COMPUTERISED MEDICATION ANALYSIS DESIGNED TO MINIMISE INAPPROPRIATE PRESCRIBING IN OLDER HOSPITALISED PATIENTS: A SYSTEMATIC REVIEW

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Background: Prescribing medications for complex multi-morbid older patients is a challenging process. Computerised interventions have been suggested as an effective strategy to improve the appropriateness of prescribing in this patient group. This systematic review examined the evidence of efficacy of computerised interventions designed to reduce potentially inappropriate prescribing (PIP) in hospitalised older adults.

Methods: A comprehensive electronic literature search was conducted using 8 databases from inception to end of March 2017. Studies were included if they were controlled trials (randomised or non-randomised) of computerised interventions which aimed to reduce PIP in hospitalised older adults (≥65 years). Risk of bias was assessed using the Effective Practice and Organisation of Care (EPOC) criteria.

Results: A total of 594 records were identified after duplicates were removed. Eight studies met the inclusion criteria - two randomised controlled trials, two interrupted time series studies, and four pre/post intervention studies. Studies were mostly at a low risk of bias. The acceptance rates of computer-generated recommendations ranged from 29% to 95% in the studies that assessed this outcome. The majority of studies showed either a significant reduction in the proportion of patients prescribed a potentially inappropriate medicine (PIM), or a reduction in PIMs ordered compared to control patients (p<0.05). Three of the included studies assessed clinical outcomes, but there is insufficient evidence to suggest that such computerised interventions can have a significant effect on these outcomes.

Conclusions: This systematic review concludes that computerised medication review interventions are associated with a significant reduction in PIP in hospitalised older adults. However, the majority of included studies only focused on a limited number of PIMs. Further studies are required that utilise robust validated software engines capable of targeting a wider range of PIP instances, and that can result in clinically significant improvements in patient outcomes.