In this small study, the MSIII proved to be highly resilient and able to maintain function even after large repetitive emboli” Paul Pelletier and Fisher (2017).

Abstract:

The ALARIS MSIII Infusion Pump (CareFusion, San Diego, CA) uses 3 separate alarms designed to prevent air emboli: “check air sensor,” “air in lower tubing,” and “air in line.” It is assumed that ambient pressure changes cause air emboli that lead to pump failure although evidence to support this is limited. In this small study, the MSIII proved to be highly resilient and able to maintain function even after large repetitive emboli. Although unproven, it is more likely that these alarms are usually caused by loosening of the intravenous tubing within the pump’s collar.

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This disjointing of the tubing and the ultrasonic sensor can be perceived as an air embolus leading to severe consequences. If the user attempts the clear air function, the pump will not resume function. Problems such as this may have been related to at least 1 reported patient death. More research is needed to determine the cause of these alarms and determine the exact cause. Patient safety can potentially be improved at all levels including manufacturer
modifications and operator training. It seems reasonable that the manufacturer should design a mode ("transport mode") that allows the pump to function even with air emboli.

Reference:


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