

# Does managing patient shivering make you lose your patience?



Surface cooling in general increases shivering, and some types of surface pads may contribute to it even more. Some patients may exhibit more shivering than others, depending on the amount of skin contact from the surface cooling system. In a fever control study, patients showed a statistically significant higher rate of shivering when cooled with gel pads compared to traditional surface water circulating cooling blankets, which had limited skin contact.<sup>1</sup>

Intravascular temperature management has proven to be a more precise and efficient<sup>2</sup> means of cooling when compared to surface methods, and results in significantly less shivering.

## ZOLL's Intravascular Temperature Management System, Thermogard XP®:

- Results in a lower rate of shivering (4% vs 85% with surface),<sup>3,4</sup> which may require less sedation and can be used in awake, non-intubated patients<sup>5</sup>
- Does not over or under shoot the target temperature; maintains target temperature within  $\pm 0.2^{\circ}\text{C}$ <sup>6</sup>
- Reduces nursing workload by 74%;<sup>2</sup> no constant monitoring of temperature, managing shivering, checking pads, etc.

You need a system that efficiently manages the patient's temperature from the core, like ZOLL's Thermogard XP (TGXP).



<sup>1</sup>Mayer SA, Kowalski RG, et al. *Crit Care Med*. 2004. Dec;32(12):2508-15.

<sup>2</sup>CEREA Deye N, et al. *Circulation*. 2015;132:182-193.

<sup>3</sup>Diringer MN, et al. *Critical Care Medicine*. 2004;32(2):559-564.

<sup>4</sup>Carhuapoma JR, et al. *Journal of Neurosurgical Anesthesiology*. 2003;15(4):313-318.

<sup>5</sup>Erlinge D, et al. *Circulation*. 2010.

<sup>6</sup>Hoedemaekers CW, et al. *Critical Care*. 2007;11:R91.