Negative pressure wound therapy (NPWT) is a widely accepted modality in the treatment of complex wounds. However, there are fundamental requirements, not included in all currently available NPWT systems, that must be met in order to realize its full clinical benefits which include: (A) the set level of negative pressure must be accurately delivered to the wound bed; (B) NPWT must create a pressure gradient between the wound bed and the waste canister to efficiently remove fluid and prevent stagnation in the tubing; and (C) NPWT must maintain a sealed wound environment. The objective of this investigation was to use a simulated wound model to compare the ability of System A" and System B" to measure each system’s ability 1) to deliver set levels of NPWT and 2) simultaneously efficiently remove fluid and prevent stagnation in the tubing; and (C) pressure gradient between the wound bed and the waste canister to NPWT systems, that must be met in order to realize its full clinical benefits.

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**RESULTS**

System A" removed simulated wound fluid more efficiently than System B" by evacuating 89% of the fluid from the simulated wound into the canister in under 20 minutes after introduction of the fluid. System B" did not attain 89% fluid removal throughout the duration of the experiment (125 minutes long) (Figure 3).

In less than 20 minutes, System A" was able to re-establish a set pressure of -125 mmHg returning patency and delivering consistent levels of therapy at the wound site. System B" fluctuated widely from the set pressure (-125 mmHg) throughout the test method. Additionally, System B" had frequent excursions that exceeded +/- 10 mmHg of the set pressure (-125 mmHg) thus directly impacting its ability to maintain set pressure at the wound site (Figure 4).

**CONCLUSION:**

This study showed the Intelligent Pressure Control and Dynamic Exudate Removal technologies provided by System A" improved fluid management and helped reduce the risk of tubing blockages from simulated exudate, while maintaining a set pressure at the wound bed. The results confirm the Intelligent Pressure Control feature illustrated by System A" meets the standard of care. Furthermore, the results of the bolus fluid challenge illustrate that the Dynamic Exudate Removal (unique to System A") allowed for faster and more efficient removal of fluid volumes while maintaining set pressure at the wound bed when compared with System B". Thus, System A" innovates the standard of care.