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Evaluating the effect of a pharmacist led medication review in high-risk patients on downstream health services utilization

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One in nine emergency department visits in Canada result from adverse drug events, the unintended and harmful effects of prescription medication use. An in-hospital pharmacist led medication review has been proposed to improve detection and communication of adverse drug events to reduce the likelihood of re-exposure and decrease unnecessary health services use. This study measured the effect of pharmacist led medication review relative to the standard of care on trends of downstream health services utilization. This study analyzed data of 10,327 high-risk patients from a prospective, multi-center quality improvement program. Patients were then allocated to receive either medication review or standard of care. Medication review involved a critical examination of a patient's medications to identify and resolve medication-related problems and communicate these results to community-based care providers. An interrupted time series analysis was used to compare the differences in outcomes one year following the intervention. Following medication review there was a level increase of 92.9 % total general practitioner visits per 1000 patients (95% CI: -291.5, 477.2; $p=0.64$) relative to the control group in the month following the intervention. The trend of general practitioner visits decreased by 3.5 per 1000 patients per month (95% CI: -70.9, 63.8; $p=0.92$) for 12 months following the intervention. This study presented a novel application of interrupted time series to evaluate the effect of pharmacist led medication review on health services utilization. While there were no statistically significant differences observed in general practitioner visits, further analysis will be done investigating the effect on alternative health services outcomes.