

## **The impact of traditional and smart pump infusion technology on nurse medication administration performance in a simulated inpatient unit.**

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Trbovich PL, Pinkney S, Cafazzo JA, et al. The impact of traditional and smart pump infusion technology on nurse medication administration performance in a simulated inpatient unit. *Qual Saf Health Care*. 2010;19(5):430-4. doi:10.1136/qshc.2009.032839.

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Errors at the administration stage are common for [intravenous medications](#). Programmable or [smart infusion pumps](#) are widely used as a means of preventing such errors. However, [prior studies](#) have found that smart pumps [alone](#) may not significantly reduce errors, as they do not eliminate wrong-patient errors and may be prone to [workarounds](#). This study compared three types of pumps—traditional pumps, smart pumps, and smart pumps combined with bar-code technology—in a simulated inpatient unit. The results indicate that smart pumps may reduce administration errors when combined with bar-coding or when only "hard" (unchangeable) dosing limits are used. Ultimately, creation of a "[closed-loop](#)" system that integrates [technological solutions](#) to prescription and administration errors represents the optimal solution for eliminating medication errors.