



The authors present a case in which a physical anomaly with an infusion pump resulted in an unforeseen fault that the nurse's attempts to resolve unknowingly exacerbated" Ibey et al (2016).

Abstract:

The authors present a case in which a physical anomaly with an infusion pump resulted in an unforeseen fault that the nurse's attempts to resolve unknowingly exacerbated. This case study presents the first report in the literature to detail the difficulty in recreating a patient safety event using smart pump logs, support server continuous quality improvement (CQI) data, and the drug order entry system to elucidate the clinical scenario. A 75-year-old male patient presented to a major teaching hospital and was admitted to the intensive care unit (ICU) with a massive gastrointestinal bleed and myocardial infarction, then stabilized. One of the patient's pumps alarmed "communication error" on the display. The display gave no explicit instructions about how to resolve the issue, and resolution was not intuitive. Attempts to clear the alarm failed, so the module was disconnected to reprogram the infusion, causing an interruption in the dopamine. Over the course of approximately 2 min of troubleshooting, the patient's blood pressure decreased from 109/50 to 60/30, with a rapid pulse change from a consistent 95 up to 115 and subsequently 135 beats per minute. A cardiac arrest ensued and a code blue was called. All cardiac drugs, including the dopamine, were suspended during the code.

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Cardiopulmonary resuscitation was performed and the patient survived the code. Post-code, the dopamine and epinephrine were restarted, and the norepinephrine was discontinued. The patient's condition remained very unstable. Pump logs and the server database were queried to locate relevant equipment. It was concluded that dirty contacts on the inter-unit interface (IUI) connectors between the PC unit (PCU) and the modules caused the alarm message "communication error" to appear on the PCU display. Learning yielded a nursing practice alert to clarify how a nurse should resolve a "communication error", and appropriate cleaning protocols were promptly implemented. The investigation found smart pump event logs and proprietary software are not designed with any forethought as to retrospective reconstruction of incident investigations, leaving facilities to cobble together pieces of information from multiple sources to determine what occurred. The authors also suggest further pump enhancements, challenging pump manufacturers to go to the next level of integration and enable greater patient safety with smart infusion pumps.

Reference:

Ibey, A.A., Andrews, D. and Ferreira, B. (2016) Difficulty Using Smart Pump Logs to Recreate a Patient Safety Event: Case Study and Considerations for Pump Enhancements. *Drug Safety - Case Reports*. 3(1), p.3.

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