

Development and implementation of the intervention bundle was successful at reducing overall and medication error rates, but some errors remained and the potentially harmful error rate did not change” Schnock et al (2018).

Abstract:

INTRODUCTION: We previously found a high rate of errors in the administration of intravenous medications using smart infusion pumps.

OBJECTIVES/DESIGN: An infusion safety intervention bundle was developed in response to the high rate of identified errors. A before-after observational study with a prospective point-prevalence approach was conducted in nine hospitals to measure the preliminary effects of the intervention.

MAIN OUTCOME MEASURES: Primary outcome measures were overall errors and medication errors, with the secondary outcome defined as potentially harmful error rates.

RESULTS: We assessed a total of 418 patients with 972 medication administrations in the pre-intervention period and 422 patients with 1059 medication administrations in the post-intervention period. The overall error rate fell from 146 to 123 per 100 medication administrations ($p < 0.0001$), and the medication error rate also decreased from 39 to 29 per 100 medication administrations ($p = 0.001$). However, there was no significant change in the potentially harmful error rate (from 0.5 to 0.8 per 100 medication administrations, $p = 0.37$). An intervention component aiming to reduce labeling-not-completed errors was effective in reducing targeted error rates, but other components of the intervention bundle did not show significant improvement in the targeted errors.

CONCLUSION: Development and implementation of the intervention bundle was successful at reducing overall and medication error rates, but some errors remained and the potentially harmful error rate did not change. The error-rate reductions were not always correlated with the specific individual interventions. Further investigation is needed to identify the best strategies to reduce the remaining errors.

CLINICAL TRIALS REGISTRATION: Registered at [ClinicalTrials.gov](https://clinicaltrials.gov), identifier: NCT02359734.



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Reference:

Schnock, K.O., Dykes, P.C., Albert, J., Ariosto, D., Cameron, C., Carroll, D.L., Donahue, M., Drucker, A.G., Duncan, R., Fang, L., Husch, M., McDonald, N., Maddox, R.R., McGuire, J., Rafie, S., Robertson, E., Sawyer, M., Wade, E., Yoon, C.S., Lipsitz, S. and Bates, D.W. (2018) A Multi-hospital Before-After Observational Study Using a Point-Prevalence Approach with an Infusion Safety Intervention Bundle to Reduce Intravenous Medication Administration Errors. Drug Safety. February 6th. .

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