</sup> This research examines existing literature on forced-air warming's use in laminar flow operating rooms and affirms forced-air warming as a safe, effective technology for surgical patients. Another study was led by Dr. Daniel Sessler, concluding forced-air warming does not disrupt laminar flow or compromise the protection of the surgical site.<sup>18</sup>
- When tested during actual surgical conditions in both laminar and standard airflow operating rooms, forced-air warming systems do not increase bacterial counts at the operating site.<sup>19,20</sup>
- Forced-air warming blankets are designed to produce local, short-range increases in airflow velocity. Flow visualization techniques demonstrate that the airflow from FAW blankets has no significant effect on operating room airflow.<sup>19,20</sup>
- IOB warming units provide a second level of filtration. Operating room air is already filtered, and the IOB warming unit filters inlet air again with a high efficiency 0.2 micron filter. Air from the warming blanket is also isolated from the surgical site by barrier drapes and is forced down by the operating room air curtain.

- The motion of air in the operating room is regulated and tested. Air velocity is typically 25-35 ft/min, while air exchange is typically 20-25 times per hour.<sup>21</sup> Laminar flow is believed to reduce turbulence using air moving in an orderly way as a single column. Air velocity within the operating room is many times stronger than that of the forced-air warming blanket.
- One study conducted to address airborne contaminant and ventilation flow concerns found that forced-air warming had no negative effects on air quality in the operating room and is an efficient modality for maintaining normothermia in surgical patients.<sup>22</sup>
- High-quality randomized trials show that maintaining normothermia:<sup>23</sup>
  - Reduces surgical bleeding and the need for blood products
  - Reduces the risk of surgical wound infection
  - Decreases the risk of postoperative myocardial infarction (heart attack)
  - Shortens postoperative recovery and the duration of hospitalization
  - Improves patient comfort

We know forced-air warming. We focus on the category. It's at the core of who we are and what we do. Every day, we devote ourselves to working with health care providers across the globe to bring patients the benefits of normothermia.

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